JPRS-UAG-86-025

23 SEPTEMBER 1986

USSR Report

AGRICULTURE

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APPEARANCE OF PLANT PESTS, DISEASES IN BELORUSSIA FORECAST

Warnings for Early June

Minsk SELSKAYA GAZETA in Russian 3 Jun 86 p 2

[Article by 1. Stalbovskaya, senior agronomist at the republic forecast laboratory, and N. Kharchenko, head of the forecast laboratory at the Belorussian Scientific Research Institute of Plant Protection: "Forecast of Appearance and Spread of Pests and Diseases of Agricultural Crops for the First 10-Day Period in June"]

[Text] The danger of damage to spring grain crops by FRIT FLIES will continue in the republic's northern regions on late sown plots. With due regard for the thresholds of pest harmfulness it is necessary to continue insecticide treatments.

The appearance of HELMINTHOSPORIOSIS on barley crops is noted everywhere. The development of the disease is still weak. On elite crops (especially the susceptible varieties "favorit," "zazerskiy-85," "ida," "roland," and so forth), which are at the phase of tillering and beginning of heading, if the disease is present, fungicide treatments are needed. On commodity crops a single treatment at the phase of the beginning of heading is advisable. The time for this treatment in the republic's southern regions has already arrived and in central regions this treatment should be carried out during the first 10-day period of June.

POWDERY MILDEW and SEPTORIA LEAF SPOT have been detected on individual areas of winter grain crops everywhere. These diseases are on the rise. It is necessary to keep crops, especially those cultivated according to intensive technology, under control and, when disease spots appear on the third leaf from the top at the phase of the end of shooting-heading, to carry out fungicide treatments.

In all the republic's sugar beet planting regions sugar beet crops are intensively infested with the SPINACH LEAF MINER. The infestation of crops is very great. The pest population continues to increase. It is especially dangerous in connection with the early infestation of crops (at the phase of

cotyledonous leaves). In foci there is also a danger of damage to sugar beets by the OPAQUE CARRION BEETLE. Insecticide treatments against sugar beet pests are mandatory.

CLOVER SEED WEEVILS will present tremendous danger to seed clover crops at the phase of the beginning of budding. The pest population greatly exceeds the threshold population everywhere. In connection with this protective measures should be implemented on seed clover crops without mowing. On white clover high-cut mowing and, after the mass is harvested, insecticide treatments are recommended.

BEAN AND PEA WEEVILS will continue to damage seedlings of pulse crops. Crops should be treated with due regard for the threshold pest population.

The POLLEN BEETLE appeared in big numbers on seed crops of winter rape at the phase of budding-beginning of blooming. With a density of three beetles per plant and more treatments are needed.

Cabbage of late varieties planted in the ground will be infested with TURNIP FLEA BEETLES. The danger of damage can be very big if the hot dry weather continues. The CABBAGE ROOT FLY, whose population is high during the current season, will also be dangerous.

An intensive flight of butterflies of the CODLING MOTH is noted in the republic's southern and central zones. Egg laying has begun in southern regions. The release of the Trichogrammatidae family should be organized in private orchards here during the first 5-day period of June. In central regions this measure should be implemented during the second 5-day period of June.

Warnings of Early July

Minsk SELSKAYA GAZETA in Russian 3 Jul 86 p 3

[Article by Ye. Kolonitskaya, head of the republic forecast and diagnosis laboratory, and N. Kharchenko, head of the forecast laboratory of the Belorussian Scientific Research Institute of Plant Protection: "Forecast of Appearance and Spread of Pests and Diseases of Agricultural Plants for the First Half of June"]

[Text] COLORADO POTATO BEETLE. In Brest and Gomel Oblasts in connection with the high population of the Colorado potato beetle it is necessary to continue mass treatments of potatoes against the pest. On some plots in the presence of larvae above the threshold population repeated treatments will be needed during the first half of July.

The cool weather during the last 5-day period of June and the sharp drops in the air temperature during the month inhibited the spread and development of the Colorado beetle in the republic's central and northern zones. Here a higher infestation of plants with the pest is noted on early sown crops, on which selective treatments and in some cases headland treatments as well are

necessary. However, in most regions of these zones the population of the Colorado beetle will not reach critical indicators. Therefore, insecticide treatments should be carried out only with due regard for their advisability.

In some of the republic's regions a coincidence of the time of control of the Coloroda beetle and of late blight of potato is possible. In such cases combined plant spraying should be carried out.

In connection with the manifestation of bacterial and virus diseases on potato crops during the budding-blooming period it is necessary to carry out repeated sanitary cleaning. Sick plants and tubers must be removed from fields without fail and then destroyed.

The infestation of sugar beet crops with the beet aphis continues everywhere and in Gomel and Brest oblasts, with the spinach leaf miner and the second-generation beet tortoise beetle. Therefore, it is necessary to establish strict control over plants and, when the threshold density of pests is attained, as well as with due regard for the useful activity of entomophages, to organize protective measures.

The harmful activity of caterpillars of the cabbage moth, diamond-back moth, and white cabbage butterfly will continue on cabbage plantings in southern and central zones. A general increase in the density of cabbage leaf miners is expected during the first half of July and the harmful activity of their caterpillars will be intensified. When the threshold population of one of the pests is established, it is necessary to apply bacterial preparations against pests.

Pea moth eggs are being laid on pea crops. An increase in the intensity of egg laying is possible at the beginning of July. Therefore, on seed plots it is necessary to organize the release of the Trichogrammatidae family and insecticide treatments against the pea aphid.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

METHODS OF PROTECTING POTATOES AGAINST LATE BLIGHT DISCUSSED

Moscow SELSKAYA ZHIZN in Russian 1 Jul 86 p 2

[Article by V. Martynenko, deputy chairman of the All-Union Scientific Production Association for Agrochemical Services to Agriculture, I. Kuznetsova, chief agronomist of the association's Administration for Plant Protection, and R. Bogoyavlenskaya, senior scientific associate: "Attention: Late Blight!"]

[Text] The insidious disease late blight, which affects leaves and tubers of plants, does great damage to potato growing. Its manifestations are quite diverse. The following are considered classic: Brown wet spots of an incorrect round form appear on leaves along the edge of lobules. In the presence of dew and fog a whitish-gray deposit of fungus spore bearing appears on these spots on the lower side. Brownish recesses, under which brown atrophied tissues going deep into the tuber are visible, appear on the affected tubers.

Along with typical symptoms an untypical manifestation of late blight is observed during some years: Small leaves with closely placed corrugated lobules are formed on tops of shoots, the veins and stalks of leaves acquire a brown color, and dark, almost black longitudinal strips of the atrophied tissue appear on shoots, as well as on roots. From the external symptoms it seems that this is the bacterial disease "wire stem," but in contrast to the latter mucilaginization--the main sign of affection with bacterioses--does not appear.

How to explain the different picture of the disease? The typical symptoms of the disease appear on plants as a result of the development in tissues of fungus mycelium with a subsequent formation of spore bearing--conidia. However, as established by research, the life cycle of the pathogen of this disease also has a nonmycelium form, which is transmitted by heredity and during development in cells causes a disintegration of their content.

Tubers, both those that have late blight spots and externally healthy ones, are the source of infection of late blight of potatoes. The fungus is preserved in them in the nonmycelium form and passes into the developing shoots. Plants healthy in their external appearance, but carrying a latent infection, grow. During the vegetative period, when the physiological state

of plants changes under the effect of environmental factors (food, air temperature, moisture, and so forth), the pathogen is activated and its latent destructive work begins long before the appearance of visible symptoms.

The manifestation of the disease on stems has increased sharply in recent years. The unbalanced application of big doses of mineral, especially nitrogenous, fertilizers, with an insufficient provision of plants with organic fertilizers is the cause of this. As a result, mycotrophy, that is, a useful symbiosis of endophytic fungi with plants ensuring the resistance of potatoes, is lowered.

The discovery of the nonmycelium form in the cycle of fungus development changes our approaches to the control of late blight. Whereas previously we were oriented toward the protection of plants against a flying infection, that is, from fungus conidia, and recommended that control begin during the appearance of the first spots on leaves, now, taking into consideration the presence of an internal infection, control of the disease should begin much earlier, preventing the development of the mycelium form of the fungus, that is, at the phase of seven to nine leaves (before the formation of inflorescence and the closing of the top).

Highly effective fungicides of a systemic and contact effect have been developed and are utilized widely in the control of late blight of potatoes. The systemic preparation ridomil gives good results. It penetrates into green tissues in 30 minutes and with the ascending currents of the plant juice is spread throughout the bush. Rains falling after the spraying do not lower the effectiveness of ridomil, which makes it possible to increase the intervals between treatments significantly. However, when the preparation is applied incorrectly, resistance (habituation) can occur in the pathogen. In order that this may not happen, it should be applied only in tank mixtures with contact effect preparations. Such mixtures are prepared in terms of 0.8 kg of ridomil with one of the contact fungicides permitted for potatoes, that is, polycarbazine, cuprozan, polychrom, copper oxychloride, zineb, and so forth, per hectare. The norm of consumption of the contact preparation in the tank mixture is 2 kg per hectare. Instead of tank mixtures it is possible to utilize the plant preparation arzerid made on the basis of ridomil in a dose of 2 to 2.5 kg per hectare.

It is very important to observe the schedules of spraying and the scheme of rotations of fungicides. In zones with increased harmfulness of late blight ridomil in tank mixtures, or the arzerid preparation, should be used during the first and second treatment of potato crops at an interval of 15 to 20 days between treatments. The third and subsequent spraying should be carried out by contact fungicides alone in doses recommended for potatoes. Urea is added to them (20 kg per hectare). It stabilizes the suspension and increases its toxicity.

In zones of moderate or weak development of late blight ridomil in a mixture with contact fungicides, or arzerid, is used for the first preventive spraying, then, after 15 to 20 days, contact fungicides are applied, and, if needed, the third spraying is carried out after 7 to 10 days. The chemical treatment of crops must be stopped 20 days before harvesting.

The destruction of the affected top 12 to 14 days before harvesting on seed plots and 7 to 10 days on commodity plantings is an effective method of controlling the disease.

Late blight is no less harmful in tomatoes. In order to save and preserve their harvest, it is necessary to carry out, from the moment of infructescence, systematic treatments of this crop with fungicides, alternating the application of contact effect preparations with the systemic preparation ridomil or arzerid. The norm of arzerid consumption in tomatoes is 2.5 to 3.3 kg per hectare.

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CSO: 1824/406

PREPARATIONS FOR CONTROL OF POTATO DISEASES RECOMMENDED

Minsk SELSKAYA GAZETA in Russian 15 Jul 86 p 2

[Article by A. Ilyasevich, chief of the sector for potato production of BSSR Gosagroprom, and V. Kurilov, head of laboratory at the Belorussian Scientific Research Institute of Plant Protection: "Reliable Barrier Against Pests and Diseases for Potatoes". Passages between brackets published in boldface]

[Text] Last year most of the republic's kolkhozes and sovkhozes lowered the potato harvest owing to the fact that the treatment of crops against late blight was carried out not on schedule and in a poor quality manner. Instead of the three to five treatments with fungicides recommended by science and advanced practice, most farms carried out one or two treatments and even those were not on schedule. The duty of managers, agronomists, and specialists of the plant protection service of kolkhozes, sovkhozes, and scientific production associations for agrochemical services to agriculture is to prevent these mistakes and miscalculations.

/To increase the resistance of potato plants to late blight and other diseases, when they reach a height of 15 to 20 cm, it is necessary to organize a treatment with a 0.1-percent blue vitriol solution. The first spraying is carried out before the appearance of the disease, when the budding-blooming phase arrives; the second and subsequent, during rainy weather after 5 to 7 days and during ordinary weather, after 10 to 12 days. When the initial signs of diseases appear on early varieties, the first treatment of medium-ripening varieties and the second treatment of early varieties are carried out. Late varieties are sprayed for the first time during the appearance of signs of a disease on medium-ripening varieties or simultaneously with the third treatment of early varieties. The frequency of treatments depends on the development of late blight and the group of ripening of varieties./

When the first two treaments against late blight are carried out, an addition of urea (20 kg per hectare) to the fungicide is recommended. It stabilizes the suspension, increases the toxicity of preparations, and intensifies the resistance of plants to the pathogen.

/This year the republic received a new preparation--arzerid--(2.5 kg per hectare) for the control of late blight. This is a plant mixture of ridomil with polycarbazine./

If needed, subsequent spraying is carried out with cuprozan or zineb. In the absence of ridomil, cuprozan, polycarbazine, or zineb are used, their application being alternated.

It should be noted that ridomil possesses both a preventive protective effect, averting the infection of potatoes with late blight, and a destructive (therapeutic) effect, eliminating the causative agent, which has entered the plant, and preventing the development of new infections. It is necessary to apply it primarily on potato crops at experimental bases and on seed plots of kolkhozes and sovkhozes.

Now it is also necessary to pay attention to the protection of crops against the Colorado potato beetle.

/The optimum time for chemical treatments against this pest is when larvae of the first to third ages predominate in the population. At this phase of development they are most sensitive to insecticides and have not yet managed to damage the top. Larvae of the fourth age do the greatest damage to potatoes and are also the most resistant to preparations. Clutches of eggs hardly perish as a result of chemical treatments./

/Chemical agents on potato plantings must be applied when the pest infests 10 percent of the plants and more with a predominant population of 20 larvae per shrub and more./

/Of the biological agents for the control of the Colorado potato beetle bitoxybacillin (2.0 kg per hectare) is applied. Its effectiveness depends on the time and frequency of treatments and the intervals between them. The greatest effect from this preparation is attained when the first treatment is carried out during the mass appearance of larvae of younger ages and the intervals between treatments are 5 or 6 days. Potato crops can be treated with it up to three times. This preparation is also for retail sale in 200- to 300-gram packages and, therefore, can find more extensive application on private plots./

When the periods of treatment against the Colorado potato beetle and against late blight coincide, overall spraying is recommended. If after the application of contact pesticides it rains for 3 or 4 hours, crops should be treated again, but only when plants dry up completely.

In order to prevent the spread of virus diseases on seed potato crops, especially at the republic's experimental bases and on kolkhozes and sovkhozes, which also grow seeds, special attention should be paid to prompt phytosanitary cleaning and to the control of carriers of virus diseases.

/The first cleaning is carried out during the period of full potato sprouts, the second, during the period of mass blooming, and the third, before the destruction of tops (2 weeks before harvesting). During the cleaning the tops and tubers of discarded plants, as possible sources of virus diseases, wire stem, and ring rot, are removed from the field on the same day and destroyed./

All potato protection measures should be carried out competently under the guidance of farm agronomists and specialists of plant protection stations.

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CSO: 1824/406

POST HARVEST CROP PROCESSING

IMPROPER STORAGE OF SUGAR BEETS

Moscow EKONOMICHESKAYA GAZETA in Russian No 1, Jan 86 p 17

[Article by N. Kozlov under the rubric "Preserve, Rework All That Is Grown": "What Will Happen to the Beet Piles"]

[Text] On the huge barren area near the approach to the settlement of Gorshechnoye, where one would hardly cast a glance, snow covered hills and mounds have appeared. These are for sugar beet storage. Thousands of tons of raw material for sugar refineries in Kursk Oblast have accumulated here. The sugar beet plantation harvest, ready for processing, was stored right on the ground near a railroad embankment. They didn't even get around to preparing a level site for the sugar beet point. Smoke is issuing from the tops of several beet piles, a sure sign that the beets are beginning to "burn" and that the harvest is threatened. This is not the only case of a wasteful attitude towards raw materials in Kursk Oblast.

Beet growers did not raise a bad harvest in the final year of the 11th Five-Year Plan. The roots were gathered on time and delivered to sugar refineries or to various beet points. However, the proper storage of beets was not organized. The widespread storage method with active ventilation and automatic temperature regulation in piles was not used.

To reduce raw material losses it is necessary to minimize the time required for hauling sugar beets from reception points to refineries and to accelerate beet refining. This solution has been approved by oblast organizations. Precise schedules for beet transportation were worked out and given to transportation organizations. However, they have not succeeded in observing them. Not one element in the "beet point - sugar refinery" conveyor showed the needed organization and discipline.

Let us begin with the transport workers. Since the beginning of November the Belogorod Division of the railroad has owed the Kursk Association 1,300 freight cars. Neither have workers on the Kursk Division pleased farmers. During this same time they failed to spot 1,200 gondolas for loading at beet points. Beet loading is especially poorly organized at the Ryzhkovskiy and Korenevskiy points, where there are still huge amounts of raw materials.

The slow arrival of empty gars is not the only reason for delays in transportation. People's controllers, checking the situation at beet points and sugar refineries, discovered several instances where beets were only slowly unloaded.

Year after year large amounts of beets spoil at reception points, especially in remote rayons. Nevertheless, sugar refineries fulfill their plans. How? Through excess supplies of raw materials accumulated when kolkhozes and sovkhozes deliver beets. By increasing the contamination rate, and by other well known methods, the beet growers' partners accumulate a invalid stock for successful, loss free work, even if a large quantity of beets spoil.

The sugar beets grown by farmers in the oblast were sufficient to completely fulfill the annual plan for the sale of this important product to the state. Now both the protection of stored beets and the production of the final product, sugar, depend to a great extent upon collectives at processing enterprises.

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CSO: 1824/400

POST HARVEST CROP PROCESSING

MECHANIZATION OF SUGAR BEET THINNING HINDERED

'Minimize Manual Labor'

Moscow SELSKAYA ZHIZN in Russian 25 Dec 85 p 2

[Article by L. Zenin, department head, All-Russian Scientific Research Institute for Sugar Beets and Sugar; and A. Trubnikov, correspondent: "An Obstacle on the Path of Progress"]

[Text] Last summer we visited a number of oblasts in the Central Chernozem Zone and looked at sugar beets grown by intensive technology. In particular, one of the fields at the Kolkhoz imeni Chernyakhovskiy, Lgovskiy Rayon, Kursk Oblast, made a good impression.

I. P. Aseyev, chief agronomist, explained, "The beet growers did not participate in managing crop density. It required only a small amount of weed control. I am very sorry that we did not introduce progressive technology. After all, it was developed a long time ago."

To be exact: At the recommendation of scientists at the Lgovskiy Sugar Beet Experimental Station some mechanized detachments and links in Kursk Oblast began to grow beets with minimal manual labor in the second half of the 1970's. At about the same time scientists at VNIISS [All-Russian Scientific Research Institute for Sugar Beets and Sugar] introduced a similar technology. Several farms have mastered the progressive methods.

However, it must be admitted that most farms work in the old way. In Belgorod, Voronezh and Kursk oblasts sugar beets are grown with minimal labor outlays only on about half of the fields devoted to this crop. Truthfully speaking, however, even these uncomforting figures are clearly exaggerated. For example, in Kashirskiy Rayon, Voronezh Oblast, it is thought that beet growers at the Kolkhoz "40 Years of October" are keeping pace with scientific-technical progress. However, this is not so. Last year two-thirds of all labor outlays on each hectare devoted to sugar beets were by manual labor.

A. P. Mokshin, the kolkhoz chairman, acknowledges "Now we only use manual labor."

At the Zolotoy Kolos Kolkhoz there are 14 hectares of sugar beets for each beet grower. During thinning here they do not use machinery. This requires bringing in up to 200 people from other sectors and from enterprises in the

rayon. Labor outlays per hectare exceed 200 person hours. Last year in Voronezh Oblast as a whole manual labor was used to manage crop density on two-thirds of the fields. Little has changed this year.

Similar instances are observed throughout the Chernozem Zone. Even where it was thought that progressive methods were used. What can one say about farms which are not among those who have mastered industrial technology? In Pristenskiy Rayon, Kursk Oblast not only are yields declining, but beet production costs are increasing. Last year each quintal cost 5 rubles 39 kopecks. This is almost twice as much as in Oktyabrskiy Rayon, where a number of farms have rejected manual labor. Such obstacles really have a high price.

It must be stressed that the psychological factor frequently becomes more important than the economic. Although it is only temporary, traditional old methods pervail over new ones. At the Kolkhoz imeni Lenin, Prokhorovskiy Rayon, Belgorod Oblast, about 20 kilograms of beet seed are planted per hectare. The excessive number of sprouts so obtained require manual labor to be used for thinning. A. I. Pogrebnoy, the chief agronomist decided not to plant at planned density because some of the young plants might be destroyed by pests and weeds.

Of course, there can be no success without strengthening labor and technological discipline. Scientists and specialists often help farms in scientifically based agro-technical measures, but in many cases they are not completely implemented and the optimal timeframes are not observed.

Reductions in qualitative indicators cause such substantial damage! One sees cases where machinery operators do not sharpen the plows and do not really set them deep. As a result they do not break up the soil, but only scrape along the surface. Beet harvesting machine beet finders and automatic devices do not operate, leading to losses and harmful beet cutting and making it necessary to use manual labor to clean beets. This is caused not only by the unattentiveness of many operators, but also by specialists' lack of skill in regulating the mechanisms.

The conditions for eliminating these obstacles from the fields have been created almost everywhere. The Chernozem Zone has enough fallow to locate sugar beets only after the better predecessors. There are positive solutions to fertilizer and seed production questions, but there is complete disorder when it comes to tilling the soil. There are not enough share scufflers to prepare soil so it is like improved fallow. Industry is mainly producing high speed mouldboard plows which do not completely turn over and crumble the plowed layer. The ShB-2.5 harrow provides high quality tillage, but because of their scarcity it is necessary to use less effective toothless drag harrows.

