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8 May 1984

USSR Report

AGRICULTURE

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MAJOR CROP PROGRESS AND WEATHER REPORTING

CARE FOR WINTER CROPS IN UKRAINE OUTLINED

Kiev SIL'S'KI VISTI in Ukrainian 13 Mar 84 p 1

[Article, published under the heading "Timely Advice," by the Southern Department of the All-Union Academy of Agricultural Sciences imeni Lenin and the UkSSR Ministry of Agriculture: "Care of Winter Crops"; passages enclosed in slantlines printed in boldface]

[Text] Implementing the decisions of the December (1983) and February (1984) CPSU Central Committee plenums, farmers are waging a persistent campaign for successful accomplishment of specified grain production targets in the fourth year of the five-year plan. In this republic winter crops take up half of the acreage within the structure of grain crops and account for more than 60 percent of the gross grain harvest. Conditions for winter grain crop overwintering were generally favorable this year.

Over the greater part of the republic the minimum soil temperature at winter crop tillering node depth did not reach a critical level, and on the whole as of the beginning of March overwintering has proceeded satisfactorily with the exception of certain areas in the northeastern oblasts, where substantial crop damage may occur as a result of persistence of an ice crust. As a result of last year's dry autumn, the condition of winter crops over the greater part of this republic, especially in the steppe oblasts, is characterized by a differing degree of plant development -- following bare and occupied fallow, winter crops have tillered for the most part, while following nonfallow rotation phases they are in the 1-3 blade phase. Therefore /innovative utilization of all crop care techniques, taking into account the condition of the crops, will substantially improve conditions of renewal of spring vegetation and will help produce high crop yields./

In order to ensure intensive plant growth and the forming of superior productive shoots, in this year's conditions /early-spring application of nitrate fertilizers will be of exceptional importance./ In view of limited moisture reserves, in the southern areas one should widely employ fertilizer application to winter crops as early as possible. We should approach this in a differentiated manner: consider the condition of the crops, soil moisture, and other factors. First of all fertilizer should be applied to stands where the plants have inadequately tillered or were weakened over the winter. An optimal amount of nitrogen

application is 30-40 kilograms of active ingredient per hectare. It is advisable to apply to acreage which was insufficiently fertilized in the fall, alongside nitrate fertilizers, 30-40 kilograms of phosphorus and potassium per hectare.

Well developed stands on soils with adequate moisture, especially during early renewal of vegetation, should receive fertilizer during the tillering phase completion period, with fertilizer incorporated into the soil adjacent to the roots by suitably equipped disk seeders. Local application at a later time, in comparison with early-spring application, somewhat reduces the possibility of lodging of excessively developed stands and has a positive effect on formation of the grain harvest. On poorly-developed stands it is more advisable to employ early-spring fertilizer application by aircraft, in order to reduce plant damage.

This year there should be extensive employment of multiple applications of mineral fertilizers, which substantially boosts grain yield. According to the figures of the Mironovka Wheat Breeding and Seed Production Scientific Research Institute, application of 30 kilograms of nitrogen at two times -- a top-dressing application and incorporation adjacent to the roots, early in the spring -- produced a grain yield increase of more than 10 quintals per hectare.

/Following renewal of spring vegetation,/ farms which have been assigned targets for sale of strong and valuable varieties of wheat to the state /should determine crop acreage from which enhanced-quality grain can be obtained./ Such stands should be given root-adjacent application of a complete mineral fertilizer, and later, during the heading stage, foliar top dressing with urea in doses of 40-45 kilograms of active ingredient per hectare.

This year, just as last year, the time of renewal of the spring vegetative stage will be of importance, particularly for poorly-developed winter crop stands. Figures covering many years, from research conducted by the All-Union Corn Scientific Research Institute and other scientific establishments, indicate that/plantings where sprouting has occurred with considerable delay and where stands are thin produce a satisfactory crop yield only under favorable conditions in years with early vegetative stage renewal. In connection with this, we should focus particular attention on preserving stands with somewhat smaller plant density than is usually recommended./

On fields in which winter crops did not emerge in the fall or in which the crop sprouted a few days prior to cessation of vegetation (except for Crimean Oblast and a number of rayons in Odessa and Kherson oblasts), even with favorable spring conditions winter crop yields will be poor, and therefore such acreage should be resown in early spring grains, and with limited moisture supply in the upper soil layer, acreage should be left for resowing with late crops: corn, millet.

It is advisable to preserve and not to reseed thin stands with a density of 200-220 plants per square meter in the 2-3 stem phase with early vegetation renewal. Stands with a density of 170-200 tillered plants per square meter should also be preserved, and they should be continuously watched in order, when

necessary, to overseed with spring crops, seeding with not less than 70-80 percent of the full normal quantity. Stands in the 2-3 blade phase with a density of 250-300 plants per square meter must receive an early application of a complete fertilizer and left to mature to harvest condition.

When necessary, /spring harrowing/ should be performed on winter crop stands for the purpose of breaking up the soil surface and destroying weed seedlings. Winter crops planted with stubble drills or receiving fertilizer application with disk seeders do not require additional harrowing. It is not advisable to employ this method on heavy, moisture-soaked soils or parched soils if following harrowing the top layer has not adequately opened up, as well as on ground with a friable soil layer.

/Fighting weeds/ is important for obtaining high crop yields. According to the figures of scientific research institutes, if there are only 10 weed plants per square meter, wheat yields decline by 7-12 percent, while with 30-40 plants per square meter the decline is 30-35 percent. One feature of this present year is a substantial increase in overwintering weeds; a large quantity of early dicotyledonous weeds is also expected in poorly-developed stands. Therefore /it is mandatory to apply herbicides on weed-affected acreage, especially in thin winter crop stands./ The mass spring tillering phase is the optimal time to apply herbicides to winter crops.

With minor occurrence of weeds and the presence of weeds which for the most part are the most sensitive to herbicides, and with warm weather, herbicide application rates are reduced, while with substantial occurrence of weeds, the presence of overwintering and perennial weeds which are resistant to herbicides, as well as with cool weather, the application rate is increased.

Herbicides should be applied to growing crops at an air temperature of not below 15-16 degrees Celsius.

Primarily ethers 2.4D -- butyl, octyl, crotyl -- are employed to combat weeds among winter crops; these are also effective in cool-weather conditions. These herbicides are applied in a dosage of 0.4-0.5 kilogram of active ingredient per hectare. Amine salt 2.4D is applied in dosages running from 0.7 to 1 kilogram, and sodium salt -- 1.1-1.5. Preparation 2M-4KhP (2-3 kilograms per hectare) is more effective, especially when crops are affected by the following weeds: bachelor's button, larkspur, and sowthistle.

Weeds are almost totally destroyed if the following herbicide mixes are applied: 0.5 kg of amine salt 2.4D and 0.2-0.5 kg of chlorocrotyl ether 2.4D, or a mixture of ether with amine salt 2.4D. If the temperature is higher than 15-16 degrees, one can use amine salt 2.4D alone.

Herbicides should be applied primarily with ground sprayers equipped with a horizontal spray boom. Not less than 300 liters per hectare of water is required to prepare the herbicide solution, in order to ensure the most uniform distribution of herbicides throughout the application area.

In order to prevent possible lodging, well developed stands planted following fertilized predecessor crops, especially on low-lying ground, should be treated with retardants: winter wheat -- preparation TUR in a dosage of 4-5 kg of active ingredient per hectare, rye -- kampozan in a dosage of 1.5-2 kilograms.

/We should employ wide-swath equipment on standing crops, in order to diminish the negative effect of tractor and implement wheels on unnecessary passes./

It is also essential for all farms to /implement an aggregate of measures to combat crop pests/ -- mice and the like, carabid ground beetles, chinch bugs, etc. These measures should be taken in conformity with current recommendations and mandatory observance of safety precautions, under the supervision of farm specialists.

/Prompt, timely and high-quality implementation of the entire aggregate of winter crop care procedures on every kolkhoz and sovkhoz will help boost yields and increase the gross grain harvest, and will promote successful fulfillment of this year's grain production targets./

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MAJOR CROP PROGRESS AND WEATHER REPORTING

EARLY PLANTING SUGGESTED FOR HIGHER YIELDS

Kiev SIL'S'KI VISTI in Ukrainian 14 Mar 84 p 1

[Article, published under the heading "Timely Advice," by Professor S. Buhay, Kiev Institute of the National Economy imeni D.S. Korotchenko: "Early Planting, Larger Harvest"]

[Text] Of particular importance among agricultural measures aimed at producing high crop yields is adherence to optimal planting times. Departure from the proper planting times leads to a poor harvest and worsening of product quality. While optimal calendar planting times are specified for winter and late spring crops, there are no such optimal designated times for early spring crops. They are specified at the beginning of spring, which occurs at different times in different years. Departure from the average timetable runs 10-15 days and sometimes more.

I recall that warm weather came very early in 1966. The snow disappeared rapidly, and the soil could be worked by 6-8 March. The days were warm and sunny, with moisture rapidly evaporating. In view of this fact, scientists recommended that winter crops and winter fallow be harrowed. There was also the question of planting early spring crops. There was no experience in this matter on which to rely; however, taking into consideration the biological features of certain crops, it was possible, without excessive risk, to proceed with planting peas, barley, oats, winter wheat, vetch, etc, for we knew that the seed of these plants begins to germinate at a temperature of 2-3 degrees Celsius and that shoots can withstand temperatures to minus 4-5 and sometimes as much as mins 9-10 degrees. With an average daily temperature of 5 degrees at seed planting depth, shoots appear in 20-22 days. The total of average daily temperatures from planting to emergence of shoots runs approximately 100-110 degrees for these crops in all cases.

Young plants are the most resistant to low temperatures. Scientists have conducted experiments in which they kept winter wheat of various age at a temperature of -10 degrees Celsius for a period of 8 hours. It was determined that 97 percent of plants survived at an age of 6 days after sprouting, and 76 percent 9 days after sprouting. Wheat showed the greatest resistance to cold during the period of germination: shoots 0.5 cm in length, with 30 percent soil moisture, withstands temperatures as low as minus 11-13 degrees.

Research at the Moscow Agricultural Academy imeni K. A. Timiryazev indicated that early small grains also do not lose germination even when seed is planted in furrows cut by disks in frozen soil long before spring.

Also meriting attention is the following. Numerous experiments were conducted in 1966 on planting extremely early -- at the end of the first and beginning of the second 10-day period in March. Snow fell and freezing weather hit between the 20th and 30th of this month. Warm weather did not return until the first 10 days of April. On the Bolshevik Kolkhoz in Kagarlykskiy Rayon, Kiev Oblast, 40 hectares were planted in peas prior to 9 March -- the crop yield ran 34.7 quintals per hectare. Only approximately 21 quintals of peas per hectare were obtained from acreage planted on 12 April (following recommencement of field activities). Other than weather, growing conditions were identical. We should add that earlier-planted peas are more resistant to diseases and crop pests, particularly to pea weevils and aphids.

Early planting of peas produces good results in all growing areas. At the Kharkov Experimental Station, for example, the crop yield ran 20.6 quintals per hectare with planting on 15 April (average time of commencement of spring field activities), while the yield was 16.4 quintals with planting on 5 May.

Early planting also has a positive effect on spring barley yields. Even a small delay leads to a sharp decline in yields. In tests performed at the Kirovograd Experimental Station, with a 5-day delay in planting, grain yield declined by 4.1 quintals, while at the Erastovskaya Experimental Station the yield drop was 6 quintals with a 7-day delay. Yields drop off particularly substantially in dry years. In 1963, for example, the barley yield ran 36.6 quintals per hectare on test plots at the Vinnitsa Experimental Station with planting at the commencement of field activities, while the yield dropped to 22 quintals with planting 4 days later, and to only 12.8 quintals per hectare with planting 8 days after commencement of field activities.

In the Southern Ukraine high yields are obtained with very early planting, at the beginning of March, as the weather warms. A subsequent cold snap does not damage the plants. Leaf yellowing disappears when the weather turns warmer, and crop stands begin to look healthy, with rapid plant growth.

In view of experiments conducted by scientific establishments as well as considerable production experience, preparations for planting early crops should be performed in a prompt and timely manner in order not to lose an opportunity to plant early, a practice which has a great advantage over customary planting dates, especially in a year with inadequate moisture reserves.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

SPRING PLANTING PROGRESS IN CRIMEA

Kiev SIL'S'KI VISTI in Ukrainian 13 Mar 84 p 1

[Article by V. Hryhorenko, Crimean Oblast: "Spring Comes to the Fields: Crop Planting in the Foothills"]

[Text] Farm machinery operators in the Crimea have begun field work this year somewhat earlier than usual. Field work is in full swing in Leninskiy Rayon. It is situated on the Kerch Peninsula between two seas. There were fewer night freezes here than, for example, in the foothill areas, so that they have been able to plant early spring crops on more than 6,000 hectares. Coastal-zone farms in Sakskiy Rayon have planted almost 5,000 hectares in spring crops. Farm machinery operators in Belogorskiy and Simferopolskiy rayons, however, were forced to wait a long time for spring to gain ascendancy over the night freezes.

"Every morning the specialists and I would tour the fields," states Ye. V. Shevchenko, chairman of the Kolkhoz imeni Lenin in Simferopolskiy Rayon. "We would see that the ground was frozen and that we could not plant. But the weather was good for applying fertilizer to winter crops. And we made use of all warm days to apply mineral fertilizers to the crops with fertilizer spreaders. Three crews were working on two shifts, every day overfulfilling their quotas. Particularly high performance figures were achieved by machinery operators Mykola Ivanov, Mykhaylo Shvayko, and Dmytro Shevchenko. Within a short period of time they accomplished fertilizer application on a total acreage of 2,400 hectares of crops. This is a very important procedure; it ensures good crop yields, for soils in the foothill zone are rocky, and white clay and so-called marls occur. When we plow, the fields appear to be covered with snow.

While they were applying fertilizer to the winter crops, Serhiy L'ovushkin, Dmytro Nesteruk, Anatoliy Zharkovs'kyy, Mykola Holybin, Fedir Boyarko, and other kolkhoz farm machinery operators prepared the soil for the spring planting. They cultivated the fields and closed in the moisture. When the soil warmed up, they performed preplant tillage, and four seed drills took to the fields to plant oats, to which the farm has allocated 100 hectares. This is not much acreage, but they had to hurry, for the weather could change at any time. Mykola Ivanov and Dmytro Shevchenko changed their fertilizer spreaders for grain drills, while Anatoliy Zharkovs'kyy and Pavlo Tymoshenko pulled two other units. They completed the planting of oats in 2 days.

"They worked in an exceptionally well organized manner," stated the kolkhoz chairman. "This year Viktor Khodyshchenko's brigade introduced a collective contract. And we can already see what good effect this is having on organization of labor and on strengthening labor discipline."

The last 3 days it has been raining on the peninsula.

"This is good," states oblast agricultural administration chief agronomist V. I. Pyatnyts'kyy. "There was very little moisture in the soil. This rainfall has averaged up to 20 millimeters. Prior to the rains we succeeded in planting early spring crops on more than 25,000 hectares and in preparing the soil on 100,000 hectares."