Take herbicide sprayers. First of all, they can only apply in large doses, 300 and more liters per hectare, secondly, because of the poison dispersion, the operators must wear respirators. The lack of cutoff valves leads to improper distribution of chemicals. The institute's experiments show that by using flat cone sprayer nozzles, herbicide applications can be reduced 3-6 fold and working conditions sharply improved. However, their production has not been organized. There is an acute shortage of herbicide tanks for sprayers.

The planters now being produced often put two seeds in a hole. This reduces the efficiency of mechanized thinning and leads to 15-20 percent losses in the harvest. The number of twinned plants can be reduced by coating seed, but because of low quality, this method has not found widespread use. There is another, more effective method, equipping planters with pneumatic sowing devices, as in a number of foreign countries. However, when will this bee done? Incidentally, seed arriving at farms does not meet requirements.

"The problem is that seed producers are operating with obsolete GOST's [State standards], according to which first class seeds should have an 80 percent sprouting rate, 75 percent hybrid growth uniformity, 85 percent uniformity." said P. I. Derglev, head of the Sugar Beet Department at the Kursk Oblast Agricultural Administration, "Modern equipment makes it possible to increase these three indicators to 95 percent."

Beet growers are waiting for workers in the sectors involved to help them by making up for shortcomings with reliable ridgers, light harrows for presprouting harrowing, and highly efficient herbicides. Finally, it is time to supply beet harvesting machines with tools which could be changed, depending upon weather and soil conditions.

The switching of beet growing to an intensive path is the call of the times. I want to stress the importance of this important factor in connection with the discussion of the draft for the Basic Directions for the Economic and Social Development of the USSR. It was deemed necessary to make the following addition to Section VI of these Directions: "Accelerate the introduction of an entire complex of industrial technology for beet production, minimize manual labor in growing sugar beets and other labor intensive crops." This was requested by A. I. Litvishko, link leader at the Zarya Kolkhoz, Talovskiy Rayon, Voronezh Oblast, V. G. Podobed, chairman of the Kolkhoz imeni Kulakov, Lgovskiy Rayon, Kursk Oblast, N. G. Tarasov, chief agronomist at the Kolkhoz imeni Kirov, Oktyabrskiy Rayon, and others.

It is necessary to more boldly move to modern progressive technology in agriculture, and to more effective forms for using material and labor resources. And not only in the Central Chernozem!

Ministry Replies to Criticism

Moscow SELSKAYA ZHIZN in Russian 14 Mar 86 p 3

[Article by D. Kurtsev, deputy chief, Technical Administration, USSR Ministry of Tractor and Agricultural Machinery Building: " 'Obstacles' on the Path to Progress'"

[Text] On behalf of management at the USSR Ministry of Tractor and Agricultural Machinery Building, the Technical Administration read the article "Obstacles on the Path to Progress" published in SELSKAYA ZHIZN on 25 Dec 85, and reports the following:

Because of low technical standards, the production of PPL-2 stubble plows has been halted. The SKB [Special design office] at the Altay Agricultural Machinery Plant has been entrusted with the radical modernization of this machine. During 1989-1990 it is intended to produce 20,000 modernized modernized tillers of the PPL-10-20 type.

Since 1983, taking into account comments by agricultural workers, the Odessapochvomash [Odessa Soil Machinery] Production Association has been producing plows equipped with frames for work at 7-9 kilometers per hour. For deep plowing of fields under beets the sector is producing sufficient numbers of PN-4-4-, and PNYa-4-40 double bottom plows for the Ukraine and Moldavia.

The production of the ShB-2.5 toothless drag harrows mentioned in the article has been curtailed due to lack of orders from farms. The USKM-5.4B and the KRSh-8.1 have been recommended for production. They do a high quality job of preplanting tillage and cultivation for sugar beets. Last year 10,000 USMK-5.4B's were built and this year it is intended to produce 12,000.

The 10 meter span KZK-10 clod crusher was developed in 1985 and recommended for production. It does good job of clod crushing and improves and levels the soil. In 1986 it is intended to build 3,000 such machines.

The boom sprayers now produced can be used to treat sugar beets. They assure low volume norms for applicant consumption (the OPSh-15 and OPSh-15-01 sprayers use 75-300 liters per hectare; while the POM-630 and POM630-1 top dressing applicators and sprayers use 75-200 l/ha). They are equipped with flat cone (slit) nozzles and cutoff devices eliminating drip.

As far as the production of flat cone nozzels is concerned, the series production of slit, wear resistant metal-ceramic nozels was organized at the PO Abrasive Plant imeni Ilich (Leningrad). In 1985 more than 1 million units were produced. The series production of APZh-12 cutoff units for preparing fluids and the ZZhV-3.2 tanks begins in 1986.

In order to improve planting, work on perfecting beet planters with mechanical sowing units is under way at the PO Krasnaya Zvezda and the NPO VISKhOM. Thus, a number of new elements increasing planting accuracy are being used on the SST-12B and SST-18B planters.

In addition development work is under way on a universal planting unit for the high accuracy planting of row crops. In 1986 laboratory testing is planned for improved units of the type installed on the SUPO-9 planter and in 1987 experimental models of universal vegetable planters will be presented for testing

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POST HARVEST CROP PROCESSING

SUGAR BEET THINNING NOT COMPLETELY MECHANIZED

Moscow SELSKAYA ZHIZN in Russian 27 Apr 86 p 1

[Article by SELSKAYA ZHIZN Special Correspondents A. Trubnikov and A. Katkalov: "By a Cut Off Technology"]

[Text] Kursk-Belgorod-Voronezh Oblasts - Last year Kursk farmers considerably overfulfilled the plan for sugar beet sales to the state. More than 4 million tons arrived for processing. For the second time in a row their labors were rewarded by Challenge Red Banners of the USSR Council of Ministers and the AUCTU. Now they must gather at least 250 quintals of beets from each of 190,000 hectares. It has also been decided to substantially reduce manual labor outlays.

The second part of this obligation is of special significance. Outlays are even greater: They are about double the level for industrial technology, which is highly efficient. For a long time the Rossiya Kolkhoz in Medvenskiy Rayon got help in tending and harvesting crops from workers at one of the plants in Kursk, but now beet growers must go it on their own. Last year 0.35 person-hours were spent for each quintal of output.

A few days ago P. I. Dergilev, head of the Sakhsvekla [Sugar Beet] Production Association and I looked at how sugar beets were being planted on the third production section. An expert on sugar beet growing, Petr Ivanovich, painstakingly checked the quality of soil tillage, planting, machine reglation and all operations. Not one comment! We then visited with I. I. Rudnev, section head, V. G. Dyatlov, mechanized detachment head and some tractor operators. We were convinced that they have perfectly learned the "secrets" of progressive methods. This year detachments working under collective contracts intend to grow at least 500 quintals of beets per hectare, increase their sugar content and further reduce labor outlays and production costs.

At the Strana Sovetov Kolkhoz in Oboyanskiy Rayon, a quintal of beets costs 2 rubles, 88 kopecks, while in A. A.Goryanov's link, using progressive technology, the cost is 80 kopecks less. There is an 85 percent difference in manual labor outlays. The innovators' example is now being followed by two links -- those of A. V. Orekhov and M. V. Tarasov. We visited their fields and

were convinced that machinery operators in both units know their work. According to Kolkhoz Chairman V. A. Pavlov, in the future the kolkhoz will entirely switch over to beet growing with minimal manual labor outlays.

However, it must be admitted that many farms do not use the entire complex of agronomic measures, but only individual operations. This sharply reduces their efficiency. For example, at the Kolkhoz "40 Years of October" in Pristenskiy Rayon, beets do not follow better predecessors. Most of them follow winter crops, being planted after barley. It is not so simple to get rid of weeds from such fields. Also, neither agrotechnical nor chemical methods are fully used to fight weeds. This is the reason for the fear of planting at normed rates, so that crop density is managed only by machines.

After talking with managers and specialists at RAPO's, farms and units, and with beet growers themselves, we concluded that progress in beet growing is to a great extent delayed by insufficient knowledge and skills on the part of those directly involved. This is why old customs and ideas continue to survive. As a rule, attempts to attain results by declarations and orders do not succeed. Take the Kolkhoz "40 Years of October" where we visited I. N. Nikulin's link. Machinery operators here do not even have a sketchy idea about the essentials of progressive methods. Also, when we visited the link leader, there were only two permanent tractor drivers working with him. The farm is poorly equipped.

"It is time to produce planters," he said, "but the promised rollers have not arrived. To plant without rolling is to violate agrotechnical rules."

Many farms in other oblasts in the Central Chernozem also use cut off industrial technology.

The sugar beet field of the I. I. Gporbatenko's mechanized link at the Rossiya Kolkhoz Prokhorovskiy Rayon, Belgorodskiy Oblast touches upon a forest belt. At the edge of the forest there were planters full of seeds and fertilizer, tractor operators and women beet workers. We asked I. T. Dankov and N. T. Linkov, machinery operators, a few questions.

"How are you using industrial technology?"

"We have mastered it completely."

"However last spring you thinned plants manually, and now you have a seeding rate which will again require chopping."

After somewhat of a pause, Linkov answered:

"Last year we attempted to use reduced seeding rates on four hectares, but the crops turned out to be too thin."

Would it have turned out differently if, prior to planting, the soil had been plowed, rather than worked with beet cultivators? Who doesn't know that planting seed in cultivated ground will not sprout. On farms with low seeding rates, for example the Rossiya Kolkhoz in Shebekinskiy Rayon, the fields are

carefully leveled and seeds are placed not only at the set depth, but in soil compacted by rollers. Here are the calculations of these operators: in a given time a row crop cultivator can work a significantly larger area than a beet cultivator. Increased seeding rates save crops from excessive thinness, but the thinning is done by hired labor -- and they are brought in for solid pay. Kolkhoz Chairman N. S. Bazhenov's reference to difficulties in using progressive methods is completely groundless. The entire problem is that these methods presume high standards in crop production, which beet growers, even farm agronomists, clearly do not have.

Progressive methods are being slowly and uncomprehensively mastered in Voronezh Oblast, where low sugar beet yields are obtained year after year. Here, and incidentally in other oblasts in the zone, even specialists do not understand all the nuances of industrial technology and are unjustifiably shy [robost] about its use. Nobody we talked to during planting could state their labor outlays. Comment, as they say, is superfulous.

Eliminating shortcomings, Voronezh growers intend to plant at a better time and to grow and prepare 4 million tons of beets. This was explained by P. M. Yelchanikov, deputy chairman of the Voronezh Agro-Industrial Committee for the Production and Processing of Crop Products:

"Beet growers now intend to avoid mistakes and are fully resolved to obtain good results. Much has already been done. Beets on all 200,000 hectares follow better predecessors -- winter wheat, bare fallow and peas. However the main thing is that farms have, at the proper time, scuffled the stubble, worked weed infested areas with herbicide, applied the optimal amounts of fertilizer, plowed for winter fallow and have done a good job in preparing the soil in the Spring. Seven hundred large mechanized detachments have been set up and been allocated the needed cultivators, planters and cultivators. Everywhere technological charts have been compiled and cost accounting targets worked out. They are now working according to these.

High results are expected from a set of measures to control crop density: mechanized thinning, weeder harrows, manual checking. Frankly speaking, far from all farms previously did all these types of work in the way they should have.

An accepted innovation on the Voronezh fields is the slitter [shchelevatel], which assures a stable movement of workers' groups through row crops.

Sugar beets have already been planted on more than 600,000 hectares in the Central Chernozem. It is hoped that intensive technology will help growers radically correct the sugar beet growing situation.

11574
CSO: 1824/400

POST HARVEST CROP PROCESSING

BSSR AGROPROM SUGAR BEET SURVEY

Moscow SELSKAYA ZHIZN in Russian 5 Jun 86 p 3

[Article: "Sugar Beets — Model Care: An Operational Survey by BSSR Agroprom"]

[Exerpts] The most important and labor intensive period in growing sugar beets has now arrived for the republic's beet growers. Large ammounts of work must be done at sugar beet plantations: eradicate weeds from crops, over a 10-12 day period manage crop density, leaving at least 100,000 plants per hectare, arranged evenly in rows, and top dress plants. It is very important that all work be done on time and in a high quality manner.

Crop care work is precise and well organized at the Kolkhoz "40 Years of October" in Ivanovskiy Rayon, the Voskhod Kolkhoz in Kamenetskiy Rayon, the Leninskiy Put in Slutskiy, the imeni Kalinin in Nesvizhskiy, the imeni Voronetskiy in Berestovitskiy Rayon and at many others.

Sugar beet fields at these farms are free of weeds, chemicals have been applied against pests, and crop density work completed.

However, at a number of kolhozes and sovkhozes they have not succeeded in avoiding mistakes from past years. There are gross violations of the technology for sugar beet growing. As a result, crop density at farms was too thin and was uneven. Sizable areas had to be replanted.

At some farms there were violations of requirements for applying soil herbicides, in particular there were large intervals between application and covering, as a result, the poisons' effectiveness was considerably reduced or minimized.

It has been established that at a number of farms there were agrotechnical defects in planting sugar beets, planters were not regulated, they often moved at increased speeds across poorly prepared soils. As a result, seeds were placed irregularly or were left on the surface. This led to irregular and uneven sprouting and to excessive thinness. In this case the agronomic and engineering services at farms and rayagroproms allowed lack of control.

Unfortunately, sugar beet care has not been organized on time at all kolkhozes and sovkhozes.

As of 2 June sugar beets had been thined on more than half of the republic's planted area. However, this work is slow at farms in Ivatsevichskiy, Volkovysskiy, Zelvenskiy, Mostovskiy and Stolbtsovskiy rayons. This important measure was done at the end of optimal times. It is beet growers' duty to complete thinning in the next 2-3 days.

As quickly as possible, enough leaf structure must be formed to activate photosynthesis. Right after thinning, beets must be top dressed with 35-50 kilograms (active ingredients) of fertilizer per hectare (depending upon nitrogen doses in the main application). There should be no delays with top dressing. This year it must be done during 15-20 June. Any later time leads to reductions in beet sugar content. Simultaneously with top dressing, the soil should be hoed to depths of 6-8 cm. When necessary, there should be subsequent interrow hoeing 8-10 cm deep so that prior to beet top contact over the rows, the soil is maintained in a loose and clean condition.

This year massive development of the sugar beet miner fly is observed. Considerable infestation by this pest has been observed on kolkhozes and sovkhozes in Bretskiy, Ivanovskiy, Grodnenskiy, Berestovitskiy, Slutskiy, Soligorskiy and other rayons. Rayon plant protection services and farm specialists must take the current situation into consideration in organizing chemical treatment against the hatching eggs of this pest. Delays in this work threaten large losses to the crop.

The prompt and high quality completion of the set of agrotechnical measures for sugar beets will make it possible to obtain high yields of this valuable industrial crop.

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BRIEFS

VORONEZH BEET PROGRESS--It must be said that in many rayons in the oblast, although it is slow, work has been restructured in a new way. Much sugar beet area is on early, well fertilized fallow. Moisture has been retained, beet growers planted quickly and well, and, after obtaining, healthy sprouts, and, without respite, crop care work expanded. One of the decisive and laborious operations -- thinning plants, has been completed quickly and within the better times at many rayons. In short, in the Voronezh growers' work one can feel a striving to end the lagging, obtain 4.5 million tons of beets under any conditions and successfully fulfill the procurement plan. However, there are still sufficient causes for concern. Not only some farms, but also entire rayons are working without the needed intensity and deviating from industrial technology for growing sugar beets. Take Semilukskiy Rayon, neighbor to Ramonskiy Rayon. Beets occupy more than 7,500 hectares here. Agrotechnical rules are frequently violated on these lands. Fertilizer is irrationally used at farms. This is why during the past five-year plan sugar beet yields were only 109 quintals per hectare. It would seem that these sad lessons would give farm managers and specialists justified cause to change their attitude towards sugar beets. Alas, this has not been noted. Everybody knows the effect had by mineral fertilizers, especially when applied during main plowing. In Semilukskiy Rayon they do not want to reckon with this rule. This harvest only received 219 kg of active ingredients per hectare, and at some farms even less. Neither are they very drawn to industrial technology. Only 13 mechanized links have been set up in the Rayon. Only 1,800 hectares, about the same area as is worked manually, have been attached to these links. Once again, almost 4,000 people are needed from the rayon center and Voronezh to work the beets. How much will be trampled down? [Excerpts] [Moscow SELSKAYA ZHIZN in Russian 4 Jun 86 p 1] 11574

VORONEZH SUGAR BEET PLANTING COMPLETE--Farmers in Voronezh Oblast have completed sugar beet planting. Brigade contracts were used preeminently. Quality checks, regulating time and labor payments, are being conducted on all agrotechnical operations [Text] [Moscow PRAVDA in Russian 9 May 86 p 2]] 11574

VORONEZH BEET PLANTING--The oblast's farmers are planting sugar beets in a friendly and organized fashion. Everywhere, on 200,000 hectares, the seeds are being placed in well worked soil, in which mixed fertilizer has been applied. Not loosing any time, beet growers are tending to their crops. Plantation masters do not permit stereotypical determination of the type of work and the use of machinery. They are creatively approaching each field. Beet growers in Buturlinovskiy, Verkhnemamonskiy and Vorobeyevskiy rayons are eliminating the consequences of frosts which occurred in the first days of the month. [By A. Katkalov] [Text] [Moscow SELSKAYA ZHIZN in Russian 14 May p 1] 11574

KURSK SPRING WORK-- Spring field work is being rapidly done in Kursk Oblast. It is being complicated by the need to replant some land -- during a snowless winter some of the winter and perennial grasses froze. Machinery operators in Oboyanskiy Rayon are ahead of others. Soil preparations for sugar beets are under way at full speed. Following the example of A. Goryaynov at the Strana Sovetov Kolkhoz, each farm has decided to grow this crop on 50-110 hectare fields, using only manual labor. This year Kursk farmers must plant more than 190,000 hectares of sugar beets and about 1 million hectares of grain crops. [By N. Vladimirov] [Excerpts] [Moscow SOVETSKAYA ROSSIYA in Russian 10 Apr 86 p 2] 11574

KURSK SUGAR BEET CARE--Kursk--About 190,000 hectares in the oblast are now devoted to sugar beets. Good germination has been observed almost everywhere and crop care is expanding on a wide front. In Sudzhanskiy, Belovskiy, Medvenskiy, Shchigrovskiy and a number of other rayons sugar beet growers and machinery operators have begun thinning and crop density management work. High degrees of organization on the fields are promoted by collective contracts. The unregulated detachments and links, to which all sugar beet land is attached, intend to obtain 250 quintals per hectare this year and to deliver the sugar industry 3,600,000 tons of raw material. [By A. Trubnikov] [Text] [Moscow SELSKAYA ZHIZN in Russian 23 May 86 p 1] 11574

PROGRESSIVE TECHNOLOGY--Kursk--Farms in the Kursk Production Association for Sugar Beet Seed Growing overfulfilled their five-year plan for beet seed production and sales. Kolkhozes and sovkhozes were delivered 298,000 quintals, 11 percent more than the target and 1.6 fold more than in the 10th Five-Year Plan. The Association has entirely switched over to growing Lgovskaya-52 variety seeds, suitable for industrial technology. [By A. Trubnikov] [Text] [Moscow SELSKAYA ZHIZN in Russian 9 Jan 86 p 1] 11574

AUGUST FALLOW--Kursk--Sugar beets occupy about 200,000 hectares in the oblast. In order to lay a solid foundation for the future harvest, machinery operators have decided to deep plow winter fallow in August. Special plowing links and detachments have been designated everywhere. Centralized detachments, led by engineers and with powerful tractors have been set up at Rayselkhoztekhnika in many Rayons. Such a detachment in Solntseevskiy Rayon plans to deep plow 8,600 hectares of fallow. [By A. Trubnikov] [Text] [Moscow SELSKAYA ZHIZN in Russian 20 Apr 86 p 1] 11574

BEET THINNING--Belgorod--Farmers in Belgorod Oblast completed thinning on all sugar beet land. This crop is grown primarily by industrial technology. Unregulated mechanized links rapidly worked the fields. Farmers began interrow hoeing simultaneously with liquid nitrogen top dressing. This year the oblast's beet growers intend to sell the state 3,200,000 tons of the sweet roots. [Text] [Moscow TRUD in Russian 10 Jun 86 p 1] 11574

BEET HARVEST--Ufa--Bashkirian beet growers are intensively harvesting and hauling sugar beet in the last 10 days in October. The last few thousands of tons of the crop are being stored in field pits, while more than 1 million tons have been delivered to reception points. [By V. Orlov] [Text] [Moscow SELSKAYA ZHIZN in Russian 27 Oct 85 p 1] 11574

BEETS SPROUT--Ufa--Presprouting harrowing and blind cultivation -- using cultivators to work soil between rows of sugar beets -- is being completed by machinery operators in Buzdyakskiy, Karmaskalinskiy, Chekmagushevskiy and other beet planting rayons in Bashkiriya. Many machinery operator links in the autonomous republic are competing to obtain 300-350 quintals of roots per hectare. [By V.Orlov] [Text] [Moscow SELSKAYA ZHIZN in Russian 30 May 86, p 1] 11574

CSO: 1824/400

FEED PROCUREMENT REVIEWS REVEAL REGIONAL PROBLEMS

Glinka Report

Moscow SELSKAYA ZHIZN in Russian 25 Jul 86 p 1

[Article by M. Glinka, zootechnologist: "Technology and Quality: Agricultural Survey"]

> [Text] The USSR TsSU [Central Statistical Administration] reports that as of 21 July seeded and natural grasses occupying 44.8 million hectares were cut for the first time for hay and haylage purposes. The country's enterprises procured 43.9 million tons of hay (54 percent of the quota), 43.2 million tons of haylage (66 percent) and 15.1 million tons of straw, chaff and other coarse feeds. The result was the production of 6.4 million tons of prepared silage and 3.2 million tons of artificiallly-dehydrated green feeds. A total of 40.6 million tons of feed units were procured, or 29 percent of the quota--4.7 quintals per standard head of cattle.