Spring is in full swing. Soon the Crimea's farm machinery operators will commence planting sunflowers, alfalfa, followed by corn, our main feed crop, to which almost 200,000 hectares have been allocated.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

GRAIN CROP SEED TREATMENT RECOMMENDED

Kiev SIL'S'KI VISTI in Ukrainian 10 Mar 84 p 1

[Article, published under the heading "Timely Advice," by I. Babchuk, chief, Plant Protection Administration, Ukrsel'khozkhimiya; H. Hrysenko, director, Ukrainian Scientific Research Institute for Plant Protection; and O. Kravets', scientific secretary, Southern Department, All-Union Academy of Agricultural Sciences imeni Lenin: "Seed Treatment"]

[Text] In recent years a number of agricultural, chemical, and biological measures have been adopted into agricultural production which make it possible substantially to reduce harvest losses from many diseases. Last year there occurred a spread of smut and other diseases of cereal grasses. Wheat was harder hit by hard smut in Volyn and Voroshilovgrad oblasts, while barley was hit harder in Nikolayev and Odessa oblasts. Root rot is observed on winter wheat in the Steppe and Forest-Steppe zones, especially in wheat planted in stubble and in early-planted crops.

The planting qualities of grain seed, especially barley, have declined in some oblasts, as a consequence of the fact that during the harvest period the ears became populated with microorganisms -- pathogens of "black plumule," kernel blight, fusarial head blight, and bacteriosis.

Decline in seed quality could occur during extended lying of grain in windrows, as well as from late drying, because of the grain lying for an extended time in piles with elevated moisture.

In connection with this, seed must be treated prior to planting.

Some farms neglect this important measure. Frequently inadequate dosages are applied, which fails to produce the desired effect. This applies to certain farms in Chernovtsy, Volyn, Rovno, Lvov and other oblasts. Some kolkhozes and sovkhozes in Kiev, Donetsk and Kirovograd oblasts are still planting with untreated seed.

In order successfully to combat smut, root rot and other diseases of spring crops, it is essential to treat seed in a prompt and timely manner, but not earlier than 15-20 days prior to planting. Farmers utilize for this purpose suspensions of preparations (at 10-25 liters of water per ton of seed) of

granozan [an ethylmercuric chloride seed fungicide] with dye -- for barley, oats, and millet; TMTD and phenthiuram -- for corn, peas, and sunflowers, in the dosages recommended for each crop.

In areas of occurrence of downy mildew of sunflowers, seed is treated with aprone (6 kg per ton).

Effective against shifting smut and root rots on barley and spring wheat are systemic treatment agents -- benomil (fundozol) or vitavaks. Wherever soil pests also occur, combined-action preparations are employed for row crops, preparations containing fungicides and insecticides -- hamahexane, tigam, etc. It is essential strictly to adhere to preparation application standards and properly to utilize treating agents. If there are no systemic preparations against shifting smut of barley and wheat available, heat treatment of seed is the most effective technique.

To reduce damage to winter wheat stands by root rots, they are sprayed at the stem extension phase with fundozol (0.5-1 kg per hectare). Studies have shown that in winter wheat stands treated with this preparation, disease-attacked plants prior to harvest did not exceed 7 percent, as compared with 30-33 percent on untreated acreage.

In treating seed and in its subsequent storage, recommended safety rules and procedures should be strictly observed.

Recently an incrustation technique was developed for preplant treatment of seed corn, sunflower seed and other crop seed. Seed is treated with recommended preparations, adding film-forming material of polyvinyl alcohol and sodium-carboxymethyl cellulose. This ensures uniform distribution and sticking of the preparation on the seed, which substantially improves the quality of treatment and makes working conditions healthier and more hygienic.

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WINTER CROP CARE IN DONETSK OBLAST

Kiev SIL'S'KI VISTI in Ukrainian 4 Mar 84 p 1

[Article by SIL'S'KI VISTI correspondent H. Senkevych, Donetsk Oblast: "Fertilizer Being Applied to Winter Crops"]

[Text] Winter crops, especially winter wheat, occupy a substantial position in the grain "budget" of the farms in Donetsk Oblast.

"A good foundation has been laid down for the harvest," states I. T. Parfinko, deputy chief of the oblast agricultural administration. "Considerable acreage of winter wheat has been planted on clean and occupied fallow, while the remainder follows corn. Preference has been given to the best area-tailored varieties, which include Okhtyrchanka, Donetska-5, Odeska-55, and Pivdenna Zorya. They are all of an intensive type and have done well in the conditions of this oblast."

Last fall 100,000 hectares of winter crops received fertilizer application. Fertilizer application took into account local condition of the crop. Practical experience of previous years indicates that spring fertilizer application is of particular importance for winter crops. Therefore, as soon as the first opportunity presented itself, farmers took to the fields in a coordinated effort. Fertilizer is being applied on level ground, where washout is least.probable. The target is to apply fertilizer to all winter crops, including local applications -- with coverage of not less than 150,000 hectares.

Ground application techniques are being used side by side with aerial application. Retired-from-service grain drills are being extensively utilized alongside fertilizer and manure spreaders. To date fertilizer has been applied to one third of winter crop acreage in this oblast. More than half of total winter crop acreage has received fertilizer application on the farms of Telmanovskiy, Velikonovoselkovskiy, Krasnoarmeyskiy, and certain other rayons.

Upon resumption of vegetation all winter crop stands will be inspected, with fields designated for growing strong and high-value grain. Two additional foliar top dressing applications are planned for this acreage, with simultaneous employment of methods of combating weeds and crop pests. Elevated dosages of nitrate fertilizers will be applied on this acreage.

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PROGRESS REPORTED IN DEVELOPING SEED SUPPLIES FOR SPRING PLANTING

Kiev PRAVDA UKRAINY in Russian 10 Jan 84 p 1

[Article by G. Belokhvostov, chief agronomist of the USSR Varietal Seed Crop Production Association: "For the Coming Harvest"]

[Text] Agricultural Review

The kolkhozes and sovkhozes of the republic have assured themselves of an adequate supply of seed for the upcoming spring planting, having stored up almost a half million tons of seed. According to available information, 99 percent of the seed was sowing standard quality on January 1st. In addition, 88 percent was classified as first quality, which is 9 percent greater than at this time last year. Farms of Cherkassy, Khmelnitsky, Vinnitsa, and Ternopol Oblasts turned in outstanding work in the preparation of seed stocks.

Farms which begin preparations for the seed crop even in the middle of the harvesting season are on the right track. In order for them to do this, they assemble full-time links and brigades and establish all the right conditions for highly efficient operation. They work in two, and--in some cases--three shifts, making maximal use seed-cleaning equipment. Moral and material incentives were designed with these workers in mind. These were specifically employed on farms of the Gorodishchenskiy Rayon of Cherkassy Oblast, on the kolkhozes imeni Ivanenko of Mirgorodskiy Rayon and imeni Kotlyarevskiy of Karlovskiy Rayon in Poltava Oblast, and on a number of others, where all seed stocks are already prepared for the spring planting.

But, there are some other factors to be weighed. In Zaporozhye, Donetsk, Crimean, and Kherson Oblasts, first quality seed still constitutes only 56-80 percent of the total stock. On farms of the Pervomayskiy Rayon in Crimean Oblast, the Uzhgorodskiy Rayon in Transcarpathian Oblast, and the Bereznegovatskiy Rayon in Nikolayev Oblast, such seed is in even shorter supply.

Serious charges should be brought against scientific research institutions and oblast agricultural experiment stations. They are duty-bound to provide kolkhozes and sovkhozes with high-quality seed for the timely renovation of strains, and to

assist in the rapid introduction of new, high-yielding varieties. Unfortunately, the needs of farms for high-quality stocks of oat, legume, soybean, and perennial grass seeds are still not being met. Strange as it may seem, in almost every oblast of the republic(with the exception of Dnepropetrovsk, Poltava, Rovno, Kharkov and Cherkassy Oblasts), many of the outstanding farms have not, as of today, upgraded their seed to high sowing standards.

The staffs of grain-processing enterprises in the republic have been called upon to provide considerable assistance to the farmers. It is a matter of fact that kolkhozes and sovkhozes receive thousands of tons of seed from state resources. But, as of January 1st, only 17 percent of such seed reserves--one fifth the level prevailing on kolkhozes and sovkhozes--had been upgraded to first quality. This situation must be corrected with all possible haste.

Recent research into the development of corn seed has yielded considerable success: more than 20 new hybrids of various maturity dates have been regionalized. The skillful introduction of these new varieties will make it possible within the near future to store up an additional reserve of about 300,000 tons of grain.

The 44 seed-processing plants operating within the republic render substantial material aid in the preparation of seed. They have processed almost 115,000 tons of seed in a short period of time. Such types of plants in Sumy, Lvov, and Khmelnitskiy Oblasts have turned in especially good work. On the other hand, there are five plants in Chernovitsy Oblast having a current processing capacity of more than 18,000 tons of seed, and they have produced a total of 7500 tons. The Sverdlovsk plant in Voroshilovgrad Oblast is not producing up to expectations.

The foundation of the coming harvest is being laid today. Farm directors, agronomists and specialists in the rayon links must work together to focus attention on the preparation of seed; they must regulate the exchange of seed reserves in order to ensure the availability of as much first quality seed as possible. This will go a long way toward providing a worthwhile contribution to the realization of the nation's Food-Supply Program.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

SITUATION WITH SPRING FIELD WORK EQUIPMENT IN UKRAINE VIEWED

Moscow IZVESTIYA in Russian 22 Feb 84 p 1

[Interview with M. V. Khorunzhiy, UkSSR minister of agriculture, in Kiev by special correspondent A. Dolenko; date of interview not given]

> [Text] Spring field work is underway in the southern oblasts of the Ukraine: cultivation of winter crops, tilling of fall-plowed fields and planting of perennial grasses.
>
> An IZVESTIYA correspondent met with UkSSR minister of agriculture M. V. Khorunzhiy.

"The Ukrainian field is generous," explained M. V. Khorunzhiy. "One could cite a great many kolkhozes and sovkhozes, and rayons which produce abundant harvests even under difficult conditions. During the tough 1983 season, farms of the Khristinovskiy Rayon in Cherkassy Oblast yielded 35.6 quintals of cereals and 39.4 quintals of winter wheat per hectare. Or the Monastyrishchenskiy Rayon, where 52.3 quintals of corn was the average harvest per hectare. The basis of this success was the labor of the people involved, their attitude toward their work and their sense of responsibility for the end result."

[Question] What specific steps are being taken to avoid crop failures, to produce a good harvest and to bring it in without losses?

[Answer] Outstanding scientific and technological advances have found application within the highly complex program which we have developed for improving the reliability of grain farming. The main objective is to increase the production and harvesting of grain. To this end, farms have formulated plans for the rational use of grain acreage, and are increasing the amounts of fertilizers applied, while expanding the sowing of high-yielding varieties and hybrids. In addition, progressive technologies are being introduced, and reserve acreages have been set aside for the sowing of cereal and leguminous crops. We are allowing for the expected increase in the overall volume of springtime operations.

A particularly significant aspect of the arduous harvesting work ahead of us is the large role in the grain balance which is being assigned to corn. This year, the acreage allotted for the cultivation of this crop for industrial usage will increase by a third. Serious attention is being given to putting together the

mechanized links and brigades of workers, and to the transferring of these sub-units to a collective contract.

A conference was held at the All-Union Scientific Research Institute for Corn in Dnepropetrovsk for the purpose of developing recommendations for the cultivation of this crop during the coming year.

[Question] What effect will land improvement measures have on the harvest of 1984?

[Answer] Today, almost two thirds of the farms make use of irrigated and drained acreage in order to obtain decent harvests regardless of weather variables. This is particularly effective on kolkhozes and sovkhozes of the Crimean, Kherson and Donetsk Oblasts, where the irrigated hectare yields three to four times as much as the non-irrigated. On drained lands, where prior to improvement the wet soils had produced low yields, harvests are now being realized on a level with highly fertile lands, while for many farms--the level is even higher. These kinds of carefully managed plots make it possible to actually program the harvest.

At the present time, maintenance work is proceeding apace on interfarm irrigation and drainage canals, hydrotechnical equipment, and high-power pumping stations. Already, three quarters of the republic's overhead irrigation systems and installations have been put into good operating condtion. Leading the way are the farms of the Voroshilovgrad, Dnepropetrovsk, Sumy and Kherson Oblasts.

We expect a great deal from both partners in the agro-industrial complex. From Goskomsel'khoztekhnika[State Committee for Agricultural Equipment], for instance, --more concrete assistance in speeding up deliveries of spare parts. There is an equally complicated situation in the availability of corn-harvesting equipment. Farm workers have requested Kherson combine-construction officials to manufacture an additional thousand PPK-4[type of electrical cable]accessories for corn-harvesting machinery, and are impatiently awaiting their delivery. We are in need of a number of T-150[Minsk tractor plant]tractors and KPI-2 and KPI-4[expansion unknown] mowers.

[Question] Each spring is different from those before it. Each has, as they say, its own mood, its own caprices. But the farmer's task is always the same: to complete the harvesting work within an optimal timeframe. What is being done in this area?

[Answer] It is extremely important to combine the work force into a single concentrated effort. For this purpose, 13,300 mechanized complexes will be created for the spring planting period.

Commentary from the IZVESTIYA Agricultural Desk

We would like to draw attention to some things which were not dealt with in the interview. Specifically--the level of operational readiness regarding equipment. The minister states that the overall volume of springtime work is increasing--this is quite true. We would assume, therefore, that the operational readiness of equipment must also be greater than last year. And, in fact, intensive preparations must be made for farm work later on in the season, since the assigned objective is

to increase the volume of gross farm production by 6.5 percent compared to 1983 levels.

What is the situation with farm equipment in the Ukraine? The operational readiness of tractors is quite adequate--89 percent, which is 3 percent better than the average for the country. But, it is the same as the level for last year. And indeed, those 11 percentage points below total readiness represent almost 52,000 inoperative machines. Meanwhile, the overall volume of operations--as noted above--will continue to increase.

The tractor-drawn equipment--plows, cultivators and planters--is practically all in good working order. That is fine, but is it enough that the tractor forces, as they are called, merely enjoy the availability of all the "attachments?" Shouldn't they be able to use them within the optimal timeframe?

The harvesting and storing of grain begins early in the Ukraine. At this time, however, only 56 percent of the KSK-100[expansion unknown]corn-harvesting combines and 57 percent of the E-280 machines[type unknown]are in good repair. This level is below that for the country on average.

This leads to a single conclusion--every effort should be concentrated on repairing tractors and corn-harvesting equipment. For this, it is essential that the farms recieve assistance from Goskomsel'khoztekhnika and Gossnab of the USSR.

9481
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PROBLEM AREAS CITED IN SPRING PLANTING PROGRAM IN UKRAINE

Kiev PRAVDA UKRAINY in Russian 24 Feb 84 p 1

[Article in the column "In the Central Committee of the UkSSR Communist Party": "For the Spring Planting--Flawless Preparation"]

[Text] The Central Committee of the Communist Party of the Ukraine[CPUK] has carefully laid out the course to be followed in preparing for the spring planting. On the whole, this work is being conducted in a highly organized manner within the republic. The exact composition of the sown acreage for this year's harvest on the kolkhozes and sovkhozes has been worked out using scientifically based methods of crop rotation. The seed for the spring crop is already in storage bins. More than 90 percent of the grain crop seed has been upgraded to prime quality seed standard. In general, all of the soil-working and seed-sowing equipment has been made ready and is being checked out. Repair work on tractors, irrigation equipment and land improvement systems is being completed. The farms are stockpiling mineral fertilizers, herbicides, fuels and lubricants. The training of cadres is in full swing. The number of brigades and links working under collective contract is considerably higher than last year.

At the same time, however, as a check has shown, there are still inadequacies to be found in this work. A number of kolkhozes and sovkhozes of Zaporozhye, Donetsk and Odessa Oblasts have received insufficient quantities of first-quality seed for the spring grain crop. Certain enterprises of the USSR Minzag[Ministry of Procurement] as well as numerous "Ukrsortsemovoshch"[UkSSR associations for the procurement and distribution of first-quality vegetable seed] are experiencing a shortage of first-quality seed. On certain farms of Zhitomir and Kiev Oblasts, there is a shortage of seed potatoes. Preparations for the irrigation season in Nikolayev, Odessa and several other oblasts are proceeding quite slowly. The USSR Minvodkhoz[Ministry of Land Reclamation and Water Resources], USSR Minsel'khoz[Ministry of Agriculture] and USSR Goskomsel'khoztekhnika are not providing the proper assistance to them for the repair of hydrotechnical equipment and high-power pumping stations. Sel'khoztekhnika enterprises of Dnepropetrovsk, Rovno and Sumy Oblasts are permitting poor quality control in equipment repairs. A number of farms of Voroshilovgrad, Zaporozhye, Kharkov and Kherson Oblasts have too few machine operators for double-shift operations.

Contractual obligations to supply farms with spare parts, materials and agricultural machinery are not being met by the Voroshilovgrad crankshaft plant, the Kharkov tractor engine plant, and a number of other enterprises.

In accordance with the requirements of the December(1983) and February(1984) Plenums of the CPSU Central Committee, the CPUK Central Committee has instructed party obkoms, gorkoms and raykoms to step up organizational and mass-political work directly within labor collectives, after first applying it to the fulfillment of plans and accepted socialist commitments. The following areas must be given high priority: eliminating existing shortages; providing for timely and effective completion of the entire range of operations related to preparing for and carrying out spring planting; consistently improving production and technological discipline; increasing the accountability of supervisors and specialists on kolkhozes and sovkhozes, and in agricultural agencies for improvements in agricultural stability and output.

The attention of top officials of ministries and departments, comrades M. V. Khorunzhiy, V. A. Lisitsyn, N. A. Garkusha, V. L. Filonenko, I. I. Shmatol'yan and P. I. Mostovoy, has been directed to the existence of substantial deficiencies and to the ineffective solution of a number of problems associated with preparations for spring planting.

The USSR Minsel'khoz, USSR Minplodoovoshchkhoz[Ministry of the Fruit and Vegetable Industry], USSR Minzag, USSR Minvodkhoz, USSR Minpishcheprom[Ministry of the Food Industry], USSR Gossnab, USSR Goskomsel'khoztekhnika, USSR Glavplodvinprom[Main Administration of the Horticulture, Viticulture and Winemaking Industry], USSR Goskomnefteprodukt[State Committee for the Supply of Petroleum Products], Ukrsel'khozkhimiya[UkSSR Agrochemical Services to Agriculture Scientific Production Association], as well as oblispolkoms, must all institute immediate measures for providing kolkhozes and sovkhozes with high-quality seed, fertilizers, and fuels and lubricants. They must also take measures to assure the timely and efficient repair of the tractor fleet and land-improvement systems.

The USSR Gosplan, Minsel'khoz, Minplodoovoshchkhoz, Minpishcheprom, Minzag, Minvodkhoz, Glavplodvinprom and Goskomsel'khoztekhnika have been charged with local organization for purposes of carrying out the measures developed to increase grain production during 1984-85, and also with stipulating the allocation of essential material-technical resources in order to do this. Specifically, these measures must be implemented: the development of a scientifically sound, zonal system of agriculture; the introduction of new high-yielding varieties and hybrids; an increase in the level of mechanization and more efficient use of equipment; a reduction in the time required for, and an improvement in the quality of field work; strict observance of the industrial technology for the cultivation of corn and other crops; an increase in the yield from redeveloped croplands; expansion of the practice of programmed harvests on irrigated lands.

Agricultural ministries and departments, party obkoms, oblispolkoms, raykoms and rayispolkoms, as well as agro-industrial associations have been urged to begin implementation of additional measures designed to accelerate scientific and technological progress. In this effort, they would be making wide use of knowledge gained from the collaboration of kolkhozes and sovkhozes of the Zhashkovskiy Rayon in

Cherkassy Oblast and Stryyskiy Rayon in Lvov Oblast with a number of scientific research institutions. Additionally, more active use should be made of cost accounting, collective contracting and measures to increase the interest of kolkhoz and sovkhoz workers in spurring labor productivity, reducing production costs, and economizing in the expenditure of material-technical resources.

It is very important that the efforts of kolkhozes and sovkhozes and the personnel of their enterprises and organizations, as well as those of all participants in the agro-industrial complex be directed toward achieving the maximal end results. We must take every possible measure to maintain the level of initiative shown by: Dnepropetrovsk and Kirovograd Oblasts in increasing overall corn harvesting; Crimean and Kherson Oblasts in increasing the use of irrigated land, Rovno--the use of drained land; Kharkov Oblast in improving its agrochemical service; Lvov Oblast in boosting the production of beets and sugar. The paramount objective is to achieve an increase this year in the production of corn, sunflower seeds, sugar beets, potatoes, vegetables and other crops. High priority must be given to laying in a significantly greater amount of coarse and succulent feeds.

The CPUK Central Committee has established these requirements for party committees: continuous improvement in the style and technique of party management of all subunits of the agro-industrial complex; improved training of cadres, primarily equipment operators, assisting them in learning to operate advanced equipment and make use of advanced techniques on the job; increased effectiveness of socialist competition; unceasing attention to establishing the proper conditions for obtaining highly productive efforts from farm workers.

9481
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MAJOR CROP PROGRESS AND WEATHER REPORTING

OVERVIEW OF PRESENT, FUTURE GRAIN SITUATIONS IN KIRGHIZ SSR

Frunze SOVETSKAYA KIRGIZIYA in Russian 20 Oct 83 pp 1-2

/Article by N. Korneva, doctor of agricultural sciences, professor and deputy general director of the Kirghiz Scientific Production Association for Farming: "The Republic's Grain Fields: Today and Tomorrow"/

/Text/ The soil-climatic conditions of Kirghizia are very diverse and its natural conditions rich and beneficial. Various agricultural crops are grown here. Among them, grain crops are quite properly considered to be the leaders, with the farmers constantly displaying concern for increasing their production. And although the area occupied by them is comparatively small -- approximately 500,000 hectares -- nevertheless an abundance of warmth, the availability of irrigated lands, which constitute a large portion of the arable land, and persisent labor on the part of all of the grain growers are producing perceptible results. The production of grain in the republic has increased in recent years.

With each passing year, the grain fields are becoming more generous. Compared to 1970 when the republic's grain crop yield did not exceed 12-15 quintals, during the 8th Five-Year Plan 18.7 quintals were obtained, during the 10th -- 23.6 and in 1981 -- 26.1 quintals per hectare. This year the winter wheat sowings were damaged over considerable areas by heavy rainfall and April frosts and yet notwithstanding this fact an average yield of 35.6 quintals was obtained from irrigated lands. The highest yields were obtained on farms in Osh, Issyk-Kul and Naryn oblasts and in Kantskiy, Moskovskiy and Sokulukskiy rayons. The kolkhozes and sovkhozes in the southern part of the republic, for example, obtained an average of 39.4 quintals from an irrigated hectare and in the Issyk-Kul region -- 37.1 quintals of wheat, barley and oats. The workers in Kantskiy Rayon obtained 37.3 quintals per hectare.

The republic's corn growers have achieved considerable successes. In recent years the grain yield has amounted to 50-55 quintals per irrigated hectare. The leading farms are obtaining considerable corn yields. This year the sovkhozes Uzgen and Kurshab in Uzgenskiy Rayon obtained yields of 100 quintals. Yields of 60-75 quintals of grain were obtained by the semkhoz /seed farm/ imeni XXI 50-Letiya SSSR and the kolkhozes imeni XXI Parts"yezda in Sokulukskiy Rayon and Rossiya in Moskovskiy Rayon.

The increase in the productivity of the republic's grain fields is the result of the use in farming of new and highly productive varieties and hybrids, the

use of progressive agrotechnical methods and organic and mineral fertilizers, improvements in seed production and a raised level of mechanization. Over the past few years, the collective at our institute has developed a zonal system of farming and turned over five highly productive varieties of wheat to production. Such varieties as Eritrospermum-80, Intensivnaya and Frunzenskaya-60, which are intensive type varieties, are also classified as strong wheats and have a potential cropping power of 80-90 quintals per hectare, surpassing Bezostaya-1 on irrigated lands by 5-8 quintals and on non-irrigated lands -- by 2-4 quintals. These varieties are winter hardy and somewhat resistant to both lodging and diseases.

The Eritrospermum-80 variety, for example, is also distinguished by a high resistance to drought conditions. At the Przhevalsk State Strain Testing Station, it furnished an average of 98 quintals of grain and when a high level of agricultural practices is employed the leading farms obtain from 55 to 70-76 quintals on the average. The Intensivnaya variety, which can be sown during the autumn, winter or spring, combines high productivity with early ripening and fine technological qualities for the grain. On irrigated lands the grain cropping power is 55-69 and on non-irrigated lands -- 34-40 quintals per hectare. When sown during the spring at the Przhevalsk State Strain Testing Station, an average of 83 quintals was obtained and when sown in the autumn -- 93 quintals. This variety is irreplaceable for late autumn sowings.

The Frunzenskaya-60 winter wheat variety is intended mainly for non-irrigated lands. At the Lyaylyakskiy State Strain Testing Station, when grown on hard non-irrigated land, this variety furnished 67.7 quintals of grain per hectare. It can be grown successfully on irrigated lands. Still another wheat variety has been developed -- Kirgizskiy Polukarlik. This durum wheat is intended for the macaroni industry and when sown in the winter its maximum yield from irrigated lands was 82.9 and when sown in the spring -- 62 quintals per hectare.

New varieties are being created to replace the above. The Lyutestsens-46 winter wheat variety has been turned over for state testing; in terms of cropping power, it surpasses Bezostaya-1 and Eritrospermum-80 by an average of 9-12 quintals per hectare.

Kirghizia is a republic of highly developed animal husbandry operations. Thus the scientist-plant breeders at our institute are devoting a great amount of attention to creating new forage crop varieties -- barley, oats, Tritikale and corn hybrids. The highly productive, drought resistant and high protein Nutans-970, Nutans-45 and Naryn-27 varieties of spring barley are well known and have won the recognition of the production workers. The Azyk barley variety for irrigated lands and also for non-irrigated lands which receive ample amounts of precipitation and the Zhal intensive variety of winter barley have been developed and turned over for strain testing. The Tolkun spring barley variety, which was created at the institute, has been recommended for use in high mountain zones. In the Kara-Kudzhur Valley, over a period of 3 years according to data supplied by the Kirghiz Scientific-Research and Technological Insitute of Feed and Pastures, averages of 65 and 25 quintals per hectare were obtained and this was 16.5 and 8.7 quintals more respectively than that furnished by the Nutans-45 standard under these same conditions.

State testing is being carried out on the Predgornyy winter oats variety, which with one watering furnishes up to 60 quintals of grain and 600-650 quintals of fodder on the average per hectare and on two varieties of Tritikale, created by the plant breeders at the Issyk-Kul Experimental Plant Breeding Station jointly with scientists of the Academy of Sciences for the Belorussian SSR. When sown in the autumn, they furnish an average of 70-74 quintals of grain and 350-400 quintals of fodder.

During the years of the 10th Five-Year Plan, the Kirghiz NPO for Farming created three new highly productive corn hybrids -- Chuyskiye 47TV, 466TV and 62TV. They are characterized by a high potential cropping power: grain -- up to an average of 120-130 quintals and when grown for silage -- 600-650 quintals of fodder. An important feature of these hybrids is the fact that during the period for harvesting the ripe ears for grain, the leaf and stalk bulk is green and this makes it possible to prepare fine quality silage from it. They combine a high productivity with a raised protein content in the grain (12.6 percent). Their protein content is 35-50 percent higher than that for the Krasnodarskiy 5TV and Yugoslavskiy hybrids.

New and more productive varieties are being created at the present time. The new Sary-dan hybrid has been turned over for state testing. This hybrid is characterized by an increased number of double-ear plants and it furnishes an average of 154 quintals of grain and 763 quintals of silage bulk per hectare. Moreover, the leaves still remain green during the period for harvesting the ears for grain. A production check on these two new highly productive corn hybrids will commence in 1984. The scientists at the Kirghiz NPO for Farming have developed a tense program of plant breeding work for the future; a winter wheat variety for irrigated lands with a potential cropping power of 100-105 and a corn variety with an average cropping power of 150-160 quintals of grain per hectare will be created.

With each passing year, an increase is taking place in the amount of fertilizer being applied in behalf of cereal grain crops and corn. Compared to the years of the 9th Five-Year Plan when an average of 89 kilograms of nutrients was applied per hectare of wheat, barley or oats sowing, during the 10th Five-Year Plan -- 114 and at the present time approximately 150 kilograms. More than 300 kilograms of nutrients are applied in behalf of corn and this is more by a factor of 1.6 than the amount for the 9th Five-Year Plan. Improvements have taken place in the culture of farming: the crop rotation plans are being mastered, double-level plowing is being introduced on irrigated lands and sweep cultivation -- on non-irrigated lands and greater quantities of herbicides are now being used for combating weeds.

However, many problems have still not been solved and full use is not being made of the reserves available for developing the republic's grain economy. The new regionalized and highly productive varieties are still not occupying all of the sowing areas planned for them.

The seed for high reproductions is being grown by farms of the Kirghiz NPO for Farming and they are coping with this task for the most part: each year the plans for producing seed for cereal grain crops are being fulfilled. And exception was 1982 when, owing to drought conditions, the seed sales plan was fulfilled by only 95 percent.

The seed of second and up to the fifth reproductions must be grown for farms by spetssemkhozes, which obtain their elite and 1st reproduction seed from the Kirghiz NPO for Farming. Unfortunately, not all of the spetssemkhozes are fulfilling their plans for selling seed to the kolkhozes and sovkhozes.

In addition to fulfilling their sales plans completely, the spetssemkhozes must also create insurance and carry-over seed funds. If this is not done, one unfavorable year can bring about a sharp reduction in the quality of the seed and in the productivity of the grain fields the following year. This is what happened following the dry year of 1982; in behalf of the 1983 crop, 11.6 percent of the seed sown was sub-standard, 12.4 percent was 3d class and 37 percent was lower than the 5th reproduction. In the case of some oblasts and rayons, the seed quality was even lower.

The work of producing seed for corn is not proceeding too well at an experimental farm of the Kirghiz NPO for Farming and this is associated with the cultivation of a large number of initial forms, a shortage of irrigated lands and a constant deficit of water for irrigation.

Further improvements in the productivity of the grain fields must ensure the constant and complete use of scientific-technical achievements when introducing scientific developments that are already available. Here we have in mind expanding the fallow fields on non-irrigated lands, mastering a grain crop rotation plan on irrigated lands in all areas and the extensive use of plows with subsoil attachments and double-level plows for the principal cultivation of irrigated lands.