Have you ever thought about the fact that the slogan that calls upon us to fight for feed in the same way we fight for grain is at the same time a call simply to fight for grain? The tie here is most direct. Whereas with the use of first-class coarse and succulent feeds we can produce 10-12 kilograms of milk per cow and 500-600 grams of weight gain in calves daily without the expenditure of grain forage, when feed quality deteriorates it becomes necessary to compensate for the shortage of nutrients in the ration by using concentrates in order to achieve the same level of productivity. The difference is significant--the use of every ton of first-class hay enables us to save (in comparison to non-quality feed) about 200 kilograms of grain concentrates and over 120 kilograms of haylage. If the enterprises of Belorussia today stockpiled over 2.5 million tons of first-class hay and over 4 million tons of first-class haylage this would be equivalent to producing almost 1 million tons of additional grain. In the republic this year workers are serious about improving feed quality. Here is the result--there is not a single oblast in which less than 80 percent of the procured hay was first class. In Gomel Oblast 89 percent of this feed belongs to the highest quality category, in Grodno Oblast--88 percent and in Minsk and Vitebsk oblasts--85

percent. The kolkhozes and sovkhozes here have also learned to procure good haylage. Thus, in Gomel and Minsk oblasts 84 percent of the haylage has been evaluated to be first class.

Not everyone by far can boast of such results. For example, the picture is very varied in Kazakhstan. Whereas in Aktyubinsk, Karaganda. Kustanay and Tselinograd oblasts 87-97 percent of the hay procured in July was first-class, in Kzyl-Orda and Kokchetav oblasts only 46 and 38 percent of the hay respectively fell into this category. But after all, Kokchetav farmers are the initiators of republic competition for feed procurement. What kind of example can they give to village workers of other oblasts if almost half of the hay stockpiled in the oblast is worthless?

At first glance hay mowing is proceeding adequately in the enterprises of Azerbaijan--the plan for the procurement of hay has been fulfilled by 50 percent, for haylage--by 85 percent, and 8.56 quintals of feed units have been stockpiled per standard head of cattle--for this indicator only the enterprises of Lithuania surpass the Transcaucasian republic. But in the quest for feed quantity a loss of quality has been tolerated here. Only slightly more than half of the haylage stockpiled in trenches belongs to first and second class, and a considerable portion turned out to be totally unacceptable. Feed quality remains low from year to year in the enterprises of Armenia. Today in a number of rayons poor haylage is also being procured. Sometimes that which is included in accounts as haylage is actually silage in that the green mass that is put into trenches has a high moisture level. In the enterprises of the Turkmen SSR it is generally difficult to determine the quality of the feed that is being procured--a large part of it is not sent for analysis.

In the RSFSR there have been many cases of procurement of feeds with a low nutritive value or even of deteriorating feeds. Over one-third of the procured hay turned out to be of poor quality in a number of rayons of Maritime Kray, and in some rayons of Altay Kray, such as Troitskiy, Tyumentsevskiy and Shelabolikhinskiy, all of the stockpiled haylage has been deemed inadequate. In Tuva Autonomous Republic the quality of only 32 percent of procured hay was evaluated and one-third of this amount turned out to be of poor quality. In Kurgan Oblast hay quality is worse than last year--one fourth of the hay has been refused.

The procurement of low-quality feeds is the result, as a rule, of gross violations of technology. We are speaking first and foremost about the mowing schedule. In many places as previously grasses have not been harvested on schedule--the first mowing is behind schedule and no one is hurrying to carry out the second. Meanwhile even in the central and northwestern rayons clover has bloomed and cereals have headed. There should not be a single day of delay with the second harvest. The consequences of even the slightest delays in the mowing of grasses are evident from the following example. For the feeding of dairy cattle using timothy grass harvested during the early blooming phase it was necessary to include a daily ration of almost 500 grams of concentrates in order to make up for the underproduction of nutrients as compared to the procurement of feeds from spike crops.

No less damaging is the violation of rules for the procurement of hay and for the stockpiling of haylage, as is the disregard for progressive technological methods. What type of feed quality can the directors of Yakutsk enterprises, for example, speak of when most hay is dried in swathes here and stored in small stacks? It is no accident that a significant portion of the feed turns out to be of poor quality already by the start of the wintering period, and up to one-fifth of the feed found on the outside and on top of the stacks must simply be discarded. In Ivanovo Oblast workers of people's control discovered instances in which long-condemned silage was stockpiled, resulting in great losses from waste in mounds.

Progressive technology is being introduced persistently in Latvia and Estonia, where a significant portion of the hay is harvested with the aid of press-collectors and final drying is implemented by means of active ventilation. Sometimes enterprises are reluctant to utilize this technology, feeling that the moist mass may rot in bales. An answer to the problem is hinted at by the experience of Leningrad Oblast. There they organized the pressing of excessively-moist hay in bales of a reduced size which were thoroughly dried by means of active ventilation. In comparison with field drying this method almost doubled the output of first- and second-class hay and decreased the amount of poor hay by a factor of 2.5. The mechanized detachment of Detskoselskiy Sovkhoz has already procured 3,800 tons of hay by utilizing this technology, thereby winning first place in competition among feed procurers.

The harvesting of annual grasses has also begun. Many enterprises have decided to store them for grain forage purposes. In Yekaterinoslavskiy Sovkhoz of Omsk Oblast a mixture of oats, barley and peas has been sown. Harvesting occurs at the stage of milky-wax ripeness of grain and an excellent feed is produced, containing 0.34 feed units, 41 grams of protein and 34 milligrams of carotene per kilogram. In the enterprise a decision has been made to stockpile up to 8,000 tons of such monofeed. Its procurement is being expanded in Maritime Kray and in Lipetsk, Kalinin, Arkhangelsk and a number of other oblasts of the RSFSR. In the enterprises of the Ukraine the progressive technology has found a permanent home.

Kostroma Situation

Moscow IZVESTIYA in Russian 25 Jul 86 p 2

[Article by M. Ovcharov, IZVESTIYA correspondent: "In Expectation of...Losses"]

[Text] Kostroma Oblast - In Kostroma I saw empty offices and underpopulated factory and plant shops. I was told that everyone was participating in haying. But alas the pace of feed procurement remained low during the second week of July.

As of 21 July in the oblast natural and seeded grasses were mowed on 209,200 hectares, or on 59 percent of the area. As of this date 129,100 tons of hay, or 34 percent of the quota, were procured. Six quintals per standard head of cattle have been stored. This is not enough. What is the problem?

People say that it is the rains. But this is the usual weather in these places and we should not expect anything better either today or tomorrow. The problem is that workers here began harvesting grasses behind schedule and in a fairly disorganized manner, and they missed the days of good weather for carrying these operations out. This had a negative effect on the entire course of harvesting.

In Novyy Put Kolkhoz of Kostromskiy Rayon the AVM [Analog computer] was turned off in the fall without clearly examining the equipment. When grass harvesting began the furnace on the unit suddenly broke down, and this delayed the preparation of grass meal by a week. In Makaryevskiy, Oktyabrskiy and Ponazyrevskiy rayons a third of the tractor rakes, hay harvesters and silage-harvesting combines were not repaired, which sharply decreased the pace of harvesting and naturally--the quality of feeds.

I will mention another very important reason for delays in haying--conceptual inertia. From the mouths of specialists and directors of enterprises we hear that yes, we are behind schedule, yes we are late, but we wanted the grass to grow taller. Is it possible that there is a basis for such thought?

"Absolutely none," says the senior agronomist-technologist of the oblast agroindustrial association, S. Perevozchikov. "This is an outmoded, old-fashioned approach to the matter. We know that if we wait until the grass grows taller it will be possible to collect more green mass but to loose nutritive value."

Here's a typical situation. The hay gets wet in the puddles of the Rossiya Kolkhoz in Parfenevskyy Rayon. What should be done here? It would seem that it's being decided correctly at the kolkhoz: compact the hay, then dry it out. But, one might ask, when? "Only under the sun", explains Mechanic V. Maksumchuk. "However this work is almost senseless. Today the hay was dried under the sun, at noon it rained again, so it had to be dried out anew..." And this is occuring when there are sheds and ventilators available in the kolkhoz, according to the chief farm engineer, L. Sirotin. But they can't be used. Why weren't they prepared? The chief engineer shocked us with his reply: "In recent years we somehow managed to get along without sheds...So maybe we'll manage now."

This is the first lesson of waiting--28 percent of feed from the new harvest, the quality of which was checked recently, was of poor quality. There is no doubt that the rains had an affect on this. But what is being done to counteract the consequences of the rainfall? The oblast has only one-third of the hay trailers with active ventilation it needs, and even those that are available are often utilized poorly.

We are speaking of the usual lack of organization, lack of cohesiveness, lack of direction and finally, lack of economy, which result in great losses in the feed harvest and in its quality. In general this is what is found on the surface. But what if we dig deeper?

When steel is being refined in an open-hearth furnace, metal samples are taken more than once. This is done not for the sake of idle curiosity but in order to effectively intervene in the technological process if necessary. Specialists say that we must approach this complicated, subtle, weather-related and extremely unstable process of feed production in a similar manner.

We need express-analysis to make it possible to effectively evaluate not only the prepared feed but also the quality of the raw material in the field. This will enable us to make the necessary changes in the technological process on the spot.

"Well, the oblast has not yet come to this," says S. Perevozchikov. "There is a shortage of the necessary equipment. According to our data there are only 87 express laboratories in 318 kolkhozes and sovkhozes."

According to official data, Kostromskiy Rayon is first in the organization of express-laboratories in enterprises, but is it in actual fact?

We arrive in Novyy Put Kolkhoz in this rayon, where an express-laboratory is said to be in operation--the equipment for it was purchased a year ago. But it is not in operation.

We saw what the consequences of an indifferent attitude toward quality are on the outskirts of the village where the kolkhoz had set up its AVM. O. Nedorezova, director of the biochemical department of the Kostroma Oblast Veterinary Laboratory stated, as she carefully rubbed a handful of grass meal in the palm of her hand:

"Your oven clearly overheats. Can't you see that?"

"Who knows?" shrugged operator Yu. Viktorov. "If we had express analysis then things would be different."

Here is another problem. After the reorganization of the APK [Agro-Industrial Complex] management organs, sovkhozes and kolkhozes began to receive more, not less, paperwork. In June, when haying was in full swing, many agronomists in enterprises were forced to compose "measures on the intensification of production of coarse and succulent feeds." Here there was no time for any type of "ongoing" haying operation.

The unsatisfactory course of feed procurement in Kostroma Oblast recently was the topic of discussion at a meeting of the Presidium of the RSFSR Council of Ministers, where it was noted that Soviet organs and the oblast agroprom [agro-industrial committee] were not able to overcome the habit of delaying the mowing of grasses to a later time.

It must be said that the executive committee of the oblast soviet of people's deputies efficiently passed its own lengthy resolution in an effort to correct the situation. But this decision is being carried out poorly. A task was established for enterprises--to mow grasses on no less than 5-6 percent of total area daily; in actual fact only 2 percent is mowed daily. Despite the

decisions of the oblast executive committee, systematic controls over feed quality still have not been organized. Another important requirement is also not being fulfilled--to establish a work regimen during haying that begins at 4 o'clock in the morning and lasts until 10 o'clock in the evening. At 8 p.m., when the sun was still shining brightly and the weather was excellent, I drove through the fields with the council chairman of the Nerekhtskoye RAPO, A. Svinarchuk, in search of brigades of feed procurers. This was in vain.

Of course there are objective reasons for oblast lags in haying. For example, the complaints of Kostroma farmers about the low quality of the KSK-100 combine are fully justified.

"It is totally nerve-wracking to deal with this machine. It will work one day, then break down for two," says the senior engineer of Pyatiletka Kolkhoz, Kostromskiy Rayon, Yu. Aleksandrov. "We also have no dependable, convenient and efficient equipment for pressing and turning hay."

But I feel that the main problem has to do with something else, with the poor organization of feed procurement operations. We cannot tolerate a repetition of last year, when cattle was kept on semi-starvation rations during the winter.

Chuvash Lag

Moscow SOVETSKAYA ROSSIYA in Russian 6 Jul 86 p 1

[Article by V. Ovcharov, Chuvash ASSR: "First It's Rainfall, Then It's Weddings: In the Chuvash ASSR Haying Operations Are Being Extended Unjustifiably"]

[Text] Last year and even in the year before last SOVETSKAYA ROSSIYA wrote about the delays in harvesting operations in the Chuvash ASSR and about those expenses and feed losses which arise unavoidably under such circumstances. However, the current situation attests to the fact that not everyone by far has drawn a lesson from the past. The inertia of the quest for the celebrated "gross output" has turned out to be stronger than common sense.

Already during the first few days of July it was clear that due to the dry weather in May, without any rainfall, a large mass of grass would not be obtained during the first mowing operation. Weather conditions fully mimiced those of previous years and consequently, by taking them into consideration it was essential to demonstrate concern for making the second mowing operation yield larger results. It seemed that this truism of peasant strategy was clear to everyone. Moreover, it seems that measures were taken to avoid losing valuable time. I remember well the words of the chairman of the Chuvash ASSR Agroindustrial Committee, V. A. Agafonov, to the RAPO directors participating in the republic seminar.

"We cannot waste a single day. When you get home," he requested, "begin haying immediately. It is no longer necessary to wait for tall grass. We .pa must harvest what we have before the rains come. Only then should we worry

about correcting the situation involving the second harvest."

Everything--the sad experience of the past, economic accounts and finally, orders from "above"--demanded immediate action. This was also demanded by scientific recommendations, which confirmed that in order to produce hay with the highest protein content grasses must be mowed during the period of bud formation because every day wasted would result in unavoidable losses in the quality of the valuable feed. Nevertheless, during the first half of June quiet reigned in the fields and on the meadows of the autonomous republic's enterprises. Why?

Today many directors of RAPO's, kolkhozes and sovkhozes are trying to justify themselves by trying to produce as much as possible during the first mowing. They say that it was for this purpose that economic independence was granted, that restructuring is taking place today. The right words are being said, but they are not being supported by deeds.

Here's corroboration. The last Sunday of June was warm and sunny. So a republic voskresnik [Sunday work day] for feed procurement was declared. But the Seyatel Kolkhoz of Morgaushskyy Rayon decided to take advantage of the lovely day for ... a wedding. Thus the kolkhoz machine operators came out not for haying, but for a party.

"The rains interfered with haying," says the secretary of the kolkhoz party committee, V. M. Rastorguyev, motioning with his hands. "There were enough other things to do anyway. Now that we have completed the cultivation of beets and potatoes we can begin harvesting grasses."

The rains interfered! But why didn't mowing take place during the first half of June when there was no rain? Why didn't farmers listen to the recommendations made at republic seminars conducted in the rayon? Why were the recommendations of science ignored? Finally, after the demonstration by seminar participants, why wasn't full use made of the recently-built hay-storage facility with active ventilation capable of holding 270 tons? The directors of the Seyatel did not have a convincing answer for any of these questions.

This is not the only place where this was true. As operations information shows, a good half of Chuvash rayons were not able to utilize this storage facility. And it is this circumstance that explains, first and foremost, the lags of the autonomous republic in feed procurement. Thus, as of 2 July hay procurement had fulfilled only 11.2 percent of the quota, and haylage procurement--11.8 percent. In some rayons, particularly Alikovskiy, Krasnochetayskiy, Urmarskiy and Mariinsko-Posadskiy, the situation is even worse.

Then perhaps it is still too early to turn away from directives from above regarding when to sow and when to mow? No, of course it is not too early. This is convincingly attested to by the practical experience of the best kolkhozes and sovkhozes. For example, excellent hay has been procured with the aid of active ventilation equipment in Gigant Sovkhoz of the same Morgaushskiy Rayon. In Kolkhoz imeni Zhdanov of Batyrevskiy Rayon farmers did

not wait for the rains. Having organized haying operations in a skilful manner, they stockpiled over half of the hay indicated in the plan.

No, it was not independence that was the reason that past experience, wise advice and present-day requirements did not spare the directors of many enterprises in the Chuvash ASSR from repeating mistakes in feed procurement. I feel that there is another reason. The problem is that the independence granted to managers was not accompanied by increased demandingness and that the necessity of taking personal responsibility in decision-making was forgotten.

Apropos of this, a word about work quality. We can hardly consider it normal that hay, as well as other feeds, are sent to the republic station of chemicalization for protein analysis in the fall, when nothing can be corrected any longer. We need information about the nutritive value of feeds now, during the procurement process, in order to achieve dependable controls in deed and not just in words.

Chelyabinsk Progress Modest

Moscow PRAVDA in Russian 20 Jul 86 p 3

[Article by A. Terekhin, CHELYABINSKIY RABOCHIY correspondent, and V. Cherepanov, PRAVDA correspondent: "Was It the Rains That Interfered?: Harvest 86--Feed Procurement Continues"]

[Text] Chelyabinsk Oblast - The report on the course of the "green harvest" in Chelyabinsk Oblast as of the beginning of the second 10-day period of July looked modest--only 30 percent of the quota of hay had been procured and the figure was even smaller for grass meal and haylage. Moreover, in Ashinskiy, Katayev-Ivanovskiy and Kusinskiy rayons haying operations have hardly begun. And this is at a time when harvesting operations are usually at their height in the Southern Urals. What is holding them up now?

"I see no cause for alarm," boldly assures the first deputy chairman of the oblast agroprom, A. Vasilizhenko. "Haying is proceeding as it is supposed to. Today 'gross output' is not as important as forage quality."

However, we became familiar with the course of haying operations not only through the report, and for this reason we were not able to share his optimism. Finally A. Vasilizhenko admitted:

"We are lagging behind last year's pace to some degree. Rainfall and cold weather interfered. But now we are trying to make up for omissions."

"To some degree" actually means about 200,000 quintals of hay. Now we will have to take that same "gross yield" from among overgrown grasses, and as we know their nutritive value is significantly less.

Meanwhile, the goal related to the intensification of the livestock raising branch is not a simple one--by the end of the five-year plan each cow is to produce no fewer than 3,000 kilograms of milk. In other words, we must add another 650 kilograms to last year's milking output, which has been accepted as the reference point. The results of the first 6 months equal "plus" 119 kilograms. It turns out that the goal is totally realistic, and that the path toward this goal, as experience confirms, begins first and foremost with well-organized technology for cultivating and procuring feeds.

Thus the oscillation and sluggishness being demonstrated by many kolkhozes and sovkhozes are all the more unforgivable. No amount of laying blame on bad and capricious Ural weather can serve as justification. On the contrary, it is under such conditions that the true attitude of people toward their work and their ability to manage are revealed.

For example, in Kanashevskiy Sovkhoz no one looked at the sky and no one expatiated upon the subject of whether to begin mowing or not. Workers began their work energetically and in a short period of time they stacked up over 600 tons of first-class hay. Meanwhile in Alabugskiy and Sugoyakskiy rayons at this time workers just waved their arms, saying that it's raining again. They did not procure even a ton of feed. This has occurred within the same rayon, in neighboring enterprises.

How can we avoid losses of hay during rainy weather and preserve it better? According to a decision by the CPSU oblast committee and the oblast executive committee, as long ago as during the beginning of last year's harvesting operation it was planned to build 160 storage sheds. Under their roofs it is possible not only to store hay but also to dry it with the aid of active ventilation equipment.

It would seem that everything was taken into consideration and foreseen--capital for metal and cement was found and leaders-builders were assigned to each enterprise. The only thing that was forgotten was the implementation of controls and of a requirement that directors of the oblast agroprom fulfill the decision that had been made in a timely manner. And what happened? Last year only 60 storage sheds were built, and 100 turned out to be unready for this year's mowing as well.

The important requirement of developing an express-laboratory for the efficient determination of feed quality within each enterprise has also remained essentially on paper. It is true that according to the data of the oblast agroprom there should be 228 of these labs in operation. It would seem that this number would be adequate to encompass all enterprises. But no matter how hard our specialists tried, they could find only 125 laboratories. What happened to the rest? They were simply not equipped.

As a result, many mechanized links are working in limbo without knowing either the nutrient content of grasses or the quality of the stacked hay. Several

weeks will pass before the oblast chemicalization station determines which class a particular forage belongs to. In such a situation, how can the connection be made between the wages of feed procurers and the end results? What kind of struggle for quality can we speak of? And evidently it is no accident that only four oblast rayons presented samples in a timely manner and received results of hay analyses efficiently.