The scientists at the Kirghiz NPO for Farming have developed and are continuing to improve an industrial technology for the cultivation of corn. As a result of studies carried out, the machine operators proposed a group of working organs which lower power consumption considerably and raise the quality of ridging work for irrigation purposes and this promotes improved plant development and an increase in the cropping power of the corn.

And finally there is the weediness of fields. It is well known that weeds lower the cropping power of crops and the quality of grain to a considerable degree. At the present time, a grain grower has adequate means and methods at his disposal for waging an effective campaign against weeds. This includes crop rotation plans, the timely and high quality tilling of soil, the sowing of optimum norms, the use of herbicides and inter-row tilling of row crops. Importance is also attached to having a system of preventive measures available for use -- constant working of shoulders of roads and ditches and treating them with herbicides to combat weeds. Such a system must be developed and carried out constantly on each farm. The timely and high quality carrying out of agrotechnical measures in connection with the cultivation of grain crops will promote the efficient utilization of fertilizers by the plants. It is possible to obtain high grain crop yields from the fertilizer norms in use at the present time.

The complete use of the available reserves and scientific and engineering achievements serves as a guarantee that the grain fields of Kirghizia will become even more productive and more generous.

7026
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PRODUCTION OF HIGH QUALITY GRAIN CROP SEED IN KIRGHIZ SSR

Frunze SEL'SKOYE KHOZYAYSTVO KIRGIZII in Russian No 9, Sep 83 pp 2-3

/Article: "Gold Fund for the Harvest"/

/Text/ In the decisions handed down during the 26th CPSU Congress and the May and November (1982) plenums of our party's Central Committee and also in the country's Food Program, emphasis is placed upon the fact that a key problem in agriculture is that of achieving an accelerated and stable increase in the production of grain. The task consists of satisfying, during the next few years, the country's increasing requirements for high quality bread and forage grain and of having the state grain reserves and resources required for export purposes.

One important task with regard to further increasing the production of grain is that of creating funds of high quality seed. Here the chief direction to be pursued is the development of plant breeding and seed production operations. Modern and well organized seed production operations can raise cropping power by at least 20 percent.

The most effective means for sharply improving the production of seed consists of concentrating these operations and subsequently converting over to an industrial basis. Sixty specialized seed production kolkhozes and sovkhozes have been created throughout the republic and in practically every rayon in the republic they are supplying high quality seed for the grain growing farms attached to these spetssemkhozes /specialized seed farms/. At the present time, the seed for grain crops is being prepared mainly at mechanized seed cleaning stations in accordance with shorter post-harvest schedules, it is being treated well, stored in ventilated warehouse facilities and subsequently it is being delivered to sowing units. The seed has high productive properties and technological qualities.

Each year almost 1.4 million quintals of cereal grain crop seed is sown throughout the republic and three fourths of this amount is produced at specialized seed farms. Smut diseases have been eliminated for all practical purposes in the grain crop sowings and this has saved many hundreds of tons of bread, forage and seed grain.

In the work of concentrating grain crop seed production operations, definite success has been achieved by the specialized seed production farms in Osh Oblast and in Issyk-Kulskiy, Tyupskiy, Kochkorskiy, Talasskiy, Leninpolskiy,

Chuyskiy, Issyk-Atinskiy, Kantskiy and Alamedinskiy rayons, where high quality seed is being prepared as a rule at spetssemkhozes. Exceptional work has been performed by such spetssemkhozes as the Kolkhoz imeni Lenin in Alamedinskiy Rayon, imeni Kirov in Kantskiy Rayon, 1 Maya in Issyk-Kul'skiy Rayon, imeni 50-Letiya SSSR in Tyupskiy Rayon and Pobeda and Krasnaya Zarya in Leninpol'skiy Rayon, which are systematically obtaining 30-40 quintals of certified seed from each hectare and improving it to the norm for 1st class of the sowing standard.

The quality of the seed has improved considerably. During the 1978-1982 period, only certified seed was sown in the republic. In the process, the more valuable 1st class seed was used for more than 70 percent of the winter grain crops and for more than 50 percent of the spring grain crops. Even during 1982, a very dry year in terms of weather conditions, the kolkhozes and sovkhozes prepared only certified winter grain crop seed for the 1983 crop, with 65 percent being 1st class seed. The farms in Issyk-Atinskiy and Alamedinskiy rayons sowed only 1st class seed. In Issyk-Kul Oblast, they prepared only 1st and 2d class certified seed to satisfy the full requirement for spring sowing, with 71 percent being 1st class seed.

Workers attached to the gosseminspektsiy /state seed inspections/ furnished a great amount of practical and methodological assistance to the republic's kolkhoz and sovkhoz seed producers in the preparation of high quality seed. High skill in the carrying out of seed work and in organizing seed control was demonstrated by the Alamedinskiy, Issyk-Atinskiy, Kochkorskiy, Issyk-Kulskiy rayon gosseminspektsii. The chief of the oblast state seed inspection V. Chumakov proved himself to be a fine organizer of seed production work in Talas Oblast. He is very exacting both of himself and his work comrades and he is very intolerant of even the slightest deviation from the requirements of the sowing standard.

Our work concerned with accelerating the introduction into operations of new and highly productive grain crop varieties has improved considerably. In the process, the strain changing periods have been cut in half. At the present time, new varieties are being introduced into production operations within 3-5 years instead of 8-10 years, as was the case during previous five-year plans. For example, the Krasnovodopadskaya 210 winter wheat variety was introduced into production in just 3 years, Dvuruchki Intensivnaya wheat -- 4 years and the Eritrospermum 80 winter wheat variety bred by the Kirgizskiy NPO /scientific production association/ for farming -- in just 5 years.

The example set in Moskovskiy Rayon is very instructive in this regard. Three years ago the rayon's spetssemkhozes -- kolkhozes imeni Engel's and Krasnyy Oktyabr' -- were supplied with seed for the Eritrospermum 80 winter wheat variety in the form of strain renovation. The seed was grown in rich soil and the cropping power of the grain obtained surpassed that of Bezostaya 1 by more than 5 quintals per hectare, after which other farms willingly procured seed for the new variety. This year the Eritrospermum 80 variety will be planted on more than 90 percent of the rayon's winter crop fields and thus the plan for introducing it into operations has been over-fulfilled to a considerable degree. The Moskovskiy Rayon Agricultural Administration is deserving of credit for having publicized the virtues of the new variety on an extensive scale.

At the same time, the organization of the production of high quality grain crop seed in the republic is troubled by many shortcomings and unfinished work. Moreover, great reserves are available in this work. The party, soviet and agricultural organs in a number of oblasts and rayons view the problems of seed production as being of secondary importance and the parasitical tendencies have still not been overcome. As yet, a solution has still not been found for the problem of ensuring a complete supply of internally produced grain crop seed in Osh Oblast. The best logistical base in the republic for the processing, storage and treatment of seed has been created here at the spetssemkhozes. Nevertheless the agricultural practices employed for the growing of seed are by no means in keeping with the modern requirements. Considerable seed sowing areas are appearing on non-irrigated lands, following grain predecessor crops and as a result they are systematically being written off as losses. As yet, we still do not have a solution for the problem of creating a spetssemkhoz for providing seed for farms in Alayskiy Rayon. Meanwhile, the Minsel'khoz /Ministry of Agriculture/ is receiving an endless flow of requests annually regarding the sale of seed. The requirement for Alayskiy Rayon alone is for 3,000 tons of spring barley seed.

In the final analysis, such a non-labor attitude towards seed production led to a situation in which certified seed was used for only 34 percent of the spring crops sown for this year's harvest in Osh Oblast. The remaining areas were sown in forage grain using non-regionalized varieties imported from Kazakhstan.

The work of concentrating the production of seed for grain crops also in Naryn Oblast was organized in an unsatisfactory manner. Not once did the party, soviet or agricultural organs examine this problem during the course of their work. Thus it comes as no surprise to learn that seed is being produced at spetssemkhozes only in Kochkorskiy Rayon. In the remaining rayons, just as in the past, each kolkhoz and sovkhoz grows its own seed. The work of cleaning and improving the seed to sowing condition continues on the farms right up until April. In the process, a reduction takes place in the productive properties of the seed and this leads to a shortfall in grain yield. For several years now the ZAV-20 seed cleaning units allocated for spetssemkhozes in Tyan-Shanskiy and At-Bashinskiy rayons have been lying outdoors disassembled and unmanned, with no action being taken against the guilty parties.

Specialization in the production of grain crop seed is not being carried out at the proper level in Sokulukskiy and Panfilovskiy rayons. The spetssemkhozes in these rayons as a rule are not carrying through on their seed sales plans or if they do it is only on paper. The spetssemkhozes are not being released from the grain purchasing plans and the seed production installations are being built only after long years have elapsed and then only in a low quality manner. Taking advantage of their close proximity to farms of the Kirghiz NPO for Farming, the kolkhozes and sovkhozes in Sokulukskiy Rayon, with the knowledge of the leadership of this association, are procuring elite and 1st reproduction seed for sowing, thus depriving spetssemkhozes in other rayons of their legal right to acquire this seed, which was originally intended for them. Yes and the Kirghiz Scientific Production Association for Farming is itself tolerating violations in the growing of seed of high reproductions and it is unjustifiably carrying out such sowings on non-irrigated land.

The quivering excitement of a plant breeder as he turns over his new variety for production operations is familiar to all. For he invested his very soul in it and he spared no effort in the interest of increasing its productive strength. It was only recently that the plant breeders at the Kirghiz NPO for Farming created the new Frunzenskaya 60 winter wheat variety. Instead of carrying out seed production work with this variety, as required by the agro-chemical rules, growing it on the best irrigated lands, in rich soil and using low sowing norms in the interest of increasing the coefficient of seed propagation, last year the Kirghiz NPO for Farming sowed Frunzenskaya 60 on hard non-irrigated land at the semkhoz /seed farm/ imeni 50-Letiya SSSR in Sokulukskiy Rayon, where it perished owing to drought conditions. The republic's farmers, who for a long period of time have been awaiting the arrival of this new and highly productive variety, were deprived of seed owing to an irresponsible attitude on the part of the seed growers at the Kirghiz NPO for Farming and thus many tons of grain were lost. It is hoped that the association's management will draw the proper conclusions from this sad incident.

The use of new and better regionalized varieties, which under certain conditions adapt better to the weather conditions, is furnishing rich yields of grain and thus such use is considered to be the obligation of each agronomist. However, this golden rule of a farmer has not become mandatory for all. Some individuals, even responsible rayon leaders, are unjustifiably placing obstacles in the path of the new varieties and hindering their use on an extensive scale. Thus, in Issyk-Atinskiy Rayon, the new and highly productive Eritrospermum 80 winter wheat variety occupies only 6 percent of the winter fields and in Alamedinskiy Rayon -- 21 percent. The farms in Chuyskiy, Kalininskiy and Panfilovskiy rayons have generally rejected the cultivation of another variety of this crop -- Intensivnaya, despite the fact that it is precisely this variety that furnishes a noticeable increase in yield following the harvest of late technical crops. Nevertheless, other varieties are being sown in these rayons which do not endure the winter conditions very well and generally require resowing following losses.

This current year has been an extremely unsuccessful one for farmers in a number of rayons in the Chu River Valley and in Talas Oblast. As a result of lat May frosts, the fertilized pericarps of winter wheat perished over a large area. Tens of thousands of tons of bread and seed grain were lost. Under such complicated conditions, the first obligation of an agronomist is to undertake urgent measures aimed at laying in a seed fund for the winter grain crops, while taking advantage for this purpose of the potential offered by each field and each high grade sowing at each kolkhoz and sovkhoz and improving the seed to a high sowing condition as rapidly as possible. The grain growers in Issyk-Kul Oblast, where an excellent grain yield was obtained, can furnish fraternal assistance in the form of seed to the farmers in the Chu River Valley region and in Talas Oblast.

The party and soviet organs and the oblast and rayon agroindustrial associations must analyze thoroughly the work of the seed production elements in each production subunit, uncover the bottlenecks, reveal the unused reserves in this important sector of work, complete the conversion of seed production for grain crops over to an industrial basis in all areas and ensure the extensive and unhindered movement of new and highly productive varieties out onto the kolkhoz and sovkhoz fields.

This year the sowing of winter grain crops must be carried out on an area of 277,000 hectares. The greatest proportion of the winter crop fields will be occupied by the republic's most productive grain crop -- winter wheat -- 265,000 hectares. The republic requires 58,000 tons of seed for carrying out the sowing work.

The farmers in southern Kirghizia, in Issyk-Atinskiy, Kantskiy and Alamedinskiy rayons have already laid away seed in the required volume and are presently engaged in cleaning it at an accelerated tempo. However, the seed growers in Toktogulskiy, Panfilovskiy and Kalininskiy rayons, owing to frosts, were unable to lay away sufficient seed for satisfying their own requirements. In all, there is a deficit here of more than 3,000 tons of seed.

At the same time, a high yield of winter wheat grain was obtained in the Issyk-Kul Oblast zone. The workers at kolkhozes and sovkhozes in Issyk-Kulskiy, Tyupskiy and Ak-Suyskiy rayons were especially pleased with having obtained high yields of seed grain -- 40 or more quintals per hectare were obtained here.

The task of agricultural organs in rayons where there is a shortage of internally produced seed for sowing purposes consists of organizing, as rapidly as possible, an exchange of ordinary grain for seed grain at spetssemkhozes in Kssyk-Kul Oblast. In the near future the Ministry of Procurements must procure no less than 5,000 tons of winter wheat seed from farms in Issyk-Kul Oblast. These measures will make it possible to lay in seed for the principal sowing fund on all farms throughout the republic and to proceed with the sowing campaign in an organized manner.

Our chief task at the present time is that of sowing the winter grain crops during the optimum periods. And this means creating the prerequisites for ensuring that the fields are generous, thus enabling the republic's grain growers to make a more worthy contribution towards carrying out the Food Program.

CSO: 1824/307

MAJOR CROP PROGRESS AND WEATHER REPORTING

BRIEFS

SEED FOR SPRING SOWING--Kiev--Farmers in the Ukraine are laying a sound foundation for the coming harvest. In Khmelnitskiy Oblast, farm workers have finished quality-control testing of seed for grain and leguminous crops. Almost all of the seed has been upgraded to the highest standard. Specialized brigades and links have been given the responsibility of preparing seed for use on farms of the republic. Working in unison with them are the collectives of more than 40 plants of the "USSR Sortsemprom[Varietal Seed Crop Production Association]". During the season, each of them produces 25-50,000 quintals. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 18 Nov 83 p 1] 9481

EXPANSION OF SORGHUM CROP--Simferopol, 24 Jan 84--No crop can compare to sorghum in terms of drought-resistance. Even under the very dry conditions of last year, many farms of the southern Ukraine realized 60-80 quintals of grain per hectare from the sorghum crop. But the acreage under this crop is nonetheless rather insignificant. Expansion is presently limited by a shortage of seed. Farms find the seed difficult to produce--especially so to preserve. In Crimea, the scientific-production association, "Elita", has refined the cultivation and processing of sorghum seed. They have now finished preparing it, and are in the process of shipping it out to farms in the southern Ukraine. Considering the increased demand for the seed of high-yielding varieties and hybrids of sorghum, the association has made plans to expand the seed-crop acreage this year by an additional thousand hectares. The successful realization of this objective will permit farmers to increase the productivity of their fields. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 25 Jan 84 p 1] 9481

CORN CROP EXPECTATIONS--Odessa, 23 Jan 84--The Kiliyskiy and Tatarbunarskiy Rayons are neighbors. Here, on the one hand, you have the most extensive irrigated fields in the oblast, while on the other hand, the yield per hectare is highly variable. This year, the farmers have decided to pool their efforts to increase the yield of their corn crop. Discussions concerning a socialist competition for this purpose have been concluded. In the Kiliysiy Rayon, they will strive to obtain 41 quintals of corn per hectare. Eighteen links have committed themselves to producing a 100-quintal harvest. Corn growers of the Tatarbunarskiy Rayon have made a commitment to obtain 50 quintals per hectare, while 23 links have promised 100 quintals. [by A. Soldatskiy] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 24 Jan 84 p 1]--Odessa, 25 Jan 84--To produce a million tons of corn in 1984--such is the objective which the farmers of this oblast have set before themselves. The area allotted to this important crop exceeds 300,000 hectares. [By A. Soldatskiy] [Excerpt] [Moscow SEL'SKAYA ZHIZN' in Russian 26 Jan 84 p 1] 9481

UNSEASONABLY WARM WEATHER--Simferopol, 2 Mar 84--Warm weather settled over the Crimean Peninsula during the second half of February. The ground warmed up rapidly, and farm-equipment operators in the Belogorskiy, Simferopol'skiy, Sakskiy and other rayons began working in the fields. The sovkhozes, "Krasnodarskiy," "Druzhba," "Avangard" and other farms proceeded with cultivation and harrowing of the soil, and topdressing of winter crops. Several farms were able to make sowings of leguminous grains, oats and barley. This was a test of strength--a good test of the readiness of Crimean farmers for large-scale planting operations. It showed that the unseasonably warm weather did not take farm-equipment operators by surprise. They are presently continuing field work. [By A. Soldatskiy] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 3 Mar 84 p 1] 9481

HARBINGER OF SPRING--Donetsk--The residents of Donetsk were more than a little surprised to see starlings on the snow-covered streets, parks and squares of their city. The calendar notwithstanding, their spring songs and characteristically complex whistling and chattering were carried on the frosty air of a February day---in the depths of winter. Candidate of Biological Sciences L. Taranenko, a lecturer on the staff of Donetsk State University, points out that such a phenomenon in nature is rather rare, but easily explainable. Deceived by the unusually warm weather prevailing at the end of last year and the beginning of January, the starlings which had been wintering in the southern part of the country returned prematurely to the north. There, they encountered winter winding down, but still carrying plenty of punch. The birds this time had erred in their weather prognosticating. Once again, they had to take wing, overcoming snowstorms and hard frosts, setting a course for warmer climes. [By N. Stolyarov] [Text] [Moscow TRUD in Russian 26 Feb 84 p 4] 9481

REINFORCEMENTS NEEDED FOR IRRIGATION--Odessa Oblast--the scale of irrigation operations in Odessa Oblast increases annually by 10-12,000 hectares, and currently encompasses more than 200,000 hectares. Because of the great importance of the produce obtained from these fields, most of the farms here are giving their undivided attention to preparing for the irrigation season. Production organizations have done a considerable amount of work in replenishing the enclosed water reservoirs before the end of winter. A large part of the overhead irrigation equipment has been fully repaired and serviced. But the situation is still alarming. Will there be a repetition of last year's scene, when a number of farms of the Belyayevskiy, Belgorod-Dnestrovskiy, Izmail'skiy and other rayons had more than half of their overhead irrigation equipment operating on just one shift at the peak of the season? There simply were not enough skilled workers for round-the-clock operations--and this is precisely the kind of time-critical irrigation regime needed for maximal results. Will past miscalculations involving worker training quotas be taken into account? Judging from oblast reports, more than 1500 irrigation farm workers are having their skills upgraded. These are the people who have been working in irrigation systems all along. But where are the necessary reinforcements? The fact is, in order for the overhead irrigation equipment to operate in two shifts, an additional work force of not less than 700 irrigation system operators, mechanics and field workers must be trained. Recently, a rather disturbing and widespread situation has been developing in the repair of pumping stations. There are currently 188 pumping stations in the oblast, operating a total of 843 electric motors. Many of these are either worn out or malfunctioning, but renovation would be impractical. Additional measures are called for. [By A. Soldatskiy] [Excerpts] [Moscow SEL'SKAYA ZHIZN' in Russian 11 Mar 84 p 1] 9481

IRRIGATION SYSTEM READY--Cherkassy--Farmers of Cherkassy Oblast have completed preparations for the new irrigation season. Taking advantage of the sudden warming trend, they have made operational both new and renovated distribution networks, high-power pumping equipment and overhead irrigation systems. Now, irrigation workers, along with links and brigades working in the fields, are equally responsible for the end result of their labor--the harvest. [Text] [Moscow TRUD in Russian 6 Mar 84 p 1] 9481

CSO: 1824/264

REVIEW OF HOG RAISING IN KAZAKHSTAN

Moscow SVINOVODSTVO in Russian No 3, Mar 84 pp 4-7

[Article by V. Krasnoshtanov, director of the Main Administration of Livestock Raising of the Kazakh SSR Ministry of Agriculture: "Hog Raising in Kazakhstan"]

[Text] Kazakhstan has at its disposal great possibilities for sharply increasing agricultural production, especially following the assimilation of virgin and waste lands.

During the last 30 years extensive creative work has been done in our republic on the transformation and economic development of large territories of Kazakhstan. In addition to other branches, hog raising--the most rapidly maturing branch of livestock raising--has been developed extensively.

At the present time in the republic about 700 enterprises are involved in hog raising. In 1983 they produced 2,300 piglets per 100 sows.

Concentration and specialization in hog raising are becoming more and more widely developed. In the republic there are 18 industrial hog raising complexes, including six for 24,000 head and one for 108,000 head. Several other enterprises are in the stage of construction.

In the republic there are many enterprises which achieve a high degree of production effectiveness. Thus, the Ust'-Kamenogorskiy Sovkhoz of Eastern Kazakhstan Oblast in 1983 produced 43,500 piglets and 3,900 tons of weight gain, increasing it by a factor of 2.6 in comparison with 1976 and expending 5.9 quintals of feed units and 6.5 man-hours per quintal of weight gain. Profits from hog raising comprised 2,210,000 rubles with a profit level of 46 percent.

The collective of Kokchetavskiy Sovkhoz, Kokchetav Oblast, which is involved in fattening hogs, expended 5 quintals of feed units per quintal of weight gain and achieved a weight gain of 442 grams daily. Profits equalled 907,000 rubles.

In the Oktyabr'skiy Sovkhoz of the same oblast hog production more than doubled as compared with 1976, expenditures per quintal of weight gain comprised 6.2 quintals of feed units, and 1,179,000 rubles of profit were obtained.

We are constantly dealing with the problem of improving building and perfecting the technology of production in complexes while increasing their effectiveness. At the same time we are giving serious attention to the preservation of the environment, to the creation of cultural-domestic and production conditions for workers, to adding greenery in the surroundings and to the development of cleaning facilities and storehouses for manure.

At the contemporary level one of the most important questions is that of the comprehensive mechanization of production processes. In the republic as a whole providing water for animals and manure removal are 90 percent mechanized on farms; feed distribution--67 percent mechanized.

It is necessary for us to give more attention to the intensification of the branch, to improving the utilization of the reproductive herd, to the introduction of artificial insemination and to obtaining the largest number of piglets per sow. We have many collectives which achieve significant successes. Thus, in 1983 in the enterprises of Alma-Ata Oblast there were 1.8 farrows per sow; in East Kazakhstan Oblast--1.7; and in the Kazakhstanets Breeding Plant of Kustanay Oblast--1.9 farrows per sow. The Breeding Sovkhoz imeni V. I. Lenin of Semipalatinsk Oblast has been obtaining 1.7 farrows per sow for 4 years in a row, with 10-10.2 piglets per farrow.

Hero of Socialist Labor M. I. Kirilonko has been working in the Sovetskiy Sovkhoz of North Kazakhstan Oblast for 25 years. The weight of piglets raised by him at weaning exceeds 17 kilograms. Swineherd I. D. Shnayder of the Iliyskiy Sovkhoz of Alma-Ata Oblast does excellent work. Last year she raised over 900 piglets with an average weight of 18 kilograms.

Our task is to produce 1.7-1.8 farrows per year per sow, with no fewer than 8-9 piglets per farrow.

An important problem is the efficient raising and fattening of young and the more efficient utilization of feed. It is important for us to achieve the goal of increasing the average weight of hogs submitted for meat to 120 kilograms, and the average daily weight gain per animal to 450-600 grams, with expenditures per quintal of weight gain of no more than 6 quintals of feed units.

We have many enterprises which achieve satisfactory weight gains while expending a relatively small quantity of feed. Thus, the complexes of the Kokchetavskiy Sovkhoz of Kokchetav Oblast and the Ust'-Kamenskiy Sovkhoz of East Kazakhstan Oblast already achieve an average daily weight gain of 600 grams with some groups of animals, with an expenditure of about 5 quintals of feed units per quintal of weight gain.

The feed base is an important factor in the development of hog raising. In many enterprises involved in hog raising, even those which specialize, it lags behind the needs of the day. Succulent feeds are used inadequately.

The presence of serious shortcomings in the feeding of animals results in low average daily weight gains, a lengthening of the fattening schedule, an overconsumption of feed and an increase in the cost of pork.

It has been proven that the rations of hogs can include up to 30 percent succulent and green fodder and still be nutritious. We have enterprises in which the use of succulent fodder is adequately organized.

Thus, in the Sovkhoz imeni Maylin of Kustanay Oblast and in the 30 Let Kazakhstana Kolkhoz of Pavlodar Oblast up to 5 tons of mixed silage are procured annually per sow. But unfortunately in the majority of enterprises there is a shortage of succulent and green fodder in the rations of hogs not only during the winter period but even in the summer as well. In hog raising the proportion of concentrated feeds comprised 84 percent; succulent and green--only 8 percent.

At the present time many enterprises have begun to pay more attention to storing mixed silage. In the republic as a whole in 1983 262,000 tons of mixed silage were procured; this is somewhat more than in 1982, but extremely inadequate.

Most of such silage (170,000 tons) was procured in the enterprises of Kokchetav Oblast; 16,000-17,000 tons were procured in each of Pavlodar, Semipalatinsk and Alma-Ata oblasts.

The basic raw material for preparing mixed silage is the root and tuber crops--sugar and feed beets, potatoes, carrots, annual and perennial legumes, corn at the milky-wax stage of ripeness and grain wastes.

Work is being done to improve the productivity of feed crops and to increase the cultivation and use in hog raising of barley, peas, alfalfa, clover, potatoes and other crops. In order to implement the most effective utilization of concentrated feeds work is being done in the sovkhozes and kolkhozes of the republic to produce their own mixed fodder. In 170 plants and shops that produce mixed fodder with a total capacity of 1.3 million tons, in 1983 1.2 million tons were produced, or 80 percent of capacity.

Food wastes are an important source for replenishing feed supplies. In the republic there are 19 cost-accounting offices for their collection and use. In 1982 555,600 tons of wastes were collected; in 9 months of 1983--420,700 tons. Food wastes in prepared form are fed to hogs in 120 enterprises. The work to procure and prepare food wastes is fairly well organized in North Kazakhstan Oblast, where 100-110 kilograms are collected per capita. However, in many oblasts this important source for replenishing feed supplies is utilized not fully by far. We are giving serious attention to preparing feed for feeding. In increasing the effectiveness of pork production the role of breeding work in hog raising is considerable. In the republic there is one breeding enterprise--Kazakhstanets, six breeding sovkhozes and 55 breeding farms. Many pedigree enterprises and farms have developed herds of hogs having a high genetic potential and good adaptive qualities with regard to local natural and climatic conditions. The main plan breed is the Large White.

The republic's breeders have developed a Semirechensk breed of hogs which is being successfully utilized in inter-breed crossbreeding. Other breeds imported into the republic's enterprises are also used for producing hybrid young. In 1982 690,000 piglets were produced from inter-breed crossbreeding.

The directors and specialists of hog-raising enterprises are convinced that polycarpousness during industrial crossbreeding increases by 5-7 percent, the average daily weight gain--by 8-10 percent, especially during fattening, and the effectiveness of utilizing feeds--by 3-5 percent. Thus, the utilization of industrial crossbreeding and hybridization on the scale of the republic will enable us to obtain a significant quantity of meat without additional expenditures of mixed fodder that is in short supply.

In order to expand the utilization of industrial crossbreeding in hog raising work is being done to improve the introduction of the zonal system for reproduction and hybridization. In implementing this work it is planned to significantly improve the organization of artificial insemination, which will increase the effectiveness of utilizing high-class boar sires.

The flow system of production is becoming more and more important in the development of livestock raising. The basis for this system is the more efficient organization of production and the introduction of new technology. This system enables us to uniformly employ facilities and people and to more rhythmically manage pork production throughout the year. It is used in commodity as well as breeding enterprises.

In our republic the flow system has been introduced in all hog raising complexes and in many large hog raising enterprises. It has brought order to and allowed for a more effective utilization of the existing hog raising facilities. The upkeep of hogs in homogenous groups following uniform technological processes on every plot has allowed us to raise labor productivity and to increase the load per operator in a farrowing shop to 50-60 suckling pigs with piglets while caring for up to 600 weaned piglets and up to 1,200 head being fattened.

We are giving a great deal of attention to improving working and living conditions for hog farmers, to moving to two-shift work and to introducing brigade detachments.

By including themselves in all-union socialist competition for the organized completion of the overwintering of cattle, for increasing production and for increasing the quantity of livestock products submitted to the state, the workers of livestock-raising farms are taking measures to improve the organization of reproducing and raising young agricultural animals, of fattening livestock and of producing milk during the winter period.

8228
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RSFSR AGRICULTURAL PLANS FOR 1984 REVIEWED

Krasnodar SEL'SKIYE ZORI in Russian No 1, Jan 84 pp 1-2

/Lead article: "Fourth Year of the Five-Year Plan"/

/Text/ Our Soviet people greeted the new year of 1984 -- the 4th year of the Eleventh Five-Year Plan -- with a feeling of just pride in their glorious accomplishments and confidence in the future. The words of the new year's greeting addressed to the Soviet people by the CPSU Central Committee, the Presidium of the USSR and the USSR Council of Ministers aroused a warm response in each one of us. This greeting expressed heartfelt gratitude to all those who worked earnestly in behalf of the common good and in the interest of multiplying the material and spiritual values of the socialist homeland.

As a result of tense and fruitful labor on the part of our Soviet people and the consistent implementation of the party's program aimed at utilizing more efficiently the opportunities and advantages offered by developed socialism, our country achieved noticeable progress last year in all aspects of economic and cultural construction. An acceleration took place in the rates of growth in public production, labor productivity increased and social tasks are being solved in a steady manner.

Much was accomplished during 1983. But we must strive to attain even higher goals and carry out in a more active manner the large-scale tasks set forth during the 26th party congress and subsequent plenums of the CPSU Central Committee. The December (1983) Plenum of the CPSU Central Committee and the 9th Session of the USSR Supreme Soviet have provided the Soviet people with a specific and scientifically sound program of action for the coming year.

In the text of his speech delivered before the plenum of the CPSU Central Committee, Comrade Yu.V. Andropov noted that a most important consideration today is that of not losing the tempo already developed, starting off well during the very first days of the new year and to adjusting to increased tension in carrying out the work, making no allowances for the difficulties of which there will be many in the future.