8228
CSO: 1824/416

UKRAINIAN FEED PROCUREMENT PROGRESS ANALYZED

Republic Progress Report

Kiev SILSKI VISTI in Ukrainian 4 Jul 86 p 1

[Unattributed article: "Winter Procurement--From All Feed Storages"; capitalized passages published in boldface]

[Text] At the farms of the (Ukrainian) republic, first hay cutting is being completed at the fields of perennual grasses and natural feed fields.

According to an announcement by the UkSSR Central Statistical Administration, by 30 June grasses were gathered from 5.2 million hectares, representing 86 percent of the planned output. At collective and state farms, 4.1 million tons of hay were procured, constituting 410,000 tons more than last year. Also 4.9 million tons of haylage were placed at feed storages, and 350,000 tons of dehydrated feed were produced.

At most of the farms of the Poltava, Khmelnitskiy, Donetsk, Dnepropetrovsk, Kirovograd, Odessa, and Volyn Oblasts mowing season was completed with the first cutting.

In the Donetsk area green harvesting was received with the appropriate sense of responsibility. At this oblast six rayons completed their plan for haylage procurement. The greatest amount of hay procured for the winter was at the Velykonovosilkivskiy, Maryinskiy, Telmanivskiy, and Volnovaskiy rayons. In comparison with the planned yield for the year, 1.3 to 1.7 fold more hay harvest was taken from the first mowing at the collective farms imeni Chervona Armiya, imeni Shevchenko, imeni Karl Marx, and at the Maksymivskiy state farm in the Maryinskiy Rayon. At the Kostyantynivskiy Rayon's collective farms Zapovity Illicha, imeni 27 CPSU Congress, and Novyy Shlyakh, feed procurers also surpassed the planned output for hay and haylage. At these farms hay drying is being completed by means of active aeration; everything is performed according to first class product requirements.

At the Donetsk Oblast, in total, out of the planned output, 78 percent of hay and 90 percent of haylage was procured.

Procurement of hay is being organized also at the Khmelnitskiy, Volyn, and Dnepropetrovsk Oblasts, while haylage is procured at the Kirorograd, Crimean, Lvov, and the Transcarpathian Oblasts. With no justification, the following are behind in the cutting of grasses: Transcarpathian, Chernigor, and Ternopol Oblasts, where on a significant part of the lands during the first cutting, seeded and natural grasses have not yet been collected.

At many collective and state farms haylage procurement has been taken up with enthusiasm, but stocking of hay is progressing slowly. At the Vinnitsa Oblast hay procurement was four times smaller than that of haylage, and at Kiev Oblast 2.8 times, at Ternopol 2.8 times, and Poltava 2.1 times smaller.

IN KHARKOV OBLAST, CARE IS NOT TAKEN TO PROVIDE FOR NUTRITIOUSNESS OF THE FEED. At the Collective Farm imeni Karl Marx (A. Ya. Serhiyenko, head of the administration) in Vovchanskiy Rayon, for almost 3 weeks, hay mass has been placed into trenches, and is poorly stacked, so that the temperature of the feed has increased to 60 degrees, and its average nutritiousness has decreased by a third. This farm has 499 tons of such "feed," while only 53 tons have been placed in stacks. The Vovchanskiy agro-chemical laboratory only notes the actual nutritiousness of the feed, but does not perform its chief duty, which is to have an opertional influence in making a correct choice and strictly adhering to the method for feed procurement. Other facts point to the unsatisfactory performance of the laboratory: On 24 June the quality of hay was determined only in eight out of 25 farms, and for only six farms was the quality of grass flour determined. The hay procured at the following collective farms was of low quality: imeni Kuybushev, imeni Telman, and imeni Petrovsky. Work remuneration was not made dependent on quality indicators of the product. A fifth of the haylage procured in that rayon was classified as quality below classification.

AT NUMEROUS FARMS OF THE KHARKOV OBLAST, PROGRESSIVE METHODS OF FEED PROCUREMENT ARE BEING IGNORED. Thus, by 30 June, 12 percent of the general volume of hay was achieved by active aeration. No tons of hay were procured by means of this method at the Vovchanskiy and Shevchenko Rayons; only 1 to 7 percent of this feed was procured at the Chuhuyivkiy, Sakhnovshchynskiy, Pervomaiskiy, Krasnokut, Barvinkivskiy, Valkivskiy, Kupanskiy, Hotvaldivskiy, and Zapylivskiy Rayons.

At many farms of the republic, opportunities for increasing feed production from meliorated lands are not being fully utilized. By the middle of June, during irrigation, every eighth hectare of feed crops had not yet received moisture. From 11,000 to 18,000 hectares of feed land had not been irrigated at the Voroshiylovgrad and Dnepropetrovsk Oblasts. According to the automated information-directing system of operational planning, at the Sakskiy Rayon IN THE CRIMEAN OBLAST, and at the Vyshhorod Rayon in KIEV OBLAST, only half of the perennual grasses were irrigated; at the Mykhailivskiy Rayon OF THE ZAPOROZHZHYE OBLAST corn grown for feed was being watered only on 11 percent of the assigned areas; at the Dnepropetrovsk, Apostolivskiy, and Mahdalynivskiy rayons OF THE DNEPROPETROVSK OBLAST irrigation was performed at fewer than half of the sown areas.

Watering was not satisfactorily organized in the areas adjacent to the irrigation system in KHARKOV AND SUMY OBLASTS, where only 20-38 percent of watering was performed; in Rovno and Poltava Oblasts natural feed grasslands are being watered on one-third of the areas.

In these oblasts, farm and RAPO specialists have let the care of the feed crops on the irrigated lands be unorganized. HOWEVER, THEIR BASIC ASSIGNMENT TODAY IS TO ORGANIZE ROUND-THE-CLOCK IRRIGATION UNITS EVERYWHERE.

It is absolutely necessary to supplement stockpiling of feed from the repeated sowing. However, providing for such a reserve was left outside the attention of many specialists. Following the winter feed crops and the thinned-out perennual grasses, the areas were not prepared in time for sowing second crops, at the LVOV, ZAPOROZHYE, POLTAVA, IVANO-FRANKOVSK, and VOROSHILOVGRAD OBLASTS; thus repeated sowing of crops was done only on areas which took up an insignificant part of the freed land. In the areas where moisture supply is provided, and which are situated in a complex together with grain crops grinding, surface soil tilling should be performed, and catch feed crops should be sown.

Plan fulfillment for hay cutting and feed procurement at collective and state farms, interfarm, and other state enterprises, it represented by the following indicators, as of 30 June (expresed in terms of percent of planned production):

Oblasts	Natural Grasses and Sowed Grasses Cut by Means of First Mowing for: Hay, Haylage, Silos, Green Feed and Grass Meal	Procurement of		
		Hay	Haylage	Grass Meal and Other Artificially Dehydrated Feed
Vinnitsa	92	33	50	25
Volyn	93	71	41	41
Voroshilovgrad	88	60	20	21
Dnipropetrovsk	93	68	29	28
Donetsk	100	78	90	35
Zhitomir	95	56	38	26
Transcarpathian	52	35	61	72
Zaporozhye	84	77	44	23
Ivano-Frankovsk	70	47	50	51
Kiev	78	31	49	33
Kirovograd	96	43	33	38
Crimean	82	68	109	44
Lvov	77	52	95	58
Nykolayev	82	54	63	20
Odessa	98	46	34	20
Poltava	107	67	68	51
Rovno	93	62	52	39
Sumy	81	42	23	27
Ternopōl	66	46	50	14
Kharkov	95	49	22	20
Kherson	81	63	64	23
Khmelnitskyiy	100	67	64	35
Cherkassy	86	43	26	24
Chernovtsy	77	45	46	45
Chernigovtsy	64	45	35	18

Technological Deficiencies

Kiev SILSKI VISTI in Ukrainian 3 Jul 86 p 1

[Editorial: "Feed for the Winter: Quantity and Quality"]

[Text] This summer, farms of our republic must procure approximately 15 quintals of feed-units of both coarse and succulent feed per head of cattle. Important sources for stockpiling them are the sown areas of perennual grasses and natural hay grasslands.

By organizing the mowing season well, many collective and state farms and interfarm enterprises gathered the first harvest of fodder quickly and without any losses. Basically, it was utilized for procuring hay, which in some instances is now available at 1 ton per cow. A significant portion of feed completed its drying by means of active aeration; due to this, the nutrient content of the quality of feed improved considerably. Farms of the Zaporozhye and Donetsk Oblast completed their plan for hay procurement by over 70 percent, while farms of the Dnepropetrovsk, Volyn, and Khmelnitskiy Oblasts, by two-thirds. Important, too, is the fact that many of the feed farms are not stockpiling it for a lasting storage directly in the open without any cover, as used to be done earlier. Now it is being stored only in special shelters, with a cover, thus allowing for elimination of feed losses in winter. Quite a few such shelters are now in the Odessa, Dneropetrovsk, and other oblasts. At many collective and state farms, all hay is first class.

At the same time, the first stage of green harvesting has shown that at many farms serious mistakes were allowed during the organization of hay cutting. At many rayons they are postponing deadlines for the gathering of grasses. Noticeable discrepancies between technological operations are allowed, and this leads to a sharp decline in the quality of the procured forage. Such situations are not rare when the processing methods for feed loading [zakladannia] are simplified. Hay-gathering machines are not well used, or are not used at all. All this may be explained by the fact that not all the farms have proved ready for such a responsible campaign. For example, at the Andrushivskiy Rayon, in the Zhitomir Oblast, a significant portion of hay was planned to be procured by the method of active aeration. Special warehouses were built for this. However, by the beginning of the hay-cutting season, ventilators were put in only at one-third of the warehouses, while for the rest they were still searching for the ventilators. None of the farms had a moisture meter. Thus specialists had to determine moisture content in the slightly wilted fodder by relying only on visual inspection. Under such conditions can one expect feed producers to adhere to the processing method? Some of the farm managers had refused to perform active aeration, claiming that the weather was stable. They should have been reminded of the fact that the new processing method is, first of all, the correct one for getting high nutrient content feed, and is not just a method to be applied during bad weather. However, specialists of the rayon and oblast links of the agro-industrial complex have not always demonstrated the necessary responsible attitude and principles.

As a result of the above factors, at the Vinnitsa, Transcarpathian, and Kiev Oblasts, the hay procurement plan was carried out only by a third, while at Chernigor Oblast by less than 40 percent.

At the southern part of the republic, second cutting grasses are already reaching maturity and are being gathered at some farms. Thus everything needs to be done in order to eliminate narrow spaces, as a result of which feed was not gathered from the first cutting. The widest application of progressive processing methods for hay procurement should be done as soon as possible, and the hay's nutrient content should be increased. The goal for feed procurers of each farm is to save for the winter at least 1 ton of that feed per cow. This can be achieved by all, as experience of the previous years has shown.

Many of the oblasts are intensively storing up haylage from the first cutting. The plan for this procurement has been fulfilled by 90 percent at Crimean Oblast collective and state farms, and by 80 percent at Lvov Oblast farms. However at the Kharkov and Cherkassy Oblasts, storing up of this feed represents only 20 percent of the plan. There are serious misapplications of the plan for haylage procurement: fodder with an elevated moisture content is being placed in storage, or the storage is being filled slowly. As a result, the feed becomes overheated and loses its nutrient quality. Those guilty of such mishandling should be made to answer for it; at each rayon and farm there should be such an atmosphere which would not allow poor work to take place and should demand an operational elimination of defects. The State Collective Farm Directorate and the Administration of Collective Farms should make feed procurement brigade workers' wages directly dependent on the quality of the end product; a collective contract approach should also be practiced.

Grass meal is an important component of mixed feed. It is being vigorously collected at the farms of Lvov, Poltava, Ivano-Frankovsk and other oblasts. However, Ternopol and Chernigo Oblasts have fulfilled the plan only at 15 percent, although productivity may be raised.

Harvest time has begun. All opportunities should be utilized for holding the necessary number of post-harvest seeding of feed crops at each farm. Preference should be given to high-protein multicomponent mixtures, and cross-leafed plants [khrestotsvit] should be introduced to its components. High quality future harvests depend upon the accurate care of perennual and natural grasses immediately after harvesting.

12,868/9599
CSO: 1811/33

DELAY IN IMPLEMENTING NEW POULTRY RAISING TECHNOLOGY, RESPONSE

Problems in Application

Moscow SELSKAYA ZHIZN in Russian 6 May 86 p 2

[Article by L. Kartseva, special correspondent of SELSKAYA ZHIZN: "Unexpected Turn"]

[Text] Whoever happens to see how meat chicks are unloaded from buildings to be sent to the consumer cannot fail to note: This is heavy labor! Try to catch several thousand broilers with your hands and carry them! Technological requirements in poultry breeding are strict and the building must be cleared of the raised young stock in 1 day. The factory director organizes rush work each time and takes workers from all sections for the unloading of poultry.

I am talking about poultry houses, where broilers are kept on the floor. More than one-half of the meat chicks in the country are raised on such premises. This is traditional technology and under it chicks grow strong. However, there are also plenty of shortcomings here. Manually placing chicks in poultry houses and catching them, to put it mildly, are not yet all the inconveniences. Poultry houses need a great deal of litter and any litter, be it straw or sawdust, is quite expensive and scarce.

There is another broiler raising technology--in cages. Most likely, the future belongs to it. More poultry can be kept in cages, which means that the output of meat per square meter of useful area can be increased. Litter is not needed here. However, even this technology has its minuses. Fattening poultry becomes heavier every day and gets inflamed sores from twigs. This spoils the commodity appearance of carcasses. With cage keeping it is again difficult to mechanize the loading and unloading of poultry. The consumption of metal--and valuable metal at that--for the manufacture of cages is considerable.

And what if broilers are placed on a mesh floor, the cage taking up the entire poultry house? Litter is not needed and conveyers for the unloading of poultry can be installed. The density of placement of chicks will increase as compared with floor keeping and metal consumption will decrease as compared with cage keeping. Associates at the All-Union Scientific Research and Technological Institute of Poultry Breeding (VNITIP) proposed such technology

of raising broilers on mesh floors. They did not merely propose it: Having received the go-ahead from the USSR Administration of the Poultry Raising Industry, they tested it at the Oktyabrsk Broiler Factory and on the Aleksandrovskiy Poultry Raising Sovkhoz in Omsk Oblast. In 1978 this work culminated in a certificate of invention. Methodological recommendations approved by the council of the USSR Poultry Raising Industry were soon prepared.

At the institute I was acquainted with the protocol of state acceptance tests of a set of new equipment. At one of the poultry factories in Minsk Oblast the new technology reduced labor expenditures on the production of 1 quintal of weight gain from 2.79 to 1.45 man-hours, or by a factor of 1.5. And this in poultry raising--a sector, which firmly embarked on an industrial path, where for a long time a rise in any production indicators was calculated in terms of a fraction of a percent! The output of meat per square meter of useful floor area increased from 21.66 to 35.82 kg per cycle. Labor expenditures on the placement and unloading of poultry were reduced by one-half. It was recommended that the K-P-5-2-01 set be put into production.

The new technology also proved its value in large-scale production. The Omsk Poultry Raising Industry Trust, having become convinced of its advantages, built the Sibirskaya Factory of an annual capacity of 10.6 million broilers with mesh floors.

Thus, the new technology was announced 8 years ago. It underwent a long-term production check. During those years it certainly gained position at poultry factories and recognition among poultry breeders. Alas! VNITIP scientists are sounding the alarm: Help us to introduce the mesh. As before, 60 percent of the broilers are raised on the floor, tons and tons of scarce litter are lost, and the unloading of poultry houses continues to be hellish work!

What is the matter? Why is good technology not widely introduced in poultry raising? I addressed this question to I. A. Bakhtin, chief of the USSR Administration of the Poultry Raising Industry. Ivan Aleksandrovich is one of the developers of the new technology and, of course, will be glad at the opportunity of advancing its introduction.

However, the conversation took on an unexpected turn. Having called the idea of the mesh floor--"cages throughout the poultry house"--almost brilliant, nevertheless, the director of the Administration of the Poultry Raising Industry gradually switched the conversation to the following: There should be no haste with the introduction of the new technology. It "will be introduced by itself" as soon as it demonstrates its advantages. Furthermore, metal mesh stronger than that now used in poultry raising is used for mesh floors, but our industry does not yet manufacture it. Ivan Aleksandrovich Bakhtin outlined the difficulties with the reconstruction of poultry houses. Consider that the poultry house will be put out of operation for 1 year, but the director of the poultry factory must fulfill the plan. Add the problem with building materials here--well, who likes such trouble!

"Essentially, our poultry breeders are very conservative," the chief of the Administration of the Poultry Raising Industry confidentially shared his

thoughts. "If they work according to some technology, try to force them to adopt another technology. No wonder there are no orders for the new equipment."

In fact, there are few orders, but not at all because poultry breeders are conservative. The management of the Poultry Raising Administration lets the new technology take its course and does not popularize it. Many enterprises are simply not aware of it. Poultry breeders, who have become acquainted with broiler raising on mesh floors, have the most flattering opinion of it.

"Mesh is needed very badly! This is the best technology for poultry houses of a pavilion structure," N. V. Belyasov, chief of the Belorussian Administration of the Poultry Raising Industry, is confident. "Imagine, in a poultry house with mesh floors we now obtain more than 27 grams of weight gain in 24 hours, whereas with floor keeping, 23.3. We have increased the output of meat per square meter of floor from 110 to 153 kg, not to mention the fact that poultry workers, who work in buildings with mesh floors, do not have to drag poultry during unloading from the premises. Does the reconstruction involve much trouble? We can reequip the building in 2 months."

A. N. Koshelkin, director of the Sibirskaya Poultry Factory, is even more categorical:

"We have planned the factory on the basis of the floor keeping of broilers. When we heard about the 'mesh,' we changed the plan and installed mesh floors immediately in all poultry houses. We are not sorry."

And how do matters stand with the production of new equipment?

"Our scientific and technical council recommended that it be put into production," I was told at the Ministry of Machine Building for Animal Husbandry and Fodder Production. "We also expressed this point of view at the joint technical council. We are ready to manufacture at least 1,000 sets. We serially produce all the initial mechanisms and articles in tens of thousands and even millions. There is nothing formidable here--hoppers, feed distributors, drinking bowls, mechanisms for the removal of excrements, electric brooder installations, and simple auxiliary equipment have long been known to poultry breeders. Only we do not manufacture reticulate canvas for floors."

The plants of the Ministry of Ferrous Metallurgy supply the mesh necessary for the production of poultry raising equipment. However, floors need special mesh, but the plants of the Ministry of Ferrous Metallurgy do not produce it. They say that special automatic lines are needed. If there is no mesh, there are no sets of equipment.

However, this is not the main trouble. Automatic lines could have been bought, or domestic machines could have been manufactured at the enterprises of the Ministry of the Electrical Equipment Industry. The Omsk Agricultural Equipment Association could have welded mesh floors for the vast Siberian poultry factory in its shops. There would have been orders for sets of equipment for the new technology. But what turned out? For 1986 the Ministry

of Machine Building for Animal Husbandry and Fodder Production received an order for 15 sets, for 1987, 20 sets, for 1988, 30 sets, for 1989, 40 sets, and for 1990, 50 sets. With what should it turn to financing and planning departments?

After the talk at the Ministry for Machine Building for Animal Husbandry and Fodder Production I attempted to find out how matters stood with the output of mesh for floors at poultry houses. I tore away the specialists of the Ministry of Ferrous Metallurgy and of the Ministry of the Electrical Equipment Industry from work and asked them the same question: Is it possible to organize the production of welded mesh of the necessary parameters for poultry raising? Each time I heard the following answer: This is not a subject for discussion, no one set for us such a task. What is demanded of us?

The new technology, which makes it possible to greatly increase labor productivity, to facilitate the labor of poultry workers, and to increase the production of diet meat on the same areas, has not been introduced at poultry factories for 8 years. A strange situation! On the one hand, there is recognition of this technology by scientists, managers, and specialists--a sectorial standard for the technology of raising broilers on mesh floors has been signed not long ago. On the other, there is an absence of any work on its introduction.

"There is no need to rush," I. A. Bakhtin reassures me. "We will experiment in the country's various zones, bring the new technology up to quality requirements, and then it will be introduced. The authority of the Administration of the Poultry Raising Industry is high and it should be used cautiously."

However, will such a cautious attitude toward the introduction of a new thing not shake the authority of the Administration of the Poultry Raising Industry?

Gosagroprom Position

Moscow SELSKAYA ZHIZN in Russian 13 Jul 86 p 2

[Article by L. Kuznetsov, deputy chairman of the USSR Gosagroprom, under the rubric "Responces and Comments": "Formal Reply"]

> [Text] "Unexpected Turn"--this was the title of the article published in SELSKAYA ZHIZN on May 6. It discussed the unsubstantiated delay in the introduction of the new technology of raising broilers on mesh floors. The editorial staff received the following answer to that article:

The department of the production and processing of livestock products of the USSR Gosagroprom has examined the article "Unexpected Turn" and notes that it raises an important and timely problem of acceleration of the output of equipment for raising broilers on mesh floors. An evaluation of existing methods of raising broilers is given objectively and positive and negative aspects of floor and cage methods of keeping them are noted.

At present the floor technology of raising broilers is widely used in zones, where there is no big shortage of litter material. However, as the volumes of production of broiler meat increase, the shortage of litter material increases, not decreases, which is the reason for the organization of the production of cage batteries and the transfer of many poultry factories to raising chicks in cages. This method made it possible to increase the density of placement of poultry 1.9-fold, as compared with the floor method, and to bring the output of poultry meat per square meter of floor to 250 kg annually.