The speech by Yuriy Vladimirovich Andropov is an important political document and one which reflects the social and economic policies of the party and Soviet State during this modern stage. The plenum unanimously approved and supported the profound evaluations and conclusions contained in this speech, concerning

the principal trends to be followed for achieving further national economic development. In addition, it pointed out that the solving of the urgent current and long-range economic tasks advanced by Comrade Yu.V. Andropov must serve as the foundation for work by the entire party, all soviet and economic organs, social organizations and labor collectives and become an important obligation of each communist.

The Plenum of the CPSU Central Committee approved for the most part the draft State Plan for the Economic and Social Development of the USSR and the draft State Budget of the USSR for 1984. These were discussed and approved during a session of the USSR Supreme Soviet. The plan and the budget conform to the party's economic strategy and serve the basic interests of the Soviet people.

The plans for the year that has just commenced call for an increase in national income, used for consumption and savings, in the amount of 15 billion rubles or 3.1 percent. This entire amount will be used for raising the standard of living of the people. The plan outlines a broad range of measures for improving the welfare of our Soviet people.

The implementation of the Food Program advanced by the party has become a truly national and all-state affair. Last year, despite the unfavorable weather conditions, the workers attached to the agroindustrial complex produced and delivered to the country more farming and animal husbandry products than was the case the previous year. The increase in output amounted to 4.6 billion rubles worth or 3.6 percent. Compared to 1982, greater quantities of grain, potatoes, sugar beets, vegetables, fruit and tea leaves were procured. Increases also took place in the purchases of milk, meat and eggs.

During the third year of the five-year plan, the kolkhozes and sovkhozes in our zones made a worthy contribution towards implementation of the Food Program. All five oblasts in the central chernozem zone fulfilled their grain purchase plans, having laid away more than 5 million tons in the granaries of the homeland. The grain growers in the North Osetian ASSR and the Kabardino-Balkar ASSR and also in Dagestan ASSR also fulfilled their first obligation to the state. The Belgorod beet growers also succeeded in fulfilling their socialist obligations.

Special satisfaction was drawn from the fact that for the very first time in recent years noticeable improvements were achieved in the development of animal husbandry. The agricultural workers in the Russian Federation successfully fulfilled their plans for selling all types of animal husbandry products to the state, surpassing in the process the actual procurements of livestock and poultry for the previous year by 10 percent, milk -- by 9 and eggs and wool -- by 3 percent. These results embody a considerable portion of products produced by farms and complexes of kolkhozes and sovkhozes in the north Caucasus and central chernozem zone. The farms in Krasnodar Kray supplied the procurement points and processing enterprises with 452,000 tons of poultry and livestock, 1,365,000 tons of milk, 989 million eggs and 1,893 tons of wool. In Stavropol Kray, 279,000 tons of livestock and poultry, 644,000 tons of milk, 567 million eggs and 15,458 tons of wool were procured. The livestock breeders in Lipetsk Oblast supplied the state with 117,000 tons of livestock and poultry, 417,000 tons of milk, 297 million eggs and 412 tons of wool. This

oblast and both krays fulfilled their plans and socialist obligations for purchases of animal husbandry products. The farms and remaining oblasts in the central chernozem zone and also the livestock breeders in the Don River region and the Chechen-Ingush ASSR coped successfully with their plans.

All of this is making it possible to expect further changes for the better in the production of food goods during this current year. The agricultural workers and the entire agroindustrial complex are fully resolved to intensify steadily the efforts directed towards carrying out the Food Program, raising the cropping power of the fields and the productivity of animal husbandry. This year they must raise the country's volume of gross agricultural output to 140.4 billion rubles worth, or more than last year by 8.4 billion rubles. The plans call for this entire increase to be achieved by raising labor productivity, which must be increased by 8.5 percent in agriculture (public sector).

The planned conversion of agricultural production over to a broad industrial base will be continued, with the plans calling for a further strengthening of its logistical base. For the purpose of multiplying the fertility of the fields, the farmers will be supplied with 23.3 million tons of mineral fertilizers (in a conversion for 100 percent nutrients) and 575,000 tons of standard units of chemical agents for protecting plants.

In connection with the further development of agricultural production and the creation of a guaranteed food fund, great importance is being attached to the decision handed down by the Politburo of the CPSU Central Committee concerning the development of a long-term program for land reclamation, which was adopted in September 1983. At the present time, all of the cotton and rice, almost three fourths of the vegetables, approximately one half of the fruit and grapes and one fourth of the coarse and succulent feeds are being cultivated on restored fields. This year, 10.2 billion rubles are being allocated for the carrying out of land reclamation work. This will make it possible to introduce into operations 666,000 hectares of irrigated land, 700,000 hectares of drained land and 4.65 million hectares of watered pastures. By the end of the year, the overall area of such lands will reach 34 million hectares. There are many such lands in our regions, but unfortunately not all of them are being utilized in an efficient manner. All measures must be undertaken to ensure that each irrigated and drained hectare is included in intensive production operations and produces high and stable yields.

This year the plans call for more than 38 billion rubles worth of capital investments to be made available for agricultural development throughout the country and for an entire complex of operations.

The scales for socialist reconstruction of the rural areas and housing and cultural-domestic construction being carried out in the countryside are increasing at leading rates. We have many examples in both regions. This year, 5.6 billion rubles worth of state capital investments are being allocated for these purposes throughout the country. This amount is 9 percent greater than the figure for 1983 and almost 3 percent more than the figure called for for this year in the five-year plan.

Measures aimed at strengthening the kolkhoz and sovkhoz economies and also the material stimulation of agriculture, as called for during the May (1982) Plenum of the CPSU Central Committee, are being carried out in full volume. Since the beginning of 1983, more than 20 billion rubles have been appropriated for these purposes. The plan and budget for this year calls for a further expansion of stimulation for this branch.

The country is expending large amounts for the purpose of creating a fine social-economic atmosphere in the rural areas. And the very first obligation of agricultural workers and all enterprises of the agroindustrial complex is that of decisively improving the use of the production potential already created and also the tremendous resources recently made available by the state for completely solving the problem of supplying the population with food products.

It is with a great amount of political and labor enthusiasm that our homeland is preparing for the elections to the USSR Supreme Soviet, 11th Convocation. This important political event will undoubtedly serve as new and convincing proof of the flourishing of socialist democracy and as a bright manifestation of monolithic solidarity of all of the Soviet people around the party of the great Lenin and of the loyalty of the Soviet people to the ideals of communism.

The workers attached to the agroindustrial complex in the northern Caucasus and the central chernozem zone, similar to all workers throughout the country, are expanding with each passing day the socialist competition aimed at fulfilling and over-fulfilling the plan for 1984 and the tasks of the five-year plan as a whole and achieving high production indicators. The labor collectives have undertaken, as a most important task of the party, a specific task assigned by Comrade Yu. V. Andropov -- to achieve an above-plan increase of 1 percent in labor productivity and to lower production costs by an additional 0.5 percent. In the Don River region, the workers at the Zernograd Kolkhoz imeni Lenin resolved to raise their labor productivity by 3.5 percent, to raise the production output per worker to 8,500 rubles and to lower the production cost for a quintal of output by 3-5 percent compared to the planned figure. The collective at the Kolkhoz imeni Frunze in Belovskiy Rayon, Kursk Oblast vowed to raise labor productivity by 8 percent and in this manner to obtain 178,000 additional rubles worth of output. Here the output production costs will be lowered by 5 percent -- as a result, profits will be increased by 75,000 rubles.

In striving to take one more step towards increasing the production of field and farm products, the rural workers are concentrating their efforts on the successful wintering of the livestock and on spring sowing. They are well aware that under the conditions imposed by a sharply aggravated international situation, caused by the imperialist circles, the strict fulfillment of planned tasks and conscientious and highly productive labor -- do not simply constitute an obligation, but rather a patriotic duty on the part of each labor collective and each Soviet individual.

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UDC 631.1

PROGRAM FOR RAISING PRODUCTION EFFICIENCY DISCUSSED

Krasnodar SEL'SKIYE ZORI in Russian No 1, Jan 84 pp 3-8

/Article by P. Mironov, chief of the Main Production Administration for the North Caucasus Region of the RSFSR Ministry of Agriculture: "Program -- For Raising Production Efficiency"/

/Text/ With a vast production and scientific-technical potential at their disposal, the agricultural workers in our zone have commenced carrying out the Food Program approved during the May (1982) Plenum of the CPSU Central Committee. Over the past 7 years alone, the region's agriculture has been supplied with 10.8 billion rubles worth of capital investments and by the end of the 10th Five-Year Plan the value of the fixed productive capital of an agricultural nature exceeded the 1965 level by a factor of 3.3. The animal husbandry facilities have been restored by 78-79 percent.

The social reconstruction of the countryside is being carried out on an extensive scale and the value of the fixed non-productive capital increased by a factor of 1.9 over the course of a decade. During the years of the 10th Five-Year Plan, approximately 2 million square meters of housing space, or 34 apartments per sovkhoz, were placed in operation at sovkhozes throughout the zone. During this period the housing space at kolkhozes increased by 1 million square meters. There are presently more than 100,000 billets at pre-school institutes of kolkhozes and sovkhozes -- more by a factor of three than the figure for 15 years ago. For all practical purposes, a new public catering network has been created and an increase has taken place in the extent of the network of roads, with improvements being realized in the quality of the roads.

Over the past 15 years, the kolkhozes and sovkhozes have been supplied with increasing amounts of improved types of equipment and this has raised considerably the level of mechanization out on the fields and farms. By the beginning of 1983, the power engineering capability in the zone had increased by a factor of 2.7. At the present time, the horsepower level per worker is 30.7.

Land reclamation work and the use of chemical processes on the land are being carried out at rapid rates. In 1982 the deliveries of mineral fertilizers were raised to 1,387,000 tons, or an increase of twofold compared to 1965. Over a period of three five-year plans, 1,086,000 hectares of irrigated land were placed in operation. This represented 60 percent of all such land in the zone.

Economic and organizational measures undertaken by the party and state for the purpose of strengthening the logistical base of the rural areas have stimulated an improvement in the culture of farming and animal husbandry and the introduction of more productive varieties of agricultural crops and industrial technologies. This has produced an increase in the production of goods: field crop husbandry -- by 53, animal husbandry -- by 44 percent compared to the average annual indicators for the 1961-1965 period. For example, grain production increased by 35.5, sugar beets -- by 58, vegetables -- by 86, fruit and berries -- by a factor of 3.7 and sales in these products -- by 26 and 55 percent and by factors of 2.7 and 4.2 respectively.

Growth in the production of farming products has proceeded mainly on the basis of raised yields (the sowing areas remained stable for the most part). Over a period of 15 years, the cropping power of grain crops was raised by 7, sugar beets -- by 117, potatoes -- by 23, vegetables -- by 36 and fruit -- by 23.8 quintals.

Specialization in the production of feed and its establishment as an independent branch have brought about considerable changes: increases have taken place in the procurements of all types of feed and the quality of the feed has improved. Improved support in the form of feed, combined with a strengthening of the logistical base, specialization, concentration and the introduction of progressive technologies, has had an effect on the production rates for farms and complexes. Compared to the 7th Five-Year Plan, the average annual production of meat during the 10th Five-Year Plan increased by 432,000 tons, milk -- by 1,236,000 tons, eggs -- by 1,492,0000,000 and wool -- by 8,731 tons. The sale of these products by all categories of farms increased by 38-39 percent.

During the years of the 11th Five-Year Plan, which were directly associated with implementation of the Food Program, a forward step was taken: an increase was achieved in the production and sale to the state of many types of products. In 1983, for example, the tasks for purchasing grain and the plans for selling potatoes, fruit, berries, milk and eggs to the state were fulfilled and greater quantities of vegetables, meat and wool were sold.

At the same time, it bears mentioning that the the rates for production growth continue to remain inadequate, with the vast resources being made available for agricultural development failing to produce the proper return.

Special concern is being aroused over a deterioriation in the economic indicators at many kolkhozes and sovkhozes. Output expenses are increasing at higher rates than the production of such output. In 1982, for example, the grain harvest for the zone as a whole increased by only 1 percent compared to the figure for 1976 and the expenses for producing the grain -- by 38 percent. Moreover, the increase in grain obtained in Rostov Oblast and in the Dagestan and Checheno-Ingush ASSR's was less than 18-20 percent and the labor and resource expenditures for producing it -- more than 25-28 percent. Similar situations prevailed with regard to the production of potatoes, milk and other products. On the whole, gross agricultural production in the zone increased by only 3 percent and expenditures -- by 24 percent.

The excessive growth in expenses compared to the rates of growth for production resulted in an increase in production costs and a reduction in profitability

for the principal branches. The production costs for grain at sovkhozes in the zone exceeded the level for 1975 by 27 percent, potatoes -- by a factor of 1.6, the increase in weight in cattle -- by 34-38 percent, wool -- by 38-49 percent. And the undesirable result -- unprofitable operations by the branches and by many farms on the whole. In particular, a grave situation developed in Rostov Oblast. Instead of the annual average of 19.1 million rubles worth of net income obtained here during the years of the 10th Five-Year Plan, the year 1982 was completed with a loss of almost 230 million rubles. Losses also increased in the North Osetian and Checheno-Ingush ASSR's. Fifty five percent of all farms in the zone turned out to be unprofitable operations. Only the kolkhozes and sovkhozes in Krasnodar and Stavropol Krays completed this year with a profit, but even here the profitability level decreased compared to the 1976-1980 period.

The unprofitable operations of many farms led to a situation wherein the principal portion of the production expenses and expenses for capital investments were carried out using credit extended by Gosbank, credit which was not returned in a timely manner and thus the loan indebtedness of the farms increased sharply.

There were objective factors which beyond any doubt exerted an adverse effect on the economic status of the kolkhozes and sovkhozes: rise in costs for industrial products, construction, increase in the amounts for insurance payments and others. In 1982, more than 60 percent of all increases in costs were for industrial goods required for the production of agricultural products. During the May (1982) Plenum of the CPSU Central Committee, it was mentioned that the purchase prices were no longer conforming to the required production expenditures, that they were no longer serving in the role of economic levers and that such categories as price, profit and credit were no longer stimulating growth in production.

The party and government have adopted large-scale measures aimed at improving the economic mechanism and strengthening the kolkhoz and sovkhoz economies. I have in mind first of all raising the purchase prices for cattle, swine, sheep, milk, grain, sugar beets, potatoes, vegetables and other agricultural products, the introduction of bonuses for adding on to the purchase prices for products sold to the state by low-profitability and unprofitable kolkhozes and sovkhozes and providing those kolkhozes which lack sufficient fixed capital and which do not have internal capital resources available for expanding production with a system for financing, using state budgetary funds, the construction of housing and installations of a socio-cultural and domestic nature, roads, the maintenance of kindergartens, young pioneer camps, cultural-educational institutes and insurance payments. Approximately 1.5 billion rubles were appropriated for the purpose of raising the purchase prices (obviously assuming fulfillment of the plan) and for adding on bonuses to these prices for low-profitability and unprofitable kolkhozes and sovkhozes. In addition, 223 million rubles were assigned from the budget for economically weak and unprofitable kolkhozes. Approximately 600 million rubles worth of kolkhoz and sovkhoz Gosbank loan indebtedness was written off and payments for 740 million rubles worth deferred. This must make it possible not only to carry out production operations without losses but also to realize definite savings for expanded reproduction using internal resources for the most part.