The article correctly notes that the future belongs to cage technology. Specialists working in the field of broiler production also hold this view. However, in this case the problem of lowering labor intensiveness during the unloading of chicks from cages has not been solved and the measures taken by designers have not produced positive results. Furthermore, in hot climate zones, where during the summer months of the year the air temperature reaches critical values, it is impossible to use cage batteries without reducing the density of poultry placement. Therefore, it is necessary to develop equipment, which would not require the use of litter, would make it possible to mechanize the unloading of broilers from poultry houses, and would not reduce output per unit of area of production premises as compared with the floor method. The new set of equipment, which makes it possible to raise broilers on mesh floors, meets these requirements to a significant extent.

Mesh floors made by the economic method have undergone production tests at enterprises in Omsk, Minsk, Orel, Vologda, and other oblasts, as a result of which positive, as well as negative, aspects of the use of this equipment have been uncovered. After the refinement of many parameters and elimination of design shortcomings the indicated equipment has been recommended for production. Of course, the area of its application is limited to the boundaries of Transcaucasian and Central Asian republics. This explains the small demand for the indicated equipment.

For the purpose of accelerating the organization of the production of new equipment for raising broilers, in 1987 the Administration of the Poultry Raising Industry together with the appropriate subdivisions of the USSR Gosagroprom is organizing the output of sets of the indicated equipment in quantities ensuring the demand for it.

Our Comments

As we see, Gosagroprom's answer, in fact, only repeats the content of the article "Unexpected Turn" and limits the zone of application of the new technology to the country's southern regions. This evokes bewilderment. After all, this technology underwent a check in the nonchernozem zone, central regions, and Siberia, that is, in completely different zones.

With respect to the proposed output of sets of new equipment, as N. G. Kobylkin, deputy chief of the subdivision of overall mechanization of animal husbandry of the USSR Gosagroprom, advised the editorial staff, the Ministry of Machine Building

for Animal Husbandry and Fodder Production does not at all include them in the production plan for 1987, justifying this by the lack of special welded mesh for floors, whose manufacture the Ministry of Machine Building for Animal Husbandry and Fodder Production does not place at its enterprises. I. P. Kotenok, chief of the Main Technical Administration of this ministry, mentions another reason. In his opinion, it lies in the negligible number of orders for new equipment. However, this is not surprising if we take into consideration that the country's poultry raising farms are simply not aware of the new technology and its main advantages, that is, a significant--1.5-fold--increase in labor productivity. After all, the USSR Administration of the Poultry Raising Industry--and this was discussed in the article--did nothing for its introduction.

Publishing this material, the editorial staff hopes that the interested departments will promptly solve the "important and timely" problem, as the answer of the USSR Gosagroprom states.

11439
CSO: 1824/402

LIVESTOCK

UDC 631.151.2:636

ANIMAL HUSBANDRY INTENSIFICATION MEASURES DETAILED

Moscow EKONOMIKA SELSKOGO KHOZYAYSTVA in Russian No 7, Jul 86 pp 11-19

[Article by L. Kuznetsov, deputy chairman of USSR Gosagroprom: "Intensification of Animal Husbandry Is the Most Important Condition for the Solution of the Food Program"]

[Text] Basic Directions for the Economic and Social Development of the USSR for 1986-1990 and for the Period Until the Year 2000 set for the agroindustrial complex the task, on the basis of strengthening the feed base and utilizing the achievements of genetics and selection and new biological methods of a qualitative herd improvement, of increasing the productivity of livestock and poultry significantly and ensuring a stable growth of the production of livestock products. By 1990, as compared with 1985, meat production will have to be increased by almost 4 million tons, or by 23 percent, gross milk yield, to 106 or 110 million tons, or by 10 percent, and egg production, to 80 or 82 billion eggs, or by 3 to 5 billion eggs. The basic increase in output will be ensured through the further intensification of animal husbandry.

The country's natural and climatic conditions, the characteristics of feed production, and the big proportion of coarse and succulent feed in the feed balance make it possible to increase beef production at the most rapid rates in most of the country's regions. At the same time, measures to further develop hog and poultry breeding as early maturing sectors are envisaged.

In order to ensure such rates of increase in beef production, it will be necessary to take a number of measures to improve the organization of the raising and fattening of young stock. The average daily gain in the live weight of fattening cattle must be increased to 700 or 800 grams and at specialized fattening enterprises, to 1 kg. For this it is necessary to shorten the raising and fattening period from 30 to 18 or 20 months and to increase the live delivery weight per head to 400 or 500 kg. This task is difficult, but fully realistic. Right now kolkhozes and sovkhozes deliver for meat a significant amount of young stock of increased weight standards, for which the state pays a purchase price markup. In 1985 meat combines received about 8.7 million head of such young stock of an average live weight of 419 kg. Farms in the Lithuanian SSR delivered young stock of an average live weight of 441 kg, in the Estonian SSR, 455 kg, and in the Latvian SSR, 461 kg.

However, a great deal of young stock of a low live weight is purchased and slaughtered for intrafarm needs. It has been estimated that, as a result of an increase alone in the weight standards of young stock slaughtered for meat, the country can additionally obtain 450,000 to 500,000 tons of high-quality beef.

The basic increase in beef production is to be obtained through the reconstruction and retooling of existing farms and complexes with the introduction of intensive technologies. Kolkhozes and sovkhozes will have to reconstruct tens of thousands of barns for raising and fattening animals. The most extensive introduction of technology with a complete cycle of beef production, under which young stock is raised from the age of 20 days and sold for meat at the age of 16 to 18 months with a live weight of 420 to 500 kg, is envisaged during the current five-year plan. The average daily weight gain during raising and fattening should be 700 to 800 grams. A total of 4.5 million head of calves are to be raised according to such technology. The technology of fattening and increasing the size of young stock from the age of 6 to 7 months, as a rule, at specialized interfarm enterprises established on the basis of cooperation with kolkhozes and sovkhozes has been recommended for some regions. On such farms average daily weight gains in young stock, when its size is being increased, are to be 650 to 700 grams and, when it is being fattened, 800 to 1,000 grams and young stock should be sold for meat at the age of 19 to 20 months with a live weight of 430 to 450 kg. By 1990 up to 3.3 or 3.5 million head will be raised and fattened according to this technology.

For farms engaged in specialized beef cattle raising science has developed and approved a technology according to the "cow-calf" system. According to this technology calves are kept under cows on a pasture until the age of 7 or 8 months. During weaning their weight, as a rule, is 210 to 220 kg. Then the size of young stock is increased and it is fattened intensively until the age of 18 to 20 months. The average live weight at the end of fattening reaches 480 to 500 kg. Of course, in the process of introduction all the recommended technologies will be constantly improved depending on local conditions.

Extensive work will have to be carried out on the transfer of the production of pork, whose share in the meat balance makes up about 33 percent, to advanced technology. The intensive management of pork production envisages an extensive introduction of flow production technology and shop labor organization. Its essence lies in the establishment of specialized premises--shops--for every production group of hogs depending on their physiological state divided into isolated sections and used according to the "vacant-occupied" principle.

Improvement in herd reproduction is one of the basic tasks, which must be accomplished during the next few years. The following task is set: With the same breeding stock to obtain much more young stock than now. For herd reproduction highly productive breeds and types of hogs will be used during pure breeding everywhere. However, an extensive introduction of hybridization, which makes it possible to increase the productivity of hogs by 10 to 12 percent with the same feed expenditures, is the chief thing, to which special attention is drawn. Plans are made to increase the production of hybrid young stock to 57 or 58 million head.

Production From Raw Materials of State Resources, million tons

Products	1980	1985	1990
Whole milk products	25.3	29.8	31-32
Meat	9.1	10.8	11.7-12.2
Butter	1.3	1.5	1.5-1.7

With a balanced feeding of stock and observance of technological and production discipline it is fully possible to increase the annual yield of hoglings per sow to no less than 18 to 20 head, to lower the length of the suckling period to 35 or 42 days, to ensure an average daily weight gain of no less than 400 or 500 grams during raising and fattening, and to sell stock of a live weight of 108 to 110 kg for meat. At the same time, pork production per head available at the beginning of the year should reach 130 kg, feed consumption per quintal of weight gain, 550 to 650 feed units, and labor expenditures, 8 to 9 man-hours.

By 1990 about 70 percent of the total hog population is to be transferred to such raising in the public sector of farms.

Through the introduction of advanced technologies and improvement in selection it is also envisaged to ensure an increase in the production of mutton, wool, and other sheep products.

Poultry breeding is the most technically equipped sector. The basic production of poultry meat and eggs is concentrated at large specialized poultry breeding factories and sovkhozes of the Administration of the Poultry Raising Industry, where, as a rule, industrial technology is used. However, in this sector there are also potentials for a further increase in production on the basis of scientific and technical progress.

Especially extensive work on the transfer of dairy cattle raising to intensive technology will have to be carried out during the current five-year plan. At present milk production according to modern efficient technologies in the public sector does not exceed 25 percent of the total gross milk yield. The task of ensuring by 1990 the entire increase in the gross milk yield through production intensification with a significant rise in the productivity of cows on the basis of a qualitative herd transformation, improvement in the feeding of animals, and introduction of advanced forms of labor organization and wages is set for kolkhozes and sovkhozes. In the Baltic republics and the Moldavian SSR by 1990 plans are made to fully change over to intensive production technologies. The productivity of cows in these republics, as well as in a number of oblasts in the RSFSR, the Ukraine, and Belorussia, is to be increased, as a minimum, to 4,000 kg and, on the average, throughout the country, to 2,700 or 2,750 kg.

The intensification of dairy cattle raising is inseparably connected with the further specialization of farms. At present farms with 400 to 800 places for cattle keep approximately one-third of the dairy cows and farms with more

than 800 places for cattle, about 5 million head. The capacity of 2,400 dairy complexes totals 1.8 million head, or 750 cows, on the average. An analysis of the economic activity of farms and complexes shows that farms for 400 to 800 head should be considered optimal. With due regard for this new construction is to be carried out during the current five-year plan. However, principal attention will be given to the reconstruction of existing enterprises and to outfitting them with modern equipment and mechanisms, which make it possible to change over to intensive production technology and to raise labor productivity significantly.

The specialization of kolkhozes and sovkhozes in milk production, growing production concentration, and extensive introduction of industrial intensive technologies place new demands on cattle breeds. The development of types of animals adapted to the demands of modern production is possible both through intrabreed selection and the utilization of the best world genetic resources. The latter makes it possible to solve the problem in a shorter time. The Holstein-Friesian dairy cattle breed has the highest genetic potential for productivity and adaptation for operation under conditions of industrial technology. The extensive utilization of bulls of the black-and-white and red-and-white Holstein breed for crossing with domestic cattle breeds in the last few years has shown that during the first generation crossbreeds, as compared with their contemporaries of the initial breed, give an increase of 500 to 700 kg in milk yields.

Taking into account the positive results of such cattle crossing, during the current five-year plan the implementation of the developed extensive program for the "Holsteinization" of cattle will continue and additional measures to establish and strengthen the pedigree stock base will be taken. It is planned to have no less than 5 or 6 million Holstein-Friesian cows in the country and to establish a herd with an annual milk yield of 7,000 to 8,000 kg by the end of the current five-year plan. Only on account of this is it possible to additionally obtain about 3.5 million tons of milk.

Big opportunities for an accelerated implementation of the program for a qualitative transformation of the dairy herd open up in connection with the latest achievements of biological science. The use of the method of embryo transplantation in selection-pedigree stock work makes it possible to significantly increase offspring from animals outstanding in productivity. In 1986-1990 it is planned to take a number of additional steps to strengthen existing and to organize new centers for embryo transplantation, to establish a modern material and technical base, and to reinforce these centers with skilled personnel.

Special attention to the intensification of work on embryo transplantation will be given in zones of intensive dairy cattle raising, where there is a ramified network of pedigree stock farms and highly productive cows with an annual milk yield of 7,000 to 10,000 kg and more. They are primarily Moscow, Leningrad, Lvov, Kiev, and Kharkov oblasts. During the 1986-1990 period it is planned to perform from 26,000 to 30,000 embryo transplantations and to obtain no less than 12,000 calves, which will make it possible to raise more than 3,000 pedigree bulls with a high genetic potential for replenishing state stations for artificial insemination of animals.

An extensive introduction of the flow-shop system of milk production and herd reproduction is an important factor in the intensification of dairy cattle raising. Right now more than one-half of the cows have been transferred to this technology on farms in the Ukrainian SSR, the Belorussian SSR, and the Moldavian SSR and up to 70 or 80 percent of the stock, in Vinnitsa, Volyn, Voroshilovgrad, Odessa, Ternopol, Chernigov, and Grodno oblasts. Ninety-five percent of the total stock of cows has been transferred to flow-shop technology on kolkhozes and sovkhozes in Lvov Oblast and the results have not been slow in showing. The yield of calves has increased from 89 to 95 head and farms in 11 rayons obtain 97 to 98 calves. This is not accidental. Workers servicing stock in the shop for the preparation of cows for calving improve their skills significantly, establish strict control over the physiological state of stock, and with the slightest deviations from the norm take the necessary measures. Specialized brigades and links in other shops also have the opportunity of improving their skills significantly and ensuring the proper feeding, care, and keeping of stock in accordance with the physiological state of animals. In the same Lvov Oblast in the last few years the milk yield per cow increased by 644 kg, totaling 3,063 kg last year. The production costs of milk decreased by 15 percent and the profitability of dairy cattle raising increased to 27 or 28 percent. The introduction of the flow-shop system of production organization contributed to the advances made to a significant degree.

The establishment of a stable feed base and an efficient utilization of feed resources are the decisive factors in the intensification of animal husbandry and of the rates of increase in the production of meat, milk, eggs, and other products. Basic Directions for the Economic and Social Development of the USSR for 1986-1990 and for the Period Until the Year 2000 pay much attention to the development of feed production. By 1990 feed production is to be increased to 550 million tons of feed units, or by 25 to 30 percent, as compared with the attained level. Simultaneously with a buildup in feed production it is necessary to intensify the work on improving its quality, upgrading the structure and nutritive value of the feed ration, and lowering feed expenditures per unit of output. Measures for the further intensification of field and meadow-pasture feed production and increase in the productivity of all fodder land, so that every farm may fully meet the needs of animal husbandry for high-quality coarse, succulent, and pasture feed, are to be implemented during the current five-year plan. On kolkhozes and sovkhozes a specialized sectorial nature is lent to feed production.

Improving land utilization and increasing the yield of all fodder crops on arable land, as well as natural fodder land, are the main ways of increasing feed production.

It will not be possible to increase sown areas under fodder crops. Therefore, the entire increase in the procurement of coarse, succulent, and green feed should be ensured through the intensification of feed production. The yield of perennial grass for hay, haylage, and green mass will have to be increased by 28 to 30 percent as a minimum and of fodder root crops, by 30 to 40 percent. With regard to natural fodder land a fundamental improvement in hayfields and pastures, as well as regrassing of previously improved natural

fodder land, a surface improvement and fencing of cultivated pastures, establishment of sections of irrigated hayfields and pastures and, in the zone of water-logged land, drainage of fodder land will be carried out here.

Fertilizers are some of the basic factors in increasing the yield of fodder crops and the productivity of hayfields and pastures. By 1990 the demand for mineral fertilizers for the needs of feed production will increase to 21 or 22 million tons in the active substance. Irrigated and drained land should become the main base for feed production in regions with sizable areas of reclaimed land.

Intensification of feed production requires an extensive introduction of advanced technologies of cultivation, procurement, and storage of feed. Special attention will be given to the introduction of intensive technologies of cultivation of corn for silage with the utilization of early- and medium-ripening hybrids. By 1990 areas of corn for silage cultivated according to advanced technologies are to be increased to 65 or 75 percent of the total sown areas. The procurement of mixed silage for hogs will increase significantly.

In the solution of the set of problems concerning the provision of animal husbandry with feed great importance is attached to lowering losses of feed and of its nutritive value resulting from technological violations during the harvesting and storage period. The efficiency of utilization of concentrates will depend to a significant degree on the quality of coarse and succulent feed. Science has established that, to obtain a daily milk yield of 20 kg, when cows are fed with first-second-third category hay, the consumption of concentrated feed per kg of milk totals 271, 365, and 500 grams respectively, that is, to attain the same productivity, when third-category hay is used, the consumption of concentrates almost doubles. This is connected with the fact that the nutritiousness of third-category and noncategory hay is two-thirds or one-half of that of similar first-category feed.

The experience of advanced farms indicates that the upgrading of feed procurement technology and the construction of feed storage facilities cost much less than the overconsumption of feed per unit of output resulting from the decline in its quality. Therefore, the delivery of highly productive fodder harvesting equipment to kolkhozes and sovkhozes, as well as intensification of the rates of construction of silage and haylage storage facilities, warehouses for grain fodder, and fodder root storage facilities on farms, will be of great importance in the improvement in feed production. At the same time, it will be necessary to implement a number of measures to improve agrochemical services for feed production. The establishment of efficient control over the quality of feed not only during the period of its procurement, but also in the process of storage, is the urgent task of specialists of kolkhozes, sovkhozes, and agrochemical laboratories and of Gosagroprom workers in the localities.

Special attention is paid to the organization of an economical and efficient utilization of fodder grain for livestock feed. At present science has developed and is introducing on kolkhozes and sovkhozes fundamentally new norms of feeding farm animals envisaging a significant reduction in the

consumption of concentrated feed per unit of output, especially for beef and milk production. It is planned to attain a reduction in the expenditures of concentrates through the balancing of rations of animals in terms of basic nutritive substances, trace elements, and biologically active substances, as well as as a result of an improvement in the quality of hay, haylage, silage, and root crops and an obligatory preparation of all feed for feeding.

It is well known that it is most efficient to utilize fodder grain in the form of mixed feed. During the current five-year plan, as a result of the new construction of enterprises, reconstruction of existing shops and plants, and a more efficient utilization of all capacities, the production of mixed feed on kolkhozes and sovkhozes is to be more than doubled. Right now this matter has been poorly organized in many oblasts in the Ukraine, in the Moldavian SSR, and in the Lithuanian SSR and in a number of oblasts in the Russian Federation. More than 80,000 feed shops and kitchens, many of which are provided with modern equipment, for the preparation of feed for feeding operate on kolkhozes and sovkhozes.

The solution of the problem of feed protein is one of the main task of feed production. Its acute shortage leads to an overconsumption of feed, reduction in the productivity of animals, deficiency of products, decline in its quality, and growth of production costs.

The basic need for feed protein at present and in the future should be met through the arrival of plant protein. Therefore, Basic Directions for the Economic and Social Development of the USSR for 1986-1990 and for the Period Until the Year 2000 envisage a significant expansion of the sown areas and increase in the yield of lucerne, clover, peas, sunflower seeds, soybeans, rape, and other crops with a high content of protein. Oil-bearing crops require special attention. In the last few years under the guise of farm specialization and production concentration sown areas under oil-bearing crops have declined, their yield is not growing, and gross output is decreasing. Nor is there the proper return on the introduction of intensive technologies of their cultivation. Rape--one of the promising protein crops--is being mastered at unjustifiably low rates. In the nutritiousnes and content of protein rape cake and meal are not inferior to soybean ones. One ton of rape seeds gives 350 kg of oil and about 600 kg of cake, which makes it possible to balance about 16 tons of grain fodder in terms of protein. Where agrotechnology and the technology of rape growing and harvesting are mastered, quite good results are obtained. For example, the Prapor komunizmu Kolkhoz in Kolomyyskiy Rayon, Ivano-Frankovsk Oblast, gathers 40 quintals of rape seeds per hectare year after year, at the same time, obtaining more than 1,000 rubles of profit per hectare. The utilization of high-protein cakes as feed additives has enabled the farm to increase the annual average milk yield per cow at sections to 4,300 kg. Weight gains in animals being raised and fattened have increased considerably.

With due regard for the needs of animal husbandry for feed protein and the climatic characteristics in every rayon, kolkhoz, and sovkhoz it will be necessary to sensibly approach the determination of the structure of sown areas, to search for and utilize all the possibilities for an expansion of the areas sown with protein crops, and in accordance with local conditions to

develop the technology of growing them with a view to fully meeting the need of animal husbandry for feed protein. We cannot count only on the arrival of protein feed from state resources. Every region in the country has its own sources for the solution of the protein problem, especially through rape, soybeans, and sunflower seeds. These crops are noted not only for a high content of protein, but, most importantly, are also sources of an irreplaceable amino acid--lysine. It will be necessary to expand the areas sown with peas, especially in the Urals, Siberia, and Kazakhstan, and with lupin and fodder beans in Belorussia, the Baltic region, and the nonchernozem zone.

It is also important to more extensively utilize the possibilities for the industrial output of fodder protein through the capacities of the microbiological industry and chemical synthesis. In March of the current year the Politburo of the CPSU Central Committee examined by way of control the fulfillment of previously adopted decisions on the production of protein feed for animal husbandry and obligated appropriate ministries and departments to take effective measures to fulfil the planned assignments. To take every measure to increase the production of feed protein and to ensure an improvement in the quality of all types of feed is the urgent task of the workers of the agroindustrial complex.