In order to make the best use of assistance furnished by the state, the local soviet and agricultural organs studied very thoroughly the economics underlying the production of each crop and all types of farm products and their profitability level for each farm, they uncovered low-profitability and unprofitable types of products and farms on the whole and they determined the amount of funds required for raising prices and the bonuses, by types of products, required for ensuring profitable operations. The recommendations received from the krays, oblasts, autonomous republics and others were adopted for the most part and in accordance with computations by the zone's economists they must be carried out in 1983 with a profit.

Based upon preliminary data, 456 sovkhozes or two thirds of all farms of this type will earn profits of not less than 103.6 million rubles. Roughly 990 kolkhozes will operate on a profitable basis. At the same time, 258 sovkhozes and 239 kolkhozes will remain unprofitable. There are many such farms in the Don River region and in the Checheno-Ingush ASSR, where the output production costs have turned out to be considerably higher than planned and the shortfalls in field and farm products amount to considerable sums. Beyond any doubt, the farm economies were substantially affected by the unfoavorable weather (a drought in the autumn of 1982 and the spring and summer of 1983). But the entire shortfall in output cannot be blamed on this unfavorable weather. The results of economic-financial operations are greatly dependent upon the level of organization for production and labor, the forms and methods employed in managing the collectives, the maturity of the specialists, their ability to display flexibility in a particular situation and upon their ability to direct the actions, initiative and studies of the farmers in behalf of the same goal -- a high final result: the harvest. A different approach was employed for the components of high soil fertility, all of which were checked by science and practical experience.

Allow me to discuss this fact in somewhat greater detail.

The development of farming systems in the region, rayons and on the farms is proceeding at a slow pace. The foundation for these systems -- crop rotation plans -- which by no means have been developed in all areas. They have not even been introduced into operations on 830 farms. And this means that 1.8 million hectares of arable land (11 percent) are not included in crop rotation plans. In the Dagestan ASSR, crop rotation plans have been introduced into operations only on 25 percent of the arable land and in the Checheno-Ingush ASSR -- on 60 percent.

Such a situation cannot be explained by any objective factors. The right to plan the areas under crops has been extended directly to the kolkhozes and sovkhozes. It would seem that these specialists are under an obligation to define the structure of these sowings in conformity with the crop rotation plans and the agricultural organs and RAPO /rayon agroindustrial association/ leaders and specialists -- to exercise better control over the planning and distribution of the crops on the fields of a crop rotation plan.

A second important element -- the system of fertilizers -- is not included in the work. The humus content in the soil is decreasing in a systematic manner and there are fewer nutrients. Thus the agrophysical properties of the entire

soil profile are deteriorating. A considerable portion of the biomass in the form of grain, tubers, straw and so forth is being removed from the arable land and it is not being returned to the fields in the form of organic material. And our task, as emphasized by the well known soil scientist V.R. Vil'yams, is to leave the land for our descendants in more fertile condition than we have it at the present time.

This global task can be solved through the accumulation and efficient use of organic and mineral fertilizers. Although the deliveries of mineral fertilizers to the zone have increased considerably, the farms nevertheless are still being supplied with insufficient amounts: an average of not more than 65-70 kilograms of active agent is being applied per hectare of arable land and in the Don River region -- less than 40 and in Stavropol Kray -- not more than 60 kilograms.

There is one solution: utilize in an efficient manner those mineral fertilizers which are placed at the disposal of the kolkhozes and sovkhozes and obtain the greatest return from them by applying them to the rows during the sowing of cereal grain crops and during the cultivation, using an industrial technology, of corn, sugar beets and sunflowers. Unfortunately, the winter grain crops for the 1983 harvest were sown with mineral fertilizer being applied to the rows on only 71 percent of all of the areas and spring grain crops -- on 74 percent of the areas. This agricultural method is being employed least of all in Stavropol Kray and the Checheno-Ingush ASSR (on 50-56 and 67-75 percent of the areas respectively). A zonal average of only 137 kilograms of mineral fertilizer in active agent (instead of a norm of 400 kg) is being applied in behalf of corn for grain being cultivated according to an industrial technology and in Rostov Oblast even less -- 120 kilograms. Even worse is the fact that no mineral fertilizer whatsoever is being applied to almost 90,000 hectares to be used for grain corn. This constitutes one reason for the low cropping power. In 1982, for example, the plans called for 60 quintals of grain to be obtained from each hectare of industrial plantation in the zone and yet only 39.5 quintals were obtained and in Stavropol Kray and the Dagestan and Checheno-Ingush ASSR's -- 30 quintals. The increase in sugar beet cropping power called for in the technology has not been achieved. This also holds true for potatoes and soybeans. The growth in the productivity of sunflower sowings has been quite negligible (+3.3 quintals per hectare).

Despite the increase in the volumes of organic fertilizer applied, their participation in stabilizing the humus content in the soil has also not been very great. A hectare of arable land is supplied with an average of not more than 4.2 tons of organic material -- less than the amount required by a factor of 2.5-3. And compared to farms in Krasnodar Kray where 6.5 tons of farmyard manure are being applied per hectare, in the Checheno-Ingush ASSR -- only 2.9 tons. Less than 4 tons of local fertilizers are being applied per hectare of arable land on kolkhozes and sovkhozes in Stavropol Kray and in the Dagestan and Kabardino-Balkar ASSR's. In the Don River region, no organic fertilizer was applied to 20 percent of the fallow land and an average of not more than 19 tons was applied per hectare to the remaining area of fallow land. In those areas where the fallow fields were given the proper quantities of organic material, 38.1 quintals of winter wheat were obtained per hectare in 1982 -- 10.3 quintals more than the average for the oblast.

Organic fertilizer is being applied in an unsystematic manner and in insufficient amounts during the principal soil cultivation operation. During autumn plowing, from 18.9 to 35 percent of the overall volume of this fertilizer is being applied. At the same time, organic fertilizer is being applied extensively in a superficial manner and by eye and the rules for the storage of farmyard manure are being violated, as a result of which large amounts of plant nutrients are being lost.

Many agrotechnical mistakes are being tolerated on the farms during the course of preparing the soil for sowing and during the sowing and harvesting of the crops (the schedules are not being adhered to and the entire complex of operations is not being carried out), land reclamation improvements (gypsuming) of solonetz soils have been organized in a very weak manner and also the protection of soils against wind and water erosion (soil-protective measures are being carried out over small areas and without the desired results).

Many shortcomings are being noted in the use of irrigated lands, which occupy 11 percent of the zone's arable land. True, they supply the region with 100 percent of the rice, 19 percent of the grain corn, 55 percent of the vegetables and many other products. But the potential of irrigated arable land is much greater. Growth in the productivity of such land is being held up by defects in the irrigation systems themselves, poor leveling off of the areas, failure to observe the norms for watering, weak fertilization and by the unjustified rejection of the watering of roughly 155,000 hectares of irrigated lands.

Urgent measures are required for improving public animal husbandry operations and raising the economic efficiency of the branch. Unfortunately, it is continuing to remain unprofitable and one of the chief reasons for this is the low productivity of the herds. The milk yields of the cows are practically at the same level as those for 1970 and do not exceed 2,200 kilograms per year. Moreover, at 426 of the kolkhozes and sovkhozes, almost one fifth of all of the farms, the milk yields are less than 1,600 kilograms. This is explained by a low level of zootechnical work in connection with reproduction of a herd, unsystematic raising of heifers, high degree of barrenness in the cows, low-value feeding for the animals and young stock losses. At more than 600 kolkhozes and sovkhozes, that is, almost one out of every three farms, only 70 calves are being obtained per 100 cows and at more than 300 farms -- less than 60. It is completely obvious that such a shortfall in offspring cannot be compensated even by high productivity.

The rayon agroindustrial associations have not undertaken to achieve a true solution for the meat problem. The 10th Five-Year Plan did not produce any changes for the better in meat production, nor have substantial changes taken place during the current five-year plan. The plans for the sale of meat to the state during the 1981-1982 period remained unfulfilled, with the indebtedness amounting to 135,000 tons. Nor was this deficit made up last year. The hindrance here was low animal productivity during fattening. Over the past 7 years, the average daily weight gain for the cattle was not more than 450 grams (gilts furnish high weight increases on leading farms) and the daily weight increase for swine fell to 285 grams. Extensive fattening leads to a dragging out of the schedules established for raising the animals and also to considerable overexpenditures of feed. In 1982, the average length of time for

raising cattle was 37 months and, notwithstanding this fact, the average delivery weight for the cattle did not exceed 315 kilograms. On farms in Rostov Oblast, these indicators equalled 45 months and 300 kilograms. An average of 17 months is required on farms throughout the zone for the raising and fattening of swine to a weight of 100 kilograms. The low productivity is accompanied by high feed expenditures, growth in the proportion of concentrates in the feed, by increases in the costs of the products and by a reduction in production profitability.

The unsatisfactory use of brood stock and hence the failure to obtain sufficient young stock, the extensive fattening methods and cattle losses have produced still another negative phenomenon. In striving to augment their meat resources, the kolkhozes and sovkhozes are resorting to the purchasing of greater quantities of cattle, quite often at inflated prices. In the process, they are spending tremendous amounts of money and sustaining losses. In 1982 alone, 117 million rubles were spent for the purpose of purchasing 200,000 head of cattle, more than 90,000 swine and 146,000 sheep from the population. In the Checheno-Ingush ASSR, 41.5 percent of the cattle turned over to the state were purchased in this manner and in the North Osetian ASSR -- 53.5 percent.

Animal husbandry can develop successfully if a special purpose and all-round approach is employed for the branch and particularly for feed production. Despite the fact that more feed is now being produced than has been the case in past years, the overall quantities are still insufficient. Not more than 16.3 quintals of feed units in the form of coarse and succulent feeds are available per standard head of cattle each year on farms throughout the zone and during the wintering campaign -- not more than 10-11. Here the restraining factors are -- low cropping power for the forage crops, imperfections in the forage fields, an increase in annual grasses at the expense of perennial grasses, inability and lack of desire to grow food roots and feed losses during procurement operations. Allow me to cite just one example. Last year only 275 silage towers were filled and 302 others, also in good operating condition, were not used whatsoever. And we would add that approximately another 300 defective towers remained in reserve. Almost 40 million rubles have already been expended in the zone for the erection of haylage towers and their KPD /efficiency factor/ continues to remain extremely low.

The farms in the north Caucasus are sustaining tremendous losses from the inefficient use of fixed capital. During 1982 alone, they acquired 505 million rubles worth of various types of equipment. Each year the expenses for maintaining the machine-tractor pool exceed 360 million rubles. Amortization deductions and current expenditures constitute a heavy burden with regard to output production costs. At the same time, many items of equipment are lying idle mainly owing to technical reasons and this too is causing the farms to suffer great losses. In 1982 the idle time of tractors exceeded 10.2 million tractor-days (3.7 million caused by technical reasons). Last year these losses were somewhat less. Owing to the absence of an adequate number of machine operators, the tractors are for all practical purposes being employed in one shift.

On many farms, poor use is being made of the equipment that is being obtained. Each year the tasks for placing such equipment in operation are not being

fulfilled: during the first 6 months of last year, only 14 percent of this equipment was placed in operation. Many types of equipment lie inactive for years. For example, it was 6 years ago that the Predgornyy Sovkhoz in Stavropol Kray acquired the Karusel' milking unit. It still has not been installed. A powerful gas dryer has been lying inactive since 1974 at the Sovkhoz imeni K. Marks. Many similar examples could be cited for other regions.

In connection with the rise in the cost of construction work, tremendous amounts of money are being spent each year for the erection of animal husbandry facilities. In 1983, 291 million rubles were expended for this purpose. At the same time, many existing buildings are not being used for the livestock. For example, on 1 January 1983 there were more than 440,000 empty cattle billets at kolkhozes and more than 1,337,000 empty swine billets; this amounted to 13 and 36 percent respectively. At sovkhozes, 13.5 percent of the cattle billets remained empty and 35 percent of the swine billets. Even the industrial complexes at a number of farms are still not completely staffed with animals. And since the buildings remain on the farm balances, they continue to be subject to wear and tear and the amortization costs are applied to the output production costs. The RAPO /rayon agroindustrial association/ and farm leaders must be held strictly accountable for this mismanagement and in the future the trends in the use of capital investments must be planned in a very thorough manner. Construction work must be carried out in those areas where there is truly a need for it, not where there are already empty buildings. More resources must be allocated for the modernization of existing facilities.

The kolkhozes and sovkhozes are failing to receive large sums of money as a result of the low quality of the products they are supplying. Almost annually the overall losses from the sale of such products throughout the zone are in excess of 150 million rubles. Here I have in mind the losses which occur in connection with the crediting of non-quality standardized grain, sub-standard potatoes, vegetables and fruit and low quality milk.

Direct output losses and also losses caused by theft are still quite great. During the 1982 harvest, farms in the Kuban region lost an average of 72 kilograms of grain per hectare of cereal grain crops and in the Kabardino-Balkar ASSR -- 68 quintals. In some areas, the proper measures are not being undertaken aimed at compensating for the losses being sustained by the farms and large sums are being written off as losses.

Violations of financial discipline are taking place which are adversely affecting the economy. In addition, working capital is being diverted for capital investment purposes, there are large amounts of debtor indebtedness and above-normal supplies of commodity-material values, goods are being purchased on a cash payment basis, including small automobiles, the over-expenditures of the wage fund are considerable and many violations of the norms for output and estimates are being tolerated.

All of these shortcomings indicate that the economic work is not being carried out at the proper level, that a true campaign is not being waged aimed at achieving economies in the use of material, financial and labor resources and that many farms have become accustomed to taking advantage of Gosbank credit without giving any thought to the manner in which such credit will be repaid.

The agricultural organs are exercising only weak control over the administrative and financial activities of the kolkhozes and sovkhozes and are not undertaking adequate measures aimed at improving their economies.

The foundation for production activity -- a plan. During the course of planning, all internal reserves and potential must be thoroughly taken into account and the plan must be accurate and realistic. Unfortunately, many farms are not fulfilling their plans. Here the problem is one of neglect in the conduct of production operations and mistakes in the preparation of the planning indicators. In 1982, for example, in the face of general fulfillment by the farms in Krasnodar Kray of their plans for selling grain to the state by 100.2 percent, 199 farms failed to cope with their tasks and fell short in their work of supplying the state with grain by 383,000 tons. Many such examples could be cited for each region and for each type of product.

Cost accounting procedures are being introduced into operations at the kolkhozes and sovkhozes in a very weak manner. Whereas this work has been organized fairly well in Krasnodar and Stavropol krays and in Rostov Oblast, where all of the sovkhozes and for the most part all of the kolkhozes have converted over to cost accounting, in the autonomous republics proper attention is not being given to this important lever for influencing the farm economies. Of 141 sovkhozes in the Dagestan ASSR, only 8 have converted over to cost accounting and of 237 kolkhozes -- only 2. Cost accounting procedures have not been introduced into operations at more than one half of the farms in the Kabardino-Balkar ASSR and they are being employed by only a limited number of farms in the North Osetian and Checheno-Ingush ASSR's. In the production subunits of farms in the Dagestan ASSR, where cost accounting has been introduced (and the cost accounting tasks are assigned for the most part to all of the brigades, farms and machine-tractor pool), it is being employed in a very formal manner. Control is not being exercised throughout the year over the fulfillment of tasks and expenditures are not being analyzed. Separate bookkeeping records by production subunits have not even been introduced into operations on many farms.