Extensive work on reducing losses and increasing the preservation of the quality of output will have to be done in all Gosagroprom links during the current five-year plan. This is a significant potential for an increase in the production of meat, milk, and other livestock products. At the 27th CPSU Congress M. S. Gorbachev said the following: "Reducing losses of field and farm products during harvesting, transportation, storage, and processing is the most immediate source of replenishing the food stock. We have no small potentials in this respect. An increase in consumption resources can amount to as much as 20 percent and for some products to as much as 30 percent. Moreover, expenditures on the elimination of losses are two to three times lower than on the additional production of the same volume of output."

We fail to obtain a great deal of meat and milk, in particular owing to the weakly developed network of processing enterprises and their technical backwardness. In Central Asian republics, Kazakhstan, the Transcaucasus, and a number of RSFSR oblasts a considerable quantity of milk is transported over a distance of more than 50 km. This leads to a decline in the quality of dairy products and often to direct losses as well. There is a similar situation with livestock processing enterprises. In the regions of the nonchernozem zone of the RSFSR, Siberia, the Far East, and the Extreme North, in Kazakhstan, in Kirghizia, and in some oblasts in the Ukraine and Belorussia livestock is delivered to meat combines over a distance of more than 150 km and in some places, up to 300 km. It is natural that, as a result of long-distance livestock transportation, weight losses and a decline in the quality of meat are inevitable, farms incur losses, and the country fails to obtain a significant quantity of output.

Work on reducing losses and improving the quality of output will be done in two directions. First, through the new construction of meat combines and dairy plants and the reconstruction of existing enterprises. At the same

time, the commissioning of new capacities is planned primarily in regions with a relatively high concentration of the livestock population with a view to maximally shortening the distance of livestock and milk delivery to processing enterprises. Second, direct relations of kolkhozes and sovkhozes with meat and dairy industry enterprises, transition to the direct acceptance of livestock and milk on farms, and delivery of products by specialized transport facilities of meat combines and dairy plants will be introduced systematically. Good experience in the organization of the acceptance of livestock on kolkhozes and sovkhozes and in its delivery by the transport facilities of meat combines has been accumulated in the Lithuanian SSR. About 90 percent of the total procured livestock is accepted directly on farms here. An analysis of the work done points to the high economic efficiency of this method. One livestock van annually transports about 1,500 tons of livestock, which is 2.5 times higher than the average indicators throughout the country. Expenditures on the transportation of animals were lowered by 40 percent and losses of the live weight and fatness of animals were reduced sharply.

Simultaneously with the transition to the acceptance of products at places of production work on the creation of the necessary conditions ensuring the preservation of the quality of products on kolkhozes and sovkhozes--supply of kolkhoz and sovkhoz sections with equipment for the cooling and storage of milk and the construction of sites for the loading of livestock and of access roads to sections--will be intensified.

In the meat industry plans are made to intensify the work on the further improvement in production and on the introduction of low-waste, waste-free, and resource saving technologies. The output of quick-frozen meat products and baby food, as well as the mastering of the output of new products of increased food and biological value balanced in terms of the content of protein, fat, and other components, will grow at outstripping rates. Plans are made to increase the production of semifinished meat products, meat dumplings, and packed meat.

The transfer of enterprises for the processing of poultry in eviscerated form, for which it will be necessary to equip more than 200 complete lines, is to be finished basically during the 1986-1990 period. Plans have also been made to put into operation about 150 new and to reconstruct 300 operating slaughter shops at poultry breeding factories of the system of the Administration of the Poultry Raising Industry.

In the dairy industry it is planned to ensure higher rates of rise in the production of products in greater demand by the population--canned milk, cheeses, and dairy products of higher food and biological value. The output of products in packaged form--milk, cream, lactic acid products, sour cream, pot cheese, baby food, and condensed sterilized milk--will increase. The output of whole milk substitutes will rise considerably.

It has been estimated that, by increasing the production of whole milk substitutes, it will be possible to additionally allocate about 3 to 4 million tons of milk in the very near future. At the same time, skimmed milk, buttermilk, and other milk processing waste will be more widely utilized for

the production of food products. Assignments for the output of higher-quality dairy products are set.

The improvement in the management of the agroindustrial complex made in the country and the intensification of the mutual responsibility of kolkhozes, sovkhozes, and processing industry enterprises for the preservation, prompt delivery-acceptance, transportation, and sale of products will largely contribute to the solution of problems of lowering losses of products and improving their quality.

A successful implementation of the country's Food Program is inseparably connected with the solution of social problems--construction in rural areas of well-planned housing and other projects for social, cultural, and general purposes, intensification of road construction, overall mechanization of labor processes, extensive introduction of the achievements of modern science and advanced practice, and increase in material incentives. The decree of the CPSU Central Committee and the USSR Council of Ministers "On the Further Improvement in the Economic Mechanism of Management in the Country's Agroindustrial Complex" is aimed at the solution of these and a number of other urgent problems facing the agroindustrial complex.

The decree envisages an extensive introduction of the new methods of planning and economic incentives on the basis of advanced standards. The rights of kolkhozes, sovkhozes, enterprises, and organizations of the agroindustrial complex in the solution of economic problems expand significantly. At the same time, however, the responsibility of farms and labor collectives for the end results of their activity increases.

For the purpose of increasing the interest of farms in raising output, it is considered necessary to retain for 1987-1990 the payment of 50-percent increments in purchase prices of livestock, poultry, milk, wool, karakul, velvet antlers, and lucerne, clover, and cereal grass seeds sold to the state by kolkhozes, sovkhozes, and other state enterprises in excess of the average level attained during the 11th Five-Year Plan. The principle of the planning of state purchase of products has been changed.

The responsibility of agroprom committees of Union and autonomous republics, krays, and oblasts for providing animal husbandry with high-quality concentrated feed balanced in terms of protein and other components and their efficient utilization is increasing. Special attention is paid to an increase in the production of feed protein. It has been determined that protein feed additives produced in excess of the plan remain at the disposal of Union and autonomous republics, krays, and oblasts.

The decree also provides for a number of measures aimed at increasing interest in raising the production of livestock products on the private subsidiary plots of the rural population.

Material incentives for labor collectives for saving direct expenditures on the production of products and overfulfillment of the volumes determined by contracts increase considerably.

All this will strengthen cost accounting principles in production management and will increase the role of cost accounting and of the collective contract.

Specific work has already been done in this direction in recent years. One-third of the cattle stock and more than 40 percent of the hogs have been assigned to brigades adopting the collective contract. Experience in the introduction of the collective contract in animal husbandry has been accumulated in all the Union republics. As an example, we can cite the complex for beef production of a capacity of 8,000 head in Floreshtskiy Rayon, the Moldavian SSR. After the transfer of this farm to the collective contract the number of workers decreased from 131 to 59. An average daily increase of 833 grams was obtained. Before the transfer to this contract during the preceding 3 years it did not exceed 640 grams. Labor expenditures per quintal of increase decreased by 27 percent and feed consumption, by 13 percent. Production costs per quintal of increase were lowered from 159 to 122 rubles. Labor productivity rose 60 percent and average monthly wages increased from 222 to 287 rubles, or by 29 percent.

In all, on kolkhozes and sovkhozes in the Moldavian SSR more than 55 percent of the stock of cows and 67 percent of the hogs are serviced by collective contract brigades and many farms have obtained quite good results.

However, by no means all the possibilities of this advanced form of labor organization and wages are utilized fully. There are cases when land, machinery, equipment, and the livestock population are not assigned to the brigades that have adopted the collective contract and the recording of products and of the labor participation of brigade members has been organized poorly. The task is to eliminate the shortcomings existing in this matter and to accelerate the introduction of cost accounting and of the collective contract into all the economic sectors of kolkhozes and sovkhozes.

The fate of the first year of the 12th Five-Year Plan is now being decided on the country's fields and livestock farms. The workers of labor collectives respond to the decisions of the 27th congress of our party with concrete actions. The socialist competition for increasing the productivity of plant growing and animal husbandry and for a strict observance of technological and production discipline is expanding everywhere. The foundation for a successful performance of the forthcoming wintering of livestock and the fulfillment of state assignments for the production of products in 1987 is also being laid these days.

To fulfill the adopted obligations ahead of schedule and to give the country more high-quality products--this is a matter of honor for kolkhoz and sovkhoz livestock breeders and meat and dairy industry workers.

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CPSU SECRETARY NIKONOV ON AGROINDUSTRIAL DEVELOPMENT

AU130601 Moscow VOPROSY ISTORRI KPSS in Russian No 5, May 86 (Signed to Press 25 Apr 86) pp 3-18

[Article by V.P. Nikonov, secretary of the CPSU Central Committee: "The 27th CPSU Congress on the Paths of the Further Development of the USSR Agroindustrial Complex"--passages within slantlines published in boldface]

[Text] The /27th/ CPSU Congress demonstrated our party's faithfulness to Lenin's behests and ideals, its inviolable unity with the people, and its Bolshevist truth and bold criticism of shortcomings, and gave a profound analysis of the internal and external conditions of the country's development.

The historic significance of the 27th congress is primarily determined by the fact that it thoroughly worked out and validated the party's long-term strategic course--acceleration of the country's socioeconomic development, the qualitative reorganization on this basis of all aspects of Soviet people's lives, and strengthening peace on earth. This is the main political result of the congress, which is greatly influencing the course of world history.

Acceleration is a complicated and multiple-planning task. It is primarily an increase in the rate of economic growth. The main thing lies in a new quality of growth, which occurs in conditions of the utmost intensification of production, acceleration of scientific-technological progress, a structural reorganization of the economy, and an improvement in administration, planning, and the entire system of socialist management.

The course of acceleration presupposes pursuance of a strong social policy, a constant rise in the people's living standard, enhancement of the level of maturity of social relations, a deepening of socialist democracy, and updating the work forms and methods of political and ideological institutes. In other words, acceleration is the key to solving all problems associated with the further improvement of socialist society.

The 27th CPSU Congress armed every communist and Soviet person with a clear understanding of upcoming tasks. And they are crucial and large-scale: It is planned to double the country's production potential by the year 2000 with

a fundamental qualitative update, double the national income and production output, and increase labor productivity 2.3-2.5 times. (Footnote 1) (See "Materials of the 27th CPSU Congress," Moscow, 1986, pp 24, 141, 142, 227, 274) This will ensure that the Soviet economy reaches new and greater heights. But to reach them, it is necessary to put into action our society's enormous reserves, invigorate the human factor as much as possible, develop the initiative and creativity of the working people, strengthen discipline and organization, overcome mismanagement, and economize on things big and small.

An indispensable condition for socieconomic progress is further strengthening and enhancing the efficiency of the agroindustrial complex and fully satisfying the country's needs for its output. The party's agrarian policy, formulated by the decisions of the May (1982) CPSU Central Committee Plenum and the USSR Food Program is directed at this. Much has already been done in the course of its implementation.

/First,/ a profound updating of agricultural machinebuilding is under way--new equipment production enterprises are being built and old ones are being modernized. In the last 3 years kolkhozes and sovkhozes have received about 10 percent more machinery and euqipment as compared to the corresponding period before the May (1982) CPSU Central Committee Plenum. In 1985 alone 393,000 tractors, 111,000 grain-harvesting combines, 25,000 machines for harvesting corn, potato, beet, cotton, and a lot of equipment for livestock breeding and fodder production were sent to rural areas. Deliveries of technological equipment to the food sector enterprises of the agroindustrial complex have significantly increased. Capacities are increasing for the production of mineral fertilizers, plant protection agents, fodder additives, concentrated fodder, synthetic coatings, microbiological protein, and other products. The average annual deliveries of mineral fertilizers for agriculture have increased by 23 percent. All this strengthens the material-technical base of the country's agroindustrial complex and creates a reliable basis for successfully implementing the USSR Food Program.

/Second,/ harvests of grain, potatoes, sugar beet, vegetables, fruit, and other agricultural produce have increased. Taking into account 1985 plan fulfillment, procurements of livestock breeding output have increased as compared to 1982, those of meat (live weight) by 2.5 million metric tons, of milk by 9.2 million metric tons, and of eggs by 3.5 billion units. Positive changes in the production of agricultural produce due to economic measures have beneficially affected the efficiency and incomes of kolkhozes, sovkhozes, and interfarm enterprises. The number of unprofitable farms has significantly decreased, and the average annual level of the profitability of kolkhoz-sovkhoz production has on the whole increased in the 3 years of the Food Program's implementation: it was 20 percent (for comparison: in 1982 it was less than 2 percent).

The increase in agricultural production has positively affected the per capita consumption of food products. In 1985 this amounted to: meat and fish--78 kg, including 17.7 kg of fish; milk--323 kg; eggs--260 units; bread--134 kg; fruit and berries--46 kg; sugar--almost 45 kg. On the whole the daily per capita consumption of foodstuffs amounted to almost 3,400 calories. This is

the level of the most developed countries. And the per capita consumption of eggs, fish, sugar, vegetables, and potatoes was not lower, and in some cases higher than in these countries. This corresponds, or is close to the indicators determined by the USSR Food Program. At the same time there are also bottlenecks in its fulfillment--this concerns the production of meat and meat products, fruits and berries, and in certain regions of the country--dairy products. Thus, the problem of providing the population with food products has not yet been solved.

One should frankly say that much has not been done as yet to enhance crop farming and livestock breeding and the work efficiency of the processing sectors of industry. The 27th CPSU Congress noted that "there is movement forward, but the lag in agriculture is being overcome slowly. A decisive breakthrough is needed in the agrarian sector to noticeably improve food supply as early as the 12th Five-Year Plan." (Footnote 2) (Ibid., p 30) As recorded in the new edition of the CPSU Progam, it is necessary to complete the shift of agriculture to an industrial basis, introduce scientific systems of management and intensive technologies everywhere, improve the use and enhance the fertility of the soil, achieve a significant increase in the yield of agricultural crops and livestock productivity, strengthen the fodder base, ensure the stability of agricultural production and weaken its subordination to unfavorable natural and climatic conditions, and eliminate losses in the grown harvest and livestock breeding output. Agroindustrial integration and interfarm cooperation will be strengthened, and the techniques, technology, and organization of the production, procurement, preservation, and processing of agricultural products will be raised to a new level. (Footnote 3) (See ibid., pp 144, 145)

The party Central Committee's Political Report to the 27th Congress given by M.S. Gorbachev, general secretary of the CPSU Central Committee, is of basic importance for understanding the problems of the party's contemporary agrarian policy. The congress decisions are documents that, to use V.I. Lenin's words, give "integral, systematic, and precise answers to the most important questions." (Footnote 4) (V.I. Lenin: "Complete Collected Works," Vol 24, p 79)

As is known, the agroindustrial complex has a leading role in the country's economy. Forty-five million people are working there and 30 percent of the fixed production capital is concentrated in this area. One-third of all the national economy's capital investments are channeled into it. Output of the agrarian sector provides 95 percent of food products and more than 70 percent of the retail goods turnover.

Fully providing the country with foodstuffs in the shortest time is the most important task that the 27th CPSU Congress has set the workers of the agroindustrial complex. (Footnote 5) (See "Materials of the 27th CPSU Congress," p 30) As early as the 12th Five-Year Plan period it is necessary to more than double the growth rate of agricultural production. The gross grain harvest must reach 250-255 million metric tons by 1990. It is necessary to significantly increase production of sugar beet, sunflowers, potatoes,

vegetables, fruit, meat, milk, and other crop farming and livestock-breeding products, and on this basis expand output of the food, meat, and dairy industries. The targets are difficult, but quite realistic.

For this, it is first necessary to ensure a high return on everything that we have. The fixed production capital of the country's agroindustrial complex on the whole increased by one-third and reached R497 billion by the end of 1985, including R318 billion in agriculture. Its structure has changed for the better and its energy capacities have grown, particularly since the May (1982) CPSU Central Committee Plenum.

This gives one the right to say with confidence that agriculture's productive forces and the industrial sectors associated with them have now reached a level of development that allows the major tasks of increasing production of food products and of nonfood goods from agricultural raw materials to be solved successfully.

In the coming period the general economic conditions of the agroindustrial complex' development will also change substantially. If in the 9th Five-Year Plan each percentage increase in agricultural production was accompanied by an increase in capital investments of 4.6 percent--in the 10th, 3.5 percent; the 11th, 2 percent--it is planned that it will be only 0.6 percent in the 12th. This again indicates an urgent need to use what we have better.

Therefore, the congress expressed serious concern about the fact that the effectiveness of using the potential created in rural areas is poor, and that the capital-output ratio is decreasing over the long term. (Footnote 6) (See ibid., pp 22-23, 30-32) For instance, during the 11th Five-Year Plan about R17 billion of capital investments were channeled into the agriculture of the Kazakh SSR, and this sector's fixed production capital increased by 28.4 percent. The average annual volume of gross output did not increase but, on the contrary, decreased by R50 million. Moreover, labor productivity decreased by 10 percent.

In the Ukrainian SSR agriculture's fixed production capital increased by 29 percent for the 5-year plan and production of gross output by only 1.6 percent. In the last 5-year plan in Voronezh, Tambov, Volgograd, Ulyanovsk, Kurgan, and other oblasts the average annual volume of gross output decreased with a significant increase in production capital. Multimillion [ruble] production costs were the result. This situation cannot be tolerated. It is necessary to overcome resolutely this negative trend and to sharply enhance the efficient use of resources. For this it is necessary to focus forces and funds on areas that ensure the greatest return.

Of these, the central one is increasing grain production. Life itself has placed urgent requirements on the agenda--to alter the prevailing trend in the grain economy within the shortest time frames, reduce, and then stop the import of grain. The strategic task of our crop farming is "to ensure that in any climatically unfavorable year the country obtains not less than 200

million metric tons of grain, and under normal weather conditions--250 million metric tons and more." (Footnote 7) (M.S. Gorbachev: "Selected Speeches and Articles," Moscow, 1985, p 264)

In accomplishing this task the party attaches enormous importance to the large-scale introduction of intensive technologies of agricultural crop cultivation. We have already accumulated certain experience. Last year winter grain crops over an area of more than 5 million hectares and spring wheat over an area of 11 million hectares were grown using these technologies, which enabled an additional 16 million metric tons of grain to be obtained.

The use of intensive technologies has had a positive effect on improving grain quality: more than 20 million metric tons of strong, durum, and valuable wheat was procured from the 1985 harvest, which is 8 million metric tons greater than in 1984. As calculations show, R1 of expenditure associated with the intensification of grain production on the average provided about R2 of additional output, which indicates a high return on input funds. However, in many republics and oblasts intensive technologies have not produced the effect that was counted on. In certain oblasts in the Volga region, West Siberia, and Kazakhstan the increase of the spring wheat harvest cultivated using intensive technologies was only 1-1.5 quintals per hectare.

The point is that many of our cadres have been poorly trained for working in the new way. At the same time intensive technologies are essentially industrial technologies. They require the strictest technological discipline, precise and competent action by the crop farmer, and consideration of the features of crop unit, the biology of plant growth, and the use of effective methods of fighting pests, diseases, and weeds. And, of course, it is important to have skilled cadres so as to obtain the maximum effect. Things do not go well without the profound knowledge and professional skill of people. Precisely this is the key to enhancing yield and increasing gross grain harvests.

The use of intensive technologies will significantly increase this year. An area of more than 31 million hectares of grain crops will be cultivated using them, which is almost double that of last year. The cultivation of other crops using these technologies will also increase.

The state makes large expenditures to provide everything necessary for the intensive cultivation of agricultural crops. And its expects a proper return. It is therefore necessary to make managers and specialists at all levels strictly accountable for obtaining planned harvests and to keep these questions under party control. Everything associated with the cultivation of agricultural crops using intensive technologies must be the criterion for assessing the work of communists at farms and scientific establishments and of workers of agricultural departments of party committees at all levels.

In the 12th Five-Year Plan it is also necessary to shift sharply to the path of intensifying livestock breeding. Extensive methods of running this

sector still predominate at many farms. Increasing meat, milk, and other output is mainly ensured by increasing livestock numbers. Today this path must be changed. So as to ensure fulfillment of the Food Program, in the current 5-year plan it is necessary to double the increase in meat production as compared to the previous one and bring its total volume to 21 million metric tons in 1990, that of milk to 106-110 million metric tons, and eggs to 80-82 billion units. Reaching the projected levels is only possible by sharply enhancing livestock productivity. Many kolkhozes and sovkhozes are doing precisely this. And in places where fodder production is run properly and where herd reproduction, pedigree affairs, and labor organization at livestock units is regulated, production is increasing constantly with a stable and even reduced livestock population.

This, of course, does not indicate that livestock numbers should not be considered. The country has many regions where they should be increased. However, in all cases the main thing must be intensification of the sector, accelerated development of fodder production, and enhancement of the qualitative indicators on all types of fodder. Priority must also be given to selection and pedigree work, the widespread introduction of progressive technologies of animal upkeep and feeding, and mainly to a shift to the shop flowline production structure. Precisely this is the main component for a high productivity of livestock units.

Livestock breeding's shift to an intensive basis requires high-level development of the mixed fodder industry and enhancement of product quality. It is projected to implement in the 12th Five-Year Plan measures to significantly expand and modernize capacities and increase production of concentrated fodder.

An urgent task is on the agenda to create a reliable base for the safekeeping of fodder. As of the beginning of 1986 the provision of storehouses for hay in the country as a whole was 11 percent; for root crops, 18 percent; and for silage and haylage, 55 percent. These indicators are even lower in Moldavia, the Central Asian republics and Kazakhstan, Orel and Kirov Oblasts, Krasnoyarsk Kray, Kalmyk ASSR, and a number of the country's other regions. Hence, it is easy to understand the costs that agriculture, particularly livestock breeding, is bearing because of the low quality and losses of fodder.

Particular attention should be paid to the production of fodder protein, in which our livestock breeding has a shortage. In this connection it is envisaged to significantly expand sowing and enhance the yield of leguminous crops and increase the industrial production of protein additives. It is necessary to primarily resolve these questions on the spot. One cannot come to terms with the fact that at many farms the majority of protein fodder components are delivered from the outside. It is therefore necessary for party organizations and party committees to pay the most serious attention to reorienting people's psychology, because there are many local managers and specialists who, having firmly convinced themselves of assistance from the state, are not working properly on the production of plant protein and, moreover, permit large overexpenditures of grain per unit of livestock-breeding output.

The congress pointed out that the immediate way to replenish the food stocks is to reduce output losses of crop and livestock units during harvesting, transportation, storage, and processing. (Footnote 8) (See "Materials of the 27th CPSU Congress," p 31) Therefore, a pressing task is to ensure priority development of industrial sectors that process agricultural raw materials. And this is taken into account in the investment policy for the 12th Five-Year Plan.

If the capital investments for the agroindustrial complex as a whole will increase 13 percent compared to the level of the 11th Five-Year Plan, for enterprises producing grain products they will increase by 30 percent, for enterprises of the fish industry by 40 percent, of the food industry by 56 percent, and of the meat and dairy industry by 72 percent. A package of measures is planned for the production and deliveries of technological equipment and the accelerated development of food machinebuilding. There have never been such major measures to develop the storage and processing base. However, it is not enough to obtain the necessary capital investments and material resources. The main thing is to fully utilize them, commission production capacities opportunely, and receive a return on them. Unfortunately, all is not well in this work. In accordance with the resolution of the CPSU Central Committee and USSR Council of Ministers, R31.7 billion of capital investments are being channeled into developing the material-technical base for the food sectors of industry, including R11.2 billion for construction and installation work.

In the current 5-year plan period almost half of the funds allocated to the food sectors of industry are being channeled into modernizing and retooling enterprises. In this connection the need for modern technological equipment is sharply increasing. As is known, measures to develop food machinebuilding are being taken. But for them to be effective, party and economic organs need to think out and introduce into practice a clearer system of control over the fulfillment of the decisions already adopted on this question.

It is also necessary to achieve better utilization of the equipment that industry already has. The question is primarily one of the stocks of uninstalled equipment. Due to negligence in construction organizations its surplus at facilities of the processing sector as of 1 January 1986 reached R990 million, which is greater than the norm of R94 million; moreover, the proportion of imported equipment is about 45 percent. The above-norm surplus of uninstalled equipment at enterprises under construction in the USSR Ministry of Land Reclamation and Water Resources, the food industry, and the fish and fruit and vegetable industry is particularly great.

I would like to discuss yet another aspect of the work of the processing industry: questions of product quality. They remain acute. Many reprimands are forthcoming on the quality of bread and baked items, meat and dairy products, fish food products, fruit and vegetable preserves, and nonalcoholic beverages. This gives rise to the serious concern of the CPSU Central Committee.

It is necessary to enhance exactingness on party, soviet, and economic organs and ministries and departments to ensure production of products of the proper quality, to constantly identify the available opportunities in this matter, and implement them without delay so that the fundamental breakthrough in enhancing the quality of food products is carried out, as required by the 27th CPSU Congress, as early as the 12th Five-Year Plan.

It is necessary to carry out more actively the work of restructuring enterprises of the wine, vodka, and spirits industry for the production of a wide variety of food products in great demand among the population and the work of improving supplies of food products for Moscow, Leningrad, and other major industrial centers.

The 27th party congress attached great attention to capital constructon. (Footnote 9) (See ibid., pp 240-244) Many unsolved problems have accumulated here which are holding back the development of the national economy. Many of them are in the agrarian sector of the economy. The dissipation of funds and resources in numerous projects, major incomplete construction work, unsatisfactory management of capital investments, parallelism and duplication in the development of rural construction organizations, and their isolation from the interests of agriculture and the sectors of industry associated with it have not only complicated and burdened the construction process, but also made it significantly more expensive. The country has many economically weak farms, to which insufficient volumes of capital investments and material resourdes have been allocated over the period of many years when others, stronger ones, were actively equipped and built up. This situation is clearly abnormal and must be corrected.

The party Central Committee and government have taken measures aimed at enhancing the efficiency of capital investments, ensuring the construction of facilities in strict accordance with set time frames, and accelerating the social restructuring of rural areas.

In the use of capital investments the rights of managers of kolkhozes, sovkhozes, enterprises, and agroindustrial complex organs are significantly expanding. Beginning next year, all capital construction plan indicators will be determined by sovkhozes and other enterprises within the limits of the capital investments and construction and installation work assigned to them. Measures to encourage development of the economic method of construction have also been determined.

The rights and autonomy provided in the sphere of construction enhance the responsibility of managers of the kolkhozes, sovkhozes, enterprises, and organizations of the agroindustrial complex. It should be borne in mind that farms must now conduct construction, as a rule, on their own funds. The main attention should be focused on improving the organization of capital construction, reducing the volume of incomplete construction, and widely utilizing local construction materials.

The creation of single construction organization, their subordination to rayon agroindustrial associations and oblast, kray, and republic agroindustrial committees provides broad opportunities for significantly enhancing the efficiency of construction and expanding the scale of the work to create a powerful infrastructure for the agroindustrial complex, particularly facilities for the storage and processing of output and for rural social development.

Today, when the intensification of production is being enhanced, the role of science and its influence on accelerating socioeconomic processes is increasing. Agricultural science and the sectorial science of the processing industry have had indisputable successes. They actively influence the state of scientific-technological progress of the agroindustrial complex. But nonetheless, their constribution to implementing the Food Program is still insufficient.

Scientists are paying very little attention to developing new areas of biology and biotechnology, the selection of highly productive plant varieties, hybrids, animal breeds and bloodlines, and to the search for efficient ways of developing crop farming and livestock breeding. A noticeable lag can be observed in developing production technologies for food products having a high nutritional and biological value and in creating highly productive equipment and highly efficient biological agents for plant protection.

Scientific support and coordination of research within the agroindustrial complex system has now been entrusted to the V.I. Lenin All-Union Academy of Agricultural Sciences. This scientific center, together with its republic departments, is now called on to conduct scientific research, introduce it into practice, develop and implement special-purpose all-union and sectorial scientific-technological programs in the agroindustrial complex as a whole. First of all it is necessary to ensure an immediate development of priority areas on which the further development of agroindustrial complex sectors depends and to enhance significantly the success of research and the efficiency of introducing scientific developments. After all, agricultural science is a productive force only when its developments accelerate scientific-technological progress in crop farming and livestock breeding, as well as in associated sectors, and enhance their efficiency.

A qualitative reform of the material-technical base of agriculture is one aspect of the matter. Improving production relations is no less important, which, in turn, gives increasingly broader scope to the development of productive forces. The CPSU is guided by a very important precept of the Marxist-Leninist theory of the mutual dependence and dialectical unity of two aspects of social production--productive forces and production relations.

The 27th CPSU Congress noted that the improvement of socialist production relations presupposes the use of new forms and methods of management, planning, material incentives, and improving the activities of all components of the economic mechanism of the country's agroindustrial complex. (Footnote 10) (See ibid., pp 31-40, 146-150, 248-255)

As is known, in accordance with the decisions of the May (1982) CPSU Central Committee Plenum, the agro-industrial complex was singled out as an autonomous objective of planning and management. This permitted a more efficient combination of the sectorial, territorial, and specific-programmatic planning and management of agriculture and associated sectors. At the same time, as practice has shown, due to imperfections in the agroindustrial complex management structure at the union and republic levels the necessary integration of agriculture and the processing industry was not achieved, and substantial changes in the economic mechanism of interrelations between kolkhozes, sovkhozes, and their service organizations did not take place.

Guided by the directives of the April (1985) CPSU Central Committee Plenum on the further improvement of the management of the agroindustrial complex, the party Central Committee and the USSR Council of Ministers deemed it necessary to form a union-republic USSR State Agroindustrial Committee (USSR Gosagroprom) on the basis of the USSR Ministry of Agriculture, the USSR Ministry of the Fruit and Vegetable Industry, the USSR Ministry of the Meat and Dairy Industry, the USSR Ministry of the Food Industry, the USSR Ministry of Rural Construction, and the USSR State Committee for Supply of Production Equipment for Agriculture, and, correspondingly, to abolish them. The ministries of bread products, land reclamation and water resources, and the fish industry and the State Committee for Forestry are also included in the USSR Gosagroprom system and are subordinate to it. Industrial ministries and departments that produce equipment and machinery for rural areas and processing sectors as well as mineral fertilizers and microbiological protein, are obliged to coordinate their work with the Gosagroprom.

A single center has thereby been created for a more flexible and thrifty management of all components of the agroindustrial complex. Its creation is an objective necessity and a behest of the times. The CPSU Central Committee and USSR Council of Ministers' resolution "On Further Improving Management of the Agroindustrial Complex" has determined that the USSR Gosagroprom is a central organ of state management of the country's agroindustrial complex and, together with the councils of ministers of union republics, bears full responsibility for increasing production, fulfilling plans of the procurement of agricultural output and ensuring its complete safekeeping, and for the qualitative processing and significant expansion of the variety of food commodities. For these purposes the committee is given appropriate rights and powers in the sphere of planning, financing, and providing the agroindustrial complex with material and technical resources. The decisions made by the USSR Gosagroprom within its jurisdiction are binding on all ministries and departments, as well as on establishments, associations, enterprises, and organizations. (Footnote 11) (See PRAVDA, 23 November 1985)

As a result of the USSR's creation of Gosagroprom, the cumbersome and expensive apparatus of the former ministries is reduced by 47 percent and its structure is fundamentally simplified. Before, management was carried out with the help of 206 autonomous main administrations, and administrations, and 49 associations. Numerous intersectorial obstacles and departmentalism hampered the integration of agricultural production and the processing sectors

of industry. Management is now concentrated in 10 major units headed by deputy chairmen of the committee. Under them operate 26 science-and-production and production associations.

As noted at the 27th CPSU Congress, completing the shift in the agrarian sector of the economy to new methods of administration and management is an important condition for implementing the USSR Food Program. At present the formation of agroindustrial committees centrally and locally is basically complete. However, this matter was not without its shortcomings.

Within the apparatus of the USSR Gosagroprom the tasks and functions of its subdivisions and the duties of each worker have not been clearly defined to date. This gives rise to a lack of coordination and efficiency and introduces elements of bureaucracy. Many specialists do not want to accept responsibility for resolving questions, as a result of which an unjustifiably large number of executives are drawn to scrutinize them. As with the former ministries, the central apparatus of the USSR Gosagroprom to date examines a multitude of questions that should be resolved locally.

There have been similar shortcomings during the formation of local Gosagroprom organs. The study of the state of affairs locally shows that a single service for material-technical supply has not yet been formed in certain republics and oblasts. The repair enterprises of the former Agricultural Equipment Association continue to fulfill this function.

The system of a dual subordination of enterprises and organizations has not been eliminated in Kemerovo, Kaluga, Pskov, and other oblasts. As a result various trusts, oblast associations, and similar management units of the dairy and meat industry and the fruit and vegetable industry are operating there tojether with agroindustrial committees.

Signals are coming in from local areas that the service of the technical supervision over capital construction has weakened in rayons, and the rights and duties of capital construction departments in rayon agroindustrial associations and oblast agroindustrial committees have not been defined.

The management organs that have been created can and must work in the new way and keep abreast of contemporary requirements and tasks. For this it is necessary for party organizations to have a more principled approach to the selection, placement, and education of cadres, to mold in them more actively a new work style, to seek to combine in them creative principles and a comprehensive approach toward resolving questions, and develop initiative and professionalism. The matter should be organized in such a way that each management worker fulfills his duties at a high professional level, energetically, and accepts responsibilities without fear. The large-scale tasks set before agroindustrial complex workers by the 27th party congress dictate precisely such a style.

Of course, the organizational restructuring of management is not everything. It needs to be reinforced by economc measures. In short, the new structure needs an appropriate and effective economic mechanism. The prevailing methods

and practice of planning and incentives insufficiently orient kolkhozes, sovkhozes, and other enterprises and organizations of the agroindus-rial complex toward obtaining high end results and successfully solving problems of the social reorganization of rural areas. The normative method of planning, economic accountability, and progressive forms of labor organization and remuneration are being used poorly.

Guided by the decisions of the 27th party congress, the CPSU Central Committee and USSR Council of Ministers have adopted a resolution "On Further Improving the Economic Management Mechanism in the Country's Agroindustrial Complex." (Footnote 12) (See PRAVDA, 29 March 1986) This fundamentally important party policy document was drawn up at the initiative and with the direct involvement of M.S. Gorbachev.

The resolution of the CPSU Central Committee and USSR Council of Ministers projects large-scale measures to widely introduce new methods of planning and economic incentives on thebasis of progressive norms, expand the rights of kolkhozes, sovkhozes, and other enterprises and organizations of the agro-industrial complex in resolving economic questions, strengthen the interest and responsibility of labor collectives and all management components for intensifying production, utilizing the achievements of scientific-technological progress, and ensuring high end results. The basic idea of the adopted measures is to provide scope for economic management methods. Essentially it is a question of creatively using the Leninist idea of a tax in kind as applied to contemporary conditions. (Footnote 13) (See "Materials of the 27th CPSU Congress," p 31)

Fundamental changes are being introduced in planning the development of the agroindustrial complex. Beginning in 1987, plans of the sale of output to the state will be drawn up directly at farms on the basis of control figures provided to kolkhozes and sovkhozes by rayon agroindustrial associations. The planning of purchases is being put on a firm normative base. Control figures are being determined on the basis of norms that take into account the economic assessment of land and the provision of fixed capital and labor and other ersources. Planning "on the basis of what has been achieved," which was sharply criticized in the delegates' speeches at the 27th CPSU Congress, will thereby be stopped.

From 1987 union and autonomous republics, krays, and oblasts will be provided with specific plans (per year of the 5-year plan period) of deliveries of meat, milk, eggs, potatoes, vegetables, melon crops, and fruit and berries to all-union and republic stocks. Everything that is produced by farms in excess of this will be fully at the disposal of local organs and will be used for improving the supply of food commodities to the region's populations.

The role and significance of economic levers and incentives are being increased. A course has been taken to introduce full economic accountability in kolkhozes and sovkhozes, which means carrying out expanded reproduction and the resolution of social questions mainly through their own monetary

assets. This method of management on the one hand significantly expands the autonomy and initiative of labor collectives and, on the other, strengthens their responsibility for end production results and places a reliable obstacle before parasitism and mismanagement.

The gradual shift of kolkhozes and sovkhozes to production self-support is reinforced by a number of important measures. Markups on purchase prices for for agricultural output sold to the state by unprofitable and low-profit kolkhozes and sovkhozes are being set for the 12th Five-Year Plan. Markups on purchase prices amounting to 50 percent for sales to the state of output above the average level attained in the 11th Five-Year Plan will also be retained. This markup on grain, under the condition that the plan is fulfilled, is set at 100 percent.

In the system of projected economic measures an important role is assigned to extension of credit and financing. The interest of kolkhozes and sovkhozes, other enterprises, and management organs in and their responsibility for the rational and efficient expenditure of financial resources are being enhanced. The financing of USSR Gosagroprom enterprises will be carried out according to the consolidated items of expenditure from, as a rule, the budgets of oblast, krays, and autonomous republics. Farms will make payments into the budget according to stable norms that take into account their resource potential. The rights of sovkhozes in distributing profits are being expanded. A stricter single system of extension of credit to all agricultural enterprises and organizations is being introduced. The size of payments of insurance claims for losses due to natural calamities is increasing. To improve the financial situation of low-profit and unprofitable agroindustrial complex enterprises, the repayment of financial obligations on USSR Gosbank loans worth R30 billion has been deferred.

Much is also changing in the questions of strengthening material incentives for workers. The wage fund is to be determined according to a stable norm depending on volume of gross or sold output. The labor remuneration of management workers and specialists of sovkhozes and other state agricultural enterprises is being carried out according to stable calculations on every 100 rubles of sold output; that is, it is closely linked with end results and in its economic essence approaches the labor remuneration in contract collectives.

Intensification of crop farming and livestock breeding also requires new norms of labor and production organization based on collective and economic accountability principles. In the current phase the significance of economic accountability is immeasurably increasing. The principle of self-support must be the linchpin of our economic work and must permeate all components of the agroindustrial complex. This is governed by the fact that economic conditions have been created now for the work of kolkhozes and sovkhozes which allow production to be gradually shifted to self-support, expanded reproduction to be carried out, and social questions to be resolved mainly on the basis of their own monetary assets.

Practice shows that in places where constant attention is paid to new forms of labor organization and production and where these issues are dealt with creatively and competently, one can observe a significant increase in production and a reduction in costs per unit of output, and a high profitability of economic activity is ensured.

Unfortunately, this is by no means the case at all farms. Every year a large group of kolkhozes and sovkhozes operate at a loss. There are many farms where the level of the organization of production and economic work is so low that even in good years neither increased purchase prices nor markups on them cover production outlays.

There is also still a lot of formalism in the work of introducing the collective contract. Contract collectives are often created without proper preparation and with violations of the principles of their establishment. Their size is not always validly fixed and often there are numerous indicators and all kinds of limitations that fetter the creative initiative of the executors.

The CPSU Central Committee attaches major importance to the progressive form of labor organization and incentives. The set task is to ensure, within the next 2 years, a shift by all production subdivisions of kolkhozes, sovkhozes, and processing and other enterprises to conditions of contract and internal economic accountability. In this connection it is very important to analyze profoundly and thoroughly and to assess critically the work being done in this area and to carry out concrete measures to further develop and enhance the efficiency of economic accountability and the collective contract so as to utilize more fully this powerful level for strengthening the economies of kolkhozes and sovkhozes. The state of affairs and tasks to enhance the efficiency of the collective contract were discussed at the recent zonal conferences in Krasnoyarsk, Rostov-na-Donu, Lvov, and Alma-Ata.

Economic accountability is the highway to strengthening the economies of agroindustrial complex enterprises. It must be firmly learned that without effective economic accountability, there is no question of a real and effectively functioning economic mechanism. In this area scientific conclusions and recommendations coming from real life and advanced practice are very important for agroindustrial complex workers.

Questions of accelerating social reforms in rural areas and of further enhancing the welfare of agroindustrial complex workers should be the subject of the party's constant concern. They are very important conditions for invigorating the human factor, strengthening the interest of workers in highly productive labor, increasing qualifications and professional skills, and creating stable labor collectives in each kolkhoz and sovkhoz and at processing enterprises. In short, now, as never before, the development of production and the enhancement of its efficiency are particularly closely linked with the solution of social problems. For this, more than R70 billion will be channeled into the agroindustrial complex. It share of the total volume of

capital investments will increase to 28 percent. This is real confirmation of the party's line to further enhance the living standard of rural workers.

Management conditions in rural areas are cardinally changing. And this requires serious improvement in the style and methods of the agroindustrial complex leadership. The 27th CPSU Congress pointed out that it is necessary to place a reliable obstacle before mismanagement and parasitism, put an end to references to so-called objective circumstances, with which certain kolkhozes and sovkhozes have covered up their inability and, at times, unwillingness to work better, and renounce incompetent interference in production activity in rural areas. (Footnote 14) (See ibid., p 32)

On 13 March 1986 the CPSU Central Committee Politburo approved immediate measures on organizing the fulfillment of the 27th party congress decisions decisions and studying and elucidating its documents. The resolution adopted on this question sets the tasks of consolidating in party organizations and every labor collective the atmosphere, created by the congress, of a party adherence to principle, of criticism and self-criticism, and of great exactingness toward cadres for the commissioned task and for the timely identification and elimination of shortcomings and negligence. The Politburo charged departments of the CPSU Central Committee with establishing supervision of the timely scrutiny of the remarks and proposals of party congress delegates and with ensuring that all that is valuable in them be implemented and reflected in the plans of economic and social development. (Footnote 15) (See PRAVDA, 14 March 1986)

The results of the 27th CPSU Congress and the tasks proceeding from its decisions have been discussed at party committee plenums, in primarily party organizations, and at sessions of the collegiums of the USSR Gosagroprom, ministries, and departments. In this the main attention was focused on implementing the plan targets of the current year and the 12th Five-Year Plan as a whole and on improving organizational and political work and the style and methods of managing the economic and social development of the agroindustrial complex.

The fundamental breakthrough in the agrarian sector of the economy projected by the congress requires not only significant qualitative changes in the work level of all components of the agroindustrial complex, but also the strengthening of control over and party influence on the course of this process. As stated at the congress, we need to "look at all our activities from a fresh party view--at all levels and all echelons." (Footnote 16) ("Materials of the 27th CPSU Congress," pp 77-78) In short, assess in a new way and realistically all our activities in light of the requirements of the times. Party organizations are called on to show an example of great exactingness toward each communist, toward leaders and specialists of ministries and departments, and toward party workers, to study competently the state of affairs, investigate thoroughly the essence of problems, make substantive conclusions and validated proposals, fight uncritical approaches toward assessing the achieved results and the desire to justify one's mismanagement by objective reasons, and always occupy a principled, party position in the resolution of all questions.

Questions of the control and verification of performance have always existed and will exist in the practical work of communists. In the current phase they acquire particular significance. Moreover, in organizing control it is very important to lay stress on the personal verification of performance, on organizational and political work, and on providing practical assistance.

As an example, I will cite the seminar-conference at the "Leniniskiy Luch" kolkhoz in Krasnogorskiy Rayon, Moscow Oblast. In our opinion it should have played a major role in accelerating the introduction of intensive technologies of crop cultivation, in intensifying fodder production, in qualitatively improving the livestock population, and in developing technical innovations. The number of managers, specialists, and party and economic workers that attended this seminar-conference was probably more than at any similar function. But what was the practical result? The majority of republics, krays, and oblasts have done very little to date to regulate the production of the machines and machinery shown at the seminar. Therefore, in 1986 only 11 percent of the requirements of kolkhozes and sovkhozes for tedding rakes will be met, 19 percent for corncob grinders, 17 percent for plow standards for moldboardless soil cultivation, and 5 percent for milking machine pulsators. So how many 5-year plans will we need to resolve these questions?

It should be frankly said that a style which is quite useless in our time has developed and become ingrained in certain responsible party, soviet, and economic workers at the rayon, oblast, and even republic level--creating a "shield" for themselves consisting of a group of advanced workers of the best farms, and in other respect just imitating businesslike vigor. Today this will not work. The party congress decisions are a powerful and well-argued attack on inertia and the conservative thinking of the section of leaders who have not yet joined the ranks of active fighters for social and scientific-technological progress.

In the new economic conditions the need to strengthen and improve organizational and ideological activity, and primarily work with cadres, is coming to the forefront for party organizations. The party has always viewed and views the matter of cadre selection, placement, and education as a very important component, a key link in all its many-sided organizational-political activities, and the core of party leadership. This was once again convincingly confirmed by the 27th CPSU Congress, which pointed out that the party and state will continue to develop consistently the material-technical base of the agroindustrial complex, but the main motive force of progress, its soul, was, is, and will remain man. "Today, as never before, agriculture needs people who are interested in working actively, with high-level professional skill and with an innovative bent," the CPSU Central Committee Political Report to the party congress stressed. (Footnote 17) (Ibid., p 31)

One can cite many examples where not the amount of budget allocations, not the increase in the deliveries of equipment and other material resources, but precisely the innovative and deeply thought-out work of party organizations and management cadres has enabled the deep reserves of production to be raised and a high return on the existing production-economic and cadre potential in rural areas to be ensured. Therefore, the development of enterprise, creative boldness, competence, and profound economic thinking in our cadres is the main concern of party organizations. Herein lies the very essence of

the restructuring now taking place. And herein also lies its entire complexity. Addressing the conference at the CPSU Central Committee on 5 April this year, which examined the tasks of developing the country's agroindustrial complex in light of the decisions of the 27th party congress, Ye. K. Ligachev, member of the Politburo and secretary of the CPSU Central Committee, stressed that no economic measures will give a proper return if there is no stable structure of competent specialists and managers at agricultural enterprises. This also fully applies to cadres in the mass vocations. (Footnote 18) (See "At the CPSU Central Committee," PRAVDA, 6 April 1986)

The questions of the selection, placement, and education of management cadres at kolkhozes and sovkhozes must occupy a central spot in the activities of party committees and their agricultural departments. This work must rely on an analysis of the activities of farm managers and their influence on the affairs of labor collectives. A kolkhoz chairman or sovkhoz director should be assessed not on the basis of papers and loud promises, but on the basis of concrete deeds and the results of his work. In the process of this analysis party committee workers must also try to find the reasons for their own omissions so as not to permit unjustified rearrangement of cadres and cadre leapfrogging. Unfortunately, cases where attempts are made to lead individual farms out of a chronic lag just by continuously replacing their managers are still frequent. The frequent replacement of kolkhoz chairmen and sovkhoz directors gives rise to concern. Thus, in Turkmenia and Uzbekistan this amounted to 80 percent in the last 5-year plan, and was even more in the North Osetian ASSR--90 percent. This shakeup of cadres leads to the fact that a manger does not have time to familiarize himself with a collective and find out the specifics of a given production process.

At the same time, the CPSU Central Committee has repeatedly cautioned against this practice. After all, experience shows that in farms where a manager has worked more than 10 years, the yield of grain crops is more than 30 quintals per hectare, the milk yield per cow more than 3,000 liters, and production profitability exceeds 40 percent.

The CPSU Central Committee requires a fundamental improvement in the work with kolkhoz and sovkhoz management cadres, considering this a key problem of management in agriculture and a very important prerequisite for its further development. "Kolkhoz and sovkhoz managers," M.S. Gorbachev said that the conference of the party-economic aktiv of Kazakhstan oblasts and the krays and oblasts of Siberia and the Urals, "are truly the gold mine of our cadres. The difficult work of chairmen and directors must be highly valued and its prestige enhanced so that a stable corps of highly skilled cadres of farm managers is formed and consolidated in each rayon and each oblast, kray, and republic." (Footnote 19) (M.S. Gorbachev: "Selected Speeches and Articles," p 279)

An important and complicated sector of the application of efforts by party organizations is work with agricultural cadres. Particular attention to them is primarily determined by the need to increase the proportion and numerical strength of skilled management and production and technical cadres, as well as workers in the mass vocations--machine operators, milking machine operators, and others.

Now in the country there are 1,940,000 specialists at 49,000 kolkhozes and sovkhozes, that is, about 40 specialists per farm. At the same time there are 450,000 production sectors at kolkhozes and sovkhozes--shops, departments, brigades, and livestock units. And only a little more than half of their managers are specialists with the appropriate skills. In the new economic conditions only politically mature, competent, and really educated people with appropriate skills can successfully manage production, efficiently utilize the production potential created in rural areas, the land, and labor resources, and obtain a maximum return. In this connection the CPSU Central Committee sets this task: All production subdivisions at farms must be headed by specialists with the appropriate specialization.

Another task of party organizations is associated with machine operating cadres. The fact that only 42 percent of machine operators have a secondary education must give rise to concern. At the same time more than 1,000 rayon agroindustrial associations do not have even one vocational and technical schools for training machine operators and other production tradesmen. Even in major crop farming regions such as Voronezh and Rostov Oblasts the network of vocational and technical schools trains 32 percent, 28 percent, and 15 percent of machine operators respectively, and the remainder are trained using short-term courses. And this at a time when intensive production technologies, which require skills and high-level qualifications, are being introduced everywhere. Our appeals to intensify production will be only empty phrases if we do not reinforce them by the work of training cadres and by constant and active concern for them.

The creation of new economic conditions in rural areas in accordance with the decisions of the 27th CPSU Congress, which encourage labor initiative, creativity, and a bold quest for reserves, enables party organizations to undertake the cadre problem properly. The task of party organizations is: Without replacing economic cadres in the agrarian sector and sectors of the food industry, helping them to assimilate new and efficient management methods, which rely on scientific-technological progress and the skillful use of economic and moral incentives. The focal point of all organizational and ideolgical work must now be transferred to farms and enterprises, to crop and livestock units, and to shops so as to ensure a more efficient use of land, production capital, equipment, raw materials, and financial and labor resources.

The decisions of the 27th CPSU Congress are documents of historic significance and of profound scientific foresight of the paths to developing Soviet society, the countrys' economy as a whole, and particularly its agroindustrial complex. They strikingly testify to the ability of the Leninist party to define the goals correctly and calculate strengths and opportunities so as to achieve the greatest efficiency in accelerating production of foodstuffs and agricultural raw materials in the necessary quantities, varieties, and of the highest quality. The congress conclusively showed that the party has acted correctly in adopting the Food Program and a number of other major decisions on the urgent problems of developing the country's agroindustrial complex.

An innovative approach to the matter, rejecting old and unjustified forms of work and obsolete stereotypes of thought, is needed to implement successfully the decisions of the 27th CPSU Congress. Today stress is put on economic management methods. The main thing is not only to maintain, but also to develop to the utmost, enrich, and impregnate with ideas the atmosphere created by the congress. More practical action and initiatives, fewer empty words and exclamations--this is the constant motto for all the upcoming work.

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CSO: 1824/447

ECONOMIC MANAGEMENT PROBLEMS IN GEORGIAN APK RESTRUCTURING

Tbilisi ZARYA VOSTOKA in Russian 2 Jul 86 p 3

[Article by Koba Patiashvili, first deputy chairman of the GSSR State Committee on Prices and Revaz Kakuliya, deputy of the Ministry of Finance GeSSR under the "APK: Reserves of Intensification" rubric: "Economic Reconstruction--High Effectiveness"; first paragraph is ZARYA VOSTOKA introduction]

[Text] The task of accelerating the social and economic development of the USSR which was advanced at the 27th CPSU Congress requires shifts in economics, the implementation of a sharp turn to the intensification of production, and reorientation to complete and top-priority use of the qualitative economic growth factors. This in full measure also concerns such an important sphere of the national economy as the agro-industrial complex of the USSR, which bears the responsibility for fulfilling the USSR Food Program.

The 27th CPSU Congress assigned a specific task to agro-industrial workers of the USSR--improvement of the economic mechanism for the attainment of high final results in the achievement of the Food Program and the solution of social problems on the basis of fuller use of economic potential. The decree of the CPSU Central Committee and the USSR Council of Ministers, "Further Improvement of the Economic Mechanism of Management of the Agro-Industrial Complex of the USSR" also serves these goals.

"If we are going to achieve significant success in agro-industrial production, we must not use only traditional means, said M.S. Gorbachev, General Secretary of the CPSU Central Committee in a report at the June, 1986 Plenum of the CPSU Central Committee. "Only by concentrating resources, by setting priorities for key directions, by skillfully using assets put in the new economic mechanism and the management structure, shall we be able to operate efficiently and rapidly develop production..."

Our republic [GeSSR] has accumulated a certain experience in the matter of APK management and has achieved considerable success also in the field of its economic restructuring. However, it must be mentioned that in several regions, decisive, daring changes in management methods, changes which the decisions of the 27th CPSU Congress of the June Plenum of the party Central

Committee have aimed at agro-industrial workers, have not been noted up to now.

What is the cause of this? Primarily, this is because economic work does not stand at the proper level on many farms and in rayon agro-industrial associations.

The expansion of the economic horizon of all workers is very important in the matter of the improvement of the economic mechanism--from the kolkhoz worker to the leader, deep understanding by them of economic party politics, involvement of everyone in the campaign for economy and thrift, introduction of scientific achievements into production, the raising of labor productivity, and the lowering of production costs.

However, it is impossible to explain only by the low level of economic work the fact that some of the kolkhozes and sovkhozes use the financial help of the government poorly, and their economy is not strengthened. As the result of ineffective use of the economic potential in the South Ossentian Autonomous Oblast and in the Tianeti, Tsalka, Sagaredzho, Ambrolauri, and other rayons, the production of all basic agricultural products is at a loss.

Livestock breeders of the republic have a lot of unresolved problems. In spite of the measures taken, murrian and compulsory slaughtering of cattle are widespread on farms. Loss due to these events exceeded 20 million rubles in 1985. The republic obtained 68 calves from 100 cows and only 26,000 cows in the sovkhozes, or 37.7 percent of all cows in the milk stage did not produce calves in 1985. To keep these dry cows, 8.8 million rubles was wasted. The average milk yield of cows did not exceed 1,000 kilograms in almost one-fifth of the public sectors of the republic.

Audits conducted and information from the scenes indicate that agricultural enterprises continue to divert considerable capital for the improvement of cities and urban settlements, the offering of help to other farms, and also for the maintenance and provision of fodder for the cattle of individuals and the ploughing and cultivation of gardens and personal plots, etc. In connection with this, there are new basic positions on planning and the estimation and calculation of the production cost of agricultural output confirmed at the end of 1985 by the USSR Gosplan, the USSR Ministry of Finance, the USSR Central Statistical Administration, and the USSR State Agro-industrial Committee, supplemented by a text, according to which it is forbidden to include in the production cost, expenditures for the fulfillment or wages for enterprises of work (services) not connected with production, and also the offering of help for personal subsidiary farms of individuals. Kolkhozes and sovkhozes can grant these services in an established order for pay. This document aims for farm leaders to work on the basis of economic calculation and to strengthen the campaign against bad management and wastefulness. The competence of the leader requires raising the role and value of such key factors calculation as the production cost, profit, and profitability. We need agricultural products, but in the necessary volume and not produced at any price.

Important economic indicators such as labor productivity and wages continue to remain outside the attention of the leaders of rayon agro-industrial enterprises, kolkhozes and sovkhozes. Last year, the rate of the rise of wages in comparison with the average annual level of the 11th Five-Year Plan outstripped by 15.2 percent the rate of the rise in labor productivity, including that of kolkhozes, by 22.5 percent. This undesirable ratio reaches 36-46 percent in the public sectors of Tetri-Tskaro, Gori, Sagaredzho, Telavi, and other rayons. And economically improper forms of material stimulation were introduced in recent years in Kvareli, Akhmeta, Sagaredzho, and a number of rayons without an economic basis in the form of an experiment, as the result of which labor productivity decreased by 10-41 percent, and wages increased by 34-60 percent. The relative share of wages reached 60-70 percent of production cost. It is disturbing also that, by the introduction of improper wage systems, we promote a lessening of motivation of workers employed in the country. They undeservedly obtain from society more than agreed for them for the work. It is precisely for this reason that the agro-industrial associations of these rayons now find it very difficult to introduce economically well-grounded systems of organization and wages and to change to a collective contract.

Propaganda and practical work on the introduction of a contract frequently emphasize chiefly its material advantages, at the same time forgetting that for a number of our society the moral advantages of collective work are not less, and perhaps more, important.

Therefore, a rate based only on the material interest and the underestimation of the importance of the moral factor and of its powerful influence are dangerous.

There are moral advantages of collective work, and there is that new force which raises labor to a higher level. Unfortunately, its importance is still not always fully appreciated by the leaders of our farms.

The rise in production cost is also affected by the fact that for the last three or four years the profit increase of the public sectors of the republic basically is dependent on markups of the purchase price.

Sovkhozes of the republic lost 59 million rubles in 1985 as the result of the rise of the production cost of agricultural products caused by the lack of fulfillment of production plans. At the same time, the profit obtained by means of markups of purchase prices reached 75 million rubles, i.e., the balance comprised 16 million rubles. The rise in production cost without the corresponding output absorbed more than 75 percent of the total allocated by the government.

This is not permitted in the present Five-Year Plan. It simply is not in keeping with the task proposed by the 27th Party Congress to provide a gradual shift of kolkhozes and sovkhozes to complete economic calculation and self-support. It is necessary to take genuine thrift and efficient management into account and to try to reduce different unproductive expenditures and losses to a minimum.

Economically weak kolkhozes and sovkhozes have many potentialities for obtaining profitable work. More efficient use of production potential and elimination of unproductive expenditures and losses can improve their activities considerably. To put this reserve into action, one must first of all strengthen labor and productive discipline, improve economic work, and adopt progressive forms of organization and wages and intraeconomic calculation in all subsectors.

Shift of the public sectors to complete cost accounting is inconceivable without a good accounting system. The experience of advanced agricultural enterprises of the republic shows that in them, as a rule, all processes of production and distribution of production are imbued with the strictest accounting. Bookkeeping heads this work. Its workers have the potential to control the efficiency of the use of resources, to implement a system of economy, and to watch for intactness of socialist property.

At the same time, audits show that accounting at enterprises of the State Agricultural Committee of the republic do not always correspond to modern requirements. Many sovkhozes, kolkhozes and enterprises of the processing industry of the South Ossentian Autonomous Republic and Tsalka, Ambrolauri, Makharadze, Akhmeta, Mestia, Lentekni, and other rayons weakly control receipt, movement, and expenditure of material resources, and cases of deception and additions are encountered.

Increased responsibility is required for losses of all units of the APK and of workers personally for doing strict accounting. The solution of these problems will promote the use of scientifically based methods of accounting of losses of output at all stages of its production, state procurements, transport, storage, processing, and sale.

It is no secret that previously unprofitable work and a low level of purchase prices made it possible for many managers to justify the presence of overdue debts to the bank and nonpayment to suppliers for objective reasons. They strive very little to eliminate the debts of debtors and spend their own working capital.

Serious complaints must be presented to the leaders of the economic and judicial services of the agro-industrial associations and the public sectors of Signakhi, Gori, Kareli, Sagaredzho, Tianeti, Khashuri, Borzhomi, Tsalka, Dmanisi, Ambrolauri, Telavi, and other rayons for not conducting for a long period of time a study of the reality of debtors' arrears, not striving for their reduction, and baselessly attempting to write them off in fiscal results.

It was stressed at the 27th Party Congress that economic work should begin with the eradication of those elementary causes which hamper enterprises in normal activity. Namely, this requirement also must lie as the basis of restructuring of work of the economic services of agro-industrial associations and public sectors. They must analyze economic activity objectively, find the causes of unprofitability of branches, look for reserves and plan the most effective ways of their achievement. In a word, skilled economic services must stand as the true compass of the management of agro-industrial activity.

Serious attention must be paid today to the improvement of economic work at the next step of APK integration, especially in the middle link of management--the rayon agro-industrial association. All branches entering into the agro-industrial complex should develop optimally so that their final results are in dynamic relationship with each other.

The forms of economic work in the country should be diverse. It is necessary to increase the efficacy of public bureaus of economic analysis on farms, to aim them at increasing the efficiency of economic calculation, wide adoption of a collective contract, and intensive technology. It is important in economic work not to allow formalism and an increase in paperwork, and to adopt self-financing not in form but in essence. Those good-for-nothing leaders of farms are in error who think all economic work should be shifted to economists. Every leader of a kolkhoz and sovkhoz must be an economist, know the economic mechanism, and know how to use it. Every agronomist, livestock specialist, engineer or other specialist is obligated to know the economics of his branch and be responsible for its level.

Local financial, credit, and pricing agencies must take active part in the development of organizational-technical measures for making healthy the economics of unprofitable farms and then establish constant control for carrying out these measures. At the same time, it is necessary to increase control of the operating-financial activity of the public sectors, expenditures of one's own capital means, effective use of the credit assigned and its timely repayment, and to take measures to strengthen the economy of enterprises.

The decree of the CPSU Central Committee and the USSR Council of Ministers maps out important measures for the strengthening of the economy of the public sectors.

For active influence on reducing losses of fruits and vegetables and lowering the prices of kolkhoz markets, the State Agro-Industrial Committee has been allowed the right to establish retail prices for those fruits and vegetables which will be sold in stores within their jurisdiction.

The Georgian CP Central Committee mapped out serious measures for the large-scale adoption of a collective contract, but some of the leaders of the rayon agro-industrial associations and public sectors did not realize that the rapid pace of development of our agriculture is possible only in this way.

Meanwhile, it should be learned that the collective contract cannot exist without intrafarm calculation. The final results of production are reflected not only in the amount of output obtained, but also in the level of expenditures incurred for the cultivation of agricultural crops and the handling of them, by the only method of control which is intrafarm calculation.

The adoption of the collective contract requires from the leading workers of kolkhozes and sovkhozes and the RAPO's of more well-thought out planning and economic analysis, the raising of the total level of management and production organization, and strict observation of technological discipline.

The question is posed: in what relationship can the contract section be a true husband of the soil? Unfortunately, in practice, many leaders of kolkhozes, sovkhozes, rayon agro-industrial associations, and other agencies frequently connect an understanding of "husband of the soil" chiefly with the right to give orders. The right is given to the contract collective to decide itself when, how, and what to do, up to the selection of agrotechnical periods of work.

Under a contract, the role of agrotechnical control is extremely great for the work of the executives. In our opinion, it is necessary to nip in the bud any violations of the requirements of agro-engineering. For this, leaders and the chief specialists of the farms have the right to reject substandard work and to require its alteration and to prohibit work not conducted in accordance with agricultural regulation: Thus, the chief specialists of the kolkhoz and sovkhoz and not the contract team are the "husbands of the soil".

The decree of the CPSU Central Committee and the USSR Council of Ministers on the improvement of the economic mechanism of the economic operation of the agro-industrial complex of the USSR poses more tasks for financial and pricing agencies.

Improvement of the economic mechanism of management of the agro-industrial complex is impossible if in all regions of the republic there is not arranged a purposeful program for the improvement of the financial-economic position. Planning, financial, credit, and pricing agencies must give their word here. First of all, constant efficient control is necessary for effective use of budget resources and exact implementation of measures directed toward strengthening the economics of unprofitable and low income farms.

In a word, the achievement of maximal effectiveness in work on the economic reconstruction of the agro-industrial complex requires, naturally, the corresponding reconstruction also of the work of financial and pricing agencies. The second plenum of the Georgian CP Central Committee stressed especially that every leader and every worker must begin to reconstruct with himself and to find most of all in himself inwardly the potentialities to operate with maximum speed. And for this, it is necessary to understand completely the essence of changes going on in our life and in the life of Soviet society, and clearly to define one's own position and one's own role in this matter. A maximum of forces is necessary in order to put an end to the inertia of old-fashioned work and to obtain the most rapid implementation of all reserves for raising efficiency in the work of the agro-industrial complex of the republic--most of all its lower subdivisions--of kolkhozes, sovkhozes, and RAPO's.

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