Cost accounting is closely associated with such a progressive form for labor organization and wages as the collective contract. On those farms where it has been introduced into operations, the labor productivity of the workers is higher, more products are being produced and the production costs are lower.

The interest in collective contracts has become general in nature. Last year, 3,979 non-schedule brigades and teams were created in our zone for field crop husbandry operations, with 28 percent of all of the arable land being assigned to these elements. More than 11,000 brigades and teams are operating on the basis of contracts in animal husbandry. They have responsibility for 48 percent of the sheep and 29.6 percent of the cattle undergoing fattening. However, it bears mentioning that this work is in the initial stage and thus it warrants serious attention. It is being carried out most actively in Stavropol Kray, where 42 percent of the arable land has been assigned to the brigades and teams for field crop husbandry purposes and 52 percent -- for fattening the cattle and 84 percent of the sheep. This form of labor organization is being employed on 46 percent of the arable land in the Kabardino-Balkar ASSR and on 52 percent -- in the North Osetian ASSR.

Proper importance is not being attached to the use of collective contracts in Krasnodar Kray. Here only 17 percent of the arable land has been assigned to such brigades and teams and only 2 percent of the sheep. Almost no fattening work is being carried out for cattle or for dairy cattle husbandry on such land. The contract form of labor organization is being introduced into operations only weakly in the Dagestan ASSR. Certainly, haste cannot be tolerated in this important work and yet delays cannot be tolerated since they result in output losses and in a weakening of the farm economies.

The economic service for agroindustrial associations, primarily the departments for labor organization and wages, should summarize the experience of those brigades and teams which are operating on the basis of collective contracts, expose the mistakes committed, organize personnel training based upon the experience of the better farms and do everything possible to ensure that this form for organizing and stimulating labor becomes a leading force in 1984.

The RAPO specialists must also increase their activity with regard to introducing more progressive forms for production administration, particularly the departmental system. Here we have many shortcomings. Whereas in Stavropol Kray the departmental structure of administration was introduced at 181 farms at the beginning of this year, in Rostov Oblast -- only at 61. Only four farms in the Kabardino-Balkar ASSR have converted over to this system of administration. The kolkhozes Kaz'minskiy in Stavropol Kray and Rossiya in Krasnoarmeyskiy Rayon, Krasnodar Kray serve as examples of how effective this departmental system can be. The experience accumulated by these kolkhozes has been thoroughly discussed on the pages of SEL'SKIYE ZORI.

Despite the fact that they facilitate the work of the livestock breeders and promote the retention of personnel, such progressive forms of labor organization as double-shift work and twin-cycle daily routines on the farms are being introduced into animal husbandry operations very slowly.

The increasing volume of production and the need for having an increasing amount of information require improvements in the forms for carrying out bookkeeping work. The all-round mechanization of accounting operations has been underway for some time and yet the rates for implementing this system are quite slow. For the zone as a whole, it has been mastered only at 41 of 910 sovkhozes and 30 of 1,229 kolkhozes. In the Dagestan, North Osetian and Checheno-Ingush ASSR's, there is not one farm that can be used as an example in the teaching of accounting workers. This area of unfinished work on the part of the chief bookkeepers and the ministries of agriculture of the autonomous republics is the result of a lack of understanding on their part of the importance of this work.

In a number of areas the control-auditing service of the agricultural organs is poorly organized, the auditing results are poor and there are numerous cases in which those guilty of having violated financial discipline or having stolen socialist property remained unpunished for their deeds.

Last year the agricultural organs operated under new conditions. They became organs of the agroindustrial associations, responsible for coordinating the work of all participants in the APK /agroindustrial complex/, directing their efforts in the interest of achieving high final results, while maintaining

the priority assigned to the kolkhozes and sovkhozes. The APO councils were assigned all of the rights in the sphere of planning, distribution of logistical and financial resources, creating centralized funds, defining the measures for issuing material incentives to the collectives of service branches, exercising control over the activities of partners, implementing changes in the cost for the services they provide for the kolkhozes and sovkhozes and so forth. More complete use must be made of these rights, ensuring in the process high quality and productive labor in each APK collective and initiative and enterprise on the part of the specialists and leaders assigned to each production subunit. There must be an end to inactivity, irresponsibility and poor work and discipline and order must be strengthened at all levels. In the final analysis, we must force each leader and specialist not only to be aware of the status of affairs in the collectives assigned to their care, but also to be responsible, from both a moral and material standpoint, for the economic efficiency of each branch, each type of product and each farm.

A detailed and thorough analysis of the results for the third year of the five-year plan will make it possible to determine correctly the production expenditures for this current year. The financial support for the production activities of farms must be planned based mainly upon internal sources, with less use being made of Gosbank credit. This will be promoted to a large degree by budgetary funds allocated for economically weak and unprofitable kolkhozes for the financing of definite planned expenditures. They must be called for in the plans, with consideration being given to the requirements of the farms and also to ensuring their complete use. This did not occur last year and obviously definite mistakes were tolerated in connection with the distribution of budgetary funds among the farms. By 1 October, for example, only 138 million rubles (62 percent) of the 223 million rubles allocated had been used, in the Dagestan ASSR -- only 29 percent, Kabardino-Balkar -- 48 and in the Checheno-Ingush ASSR -- 34 percent. In particular, these funds are being used very poorly for construction and to a considerable degree this results from the fact the budgetary appropriations were allocated for those kolkhozes which lacked planning-estimates documentation and contractual organizations and lacked the potential for erecting their own production facilities, housing and cultural-domestic installations. Over a period of 9 months, only one half of the funds were used for the maintenance of socio-cultural institutes and childrens' kindergartens in Krasnodar Kray and the Kabardino-Balkar ASSR and in the Dagestan ASSR -- only 11.1 percent, in the Checheno-Ingush ASSR -- one third. The local agricultural organs are not exercising control over the use of these funds and they are not providing the farms with intelligent assistance.

The time is at hand for directing the attention of kolkhoz members, sovkhoz workers, farm leaders and specialists and the agricultural organs to the economic problems. And this must commence with economic training being provided for the personnel on a mass scale. We must teach the personnel to master the principles of cost accounting, collective contracts and economic analysis and to find the means for ensuring more efficient use of the material, financial and labor resources and raising the monetary income of the farms. We must search for and introduce into operations experience accumulated in raising the material interest of personnel based not only upon the production indicators but also upon the final results. It is for these purposes that economic general training should be organized during the autumn and winter period for the farm leaders and specialists, middle echelon personnel, the

leaders of subunits, collective contract workers and also workers attached to the economic services. The base farms should serve as the principal training areas -- it is here that the students, based upon the example and experience of their colleagues, become aware of the conditions which promote the best work and the most benefit to society.

Our obligation and our overall goal is to improve economic work at all levels and in this manner to make our own contribution towards implementing the decisions handed down during the May and November (1982) and June and December (1983) plenums of the CPSU Central Committee and also towards implementing the Food Program.

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ACCOUNT OF USSR-CEMA COLLABORATION IN AGRICULTURE

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 2, Feb 84 pp 73-79

[Article by B. Runov, deputy agricultural minister of the USSR, deputy director of the Soviet section of the CEMA Permanent Committee on Cooperation in the Area of Agriculture: "Cooperation of the USSR With CEMA Countries"]

[Text] The Communist Party of the Soviet Union and the communist and workers' parties of other socialist countries belonging to the Council of Economic Mutual Aid [CEMA] give constant attention to improving cooperation. This applies equally to the area of agriculture and to the agrarian policies of CEMA countries as a whole.

The agrarian policies of these countries reflect a scientifically-based political course that was developed and implemented by communist and workers' parties for the continued development of agriculture and for strengthening the union between the working class and peasants. These policies are based on the Leninist theory of socialist transformation and development of agriculture with a consideration of the historical, economic and national characteristics and traditions of countries. They are directed at the reconstruction of the socio-economic foundations of agriculture and at setting it on the path toward large-scale mechanized production.

The most important goal of the agrarian policies of most CEMA countries is the dynamic and highly effective development of agricultural production on the basis of its intensification. For this, the material-technical base of the branch is constantly being strengthened, the achievements of scientific-technical progress are being introduced, and concentration, specialization, inter-enterprise ties and agro-industrial integration are being broadly developed.

The cooperation of CEMA countries strengthens the world system of socialism, which created a new type of economic and political relations between countries--complete equality, mutual respect of independence and sovereignty, fraternal mutual aid and cooperation and socialist internationalism. With the accumulation of experience in new forms of inter-state relations a Comprehensive Program for the Continued Strengthening and Improvement of Cooperation and Development of the Socialist Integration of CEMA Countries was developed and passed in 1971 at the 25th CEMA session.

The Comprehensive Program determines the goals, main directions and forms of planned development of economic and scientific-technical cooperation among CEMA countries for the long-term future. Directions and goals for cooperation in the basic branches of the national economy have been established.

The real embodiment of the Comprehensive Program is evident in the Long-Term Goal-Oriented Programs of Cooperation which include plans for the development of specific branches of material production. The basis for all work is the principle of international socialist division of labor, which is implemented on a bilateral and multi-lateral, equal and mutually-advantageous basis.

International socialist division of labor is a new type of inter-state division of labor which developed in the process of economic cooperation among socialist countries. It is an objective economic process that is the result of the lawful development of production forces in socialist countries. Economic cooperation in the area of agriculture is implemented on a bilateral and multi-lateral basis. The USSR Ministry of Agriculture implements such ties within the framework of the Permanent CEMA Committee on Cooperation in the Area of Agriculture. The activities of this committee are directed at fulfilling the decisions of the 26th CPSU Congress, of the congresses of communist and workers' parties of other socialist countries as well as the decisions made during CEMA meetings and meetings of its executive council.

The USSR cooperates with socialist countries, particularly in the areas of breeding, variety testing and seed farming; in the exchange of experience on the use of progressive technology for cultivating various agricultural crops; and in testing chemical preparations and feed supplements, agricultural and forestry machinery, equipment and units. In livestock raising there is an exchange of genetic funds for agricultural animals and there are mutually-advantageous deliveries of veterinary preparations and equipment.

The work plans for permanent work groups and coordinating centers of the Permanent CEMA Committee are fairly extensive. They include various forms and methods of cooperation. For example, plans include the extensive exchange of information and literature; seminars, symposiums, conferences and exhibitions; joint elaboration and development of new varieties of agricultural crops and breeds of animals; the planning, building and operation of jointly-developed and built livestock complexes and farms; and the exchange of new production technologies for the production of agricultural crops.

The multi-faceted cooperation of CEMA countries in the area of agriculture and the agro-industrial complex enables us to develop methodologies and resolutions which are necessary for the continued development of scientific-technical, economic and trade agreements between these countries. Within the framework of cooperation there is a single system of veterinary control and a single methodology for testing agricultural and forestry machinery. Work is continuing on common standards for CEMA countries related to various agricultural products, machines and methodologies for variety testing. Agreements are being worked out on conducting tests on units and equipment.

An important stage in cooperation is the preparation of survey documentation for areas of mutual interest. These include, for example, the development of the material-technical base for agriculture; the use of mineral fertilizer and feed supplements; the production and use of pesticides; the satisfaction of the need for pedigree animals and veterinary preparations, for quality seed and sowing material; the satisfaction of the need for equipment to repair and service agricultural technology; biological means for plant protection; and the status and prospects for the development of the feed base and the satisfaction of the need for feed protein. These documents have served, in particular, as the basis for the preparation of joint measures to improve the supply of food goods to the population of CEMA countries.

One of the goals of multi-lateral cooperation is technical cooperation and aid to further improve agriculture in Cuba, Mongolia and Vietnam. There are broad programs for the multi-lateral and especially for bilateral cooperation with the USSR on the development of various branches of the agro-industrial complex in these countries. The USSR Ministry of Agriculture is overseeing the building in these countries of various agricultural objects, is supplying machines and equipment and is sending specialists of various types.

The multi-faceted cooperation of CEMA countries includes over 100 themes; over 300 scientific institutions are participating in joint work. Scientists and specialists are doing extensive work in coordinating centers. During the years of the 10th Five-Year Plan cooperating institutes completed and recommended for introduction into production over 400 scientific elaborations. In 1982 in 57 meetings of the Permanent Committee 70 scientific elaborations were recommended for introduction into production; in 1983 168 different works were recommended for introduction into production. This relates to completed works on new varieties of agricultural crops, to plant protection, to new machinery and production technology and to computer methods in agriculture. The introduction of this work into production will facilitate the achievement of a great economic effect.

Within the framework of multi-lateral cooperation of CEMA countries, the USSR Agricultural Ministry also has bilateral agreements with all CEMA countries and with Yugoslavia. Such cooperation, like the multi-lateral, is built on a mutually-advantageous basis. It includes broad themes, a large volume of various types of work beginning with the exchange of seed and ending with an exchange of technologies for production output, and the building and operation of agricultural structures. Let us present individual examples of cooperation between the USSR Agricultural Ministry and individual countries.

There is great scientific-technical and economic cooperation with Mongolia. With the help of the USSR new virgin-lands state farms, feed-producing enterprises, dairy farms, shops and storehouses were and continue to be built.

The agricultural objects built with the help of the USSR are of great significance in the development of a food balance in Mongolia--with regard to grains Soviet aid secured over one-third of their production; potatoes--25 percent; vegetables--20 percent; and milk--over two-thirds of the amount produced in the country's public sector. Many Soviet scientists and specialists are work-

ing on the state farms of Mongolia's Agricultural Ministry and in the country's planning and scientific institutions. At the same time large groups of Mongolian specialists regularly come to the USSR to study.

Scientific-technical and economic cooperation in Mongolia encompasses all of the basic directions in farming and livestock raising, veterinary medicine, feed production, the struggle against soil erosion and irrigation. Soviet specialists and scientists participated in the elaboration of the Special Purpose Comprehensive Program for Agricultural Development and for Improving Food Supplies for the Mongolian Population in the Future.

Extensive work was begun by the USSR Ministry of Agriculture with regard to the assimilation of significant areas for rubber tree plantations in Vietnam. A great deal of work remains to be done in training and retraining cadres as well as in introducing new varieties of agricultural crops.

Cooperation with Cuba in the area of agriculture is being implemented on a bilateral basis and within the framework of the Permanent CEMA Committee. Both countries conduct an extensive exchange of scientists and specialists in order to become acquainted with the achievements of science and production, to fulfill joint scientific-research work on the problems of agricultural science and practice, and to participate in international measures.

Within the framework of bilateral cooperation over 15 scientific-research and educational institutions of the USSR are conducting research on 12 problems, including the organization of livestock raising, of poultry raising, of genetic selection of agricultural crops, of soil science, of plant protection as well as on the problems and organization of agricultural production. In order to increase the training of Cuban specialists our scientists present a lecture course and seminar work.

As a result of cooperation the theoretical bases have been elaborated for a system of protecting soil against erosion, preliminary data has been obtained on the possibilities for cultivating two tobacco harvests in the course of one calendar year and materials have been prepared for the elaboration of recommendations on the application of fertilizer to sugar cane.

Soviet and Cuban specialists have selected samples that are characterized by a high productivity and resistance to disease and that are interesting in terms of immediate cultivation or for further selection under conditions existing in Cuba or the USSR. The most productive varieties of crops that are not widespread in Cuba have been selected (marrow squash, pattypan, beans, green peas and others), the introduction of which will expand the assortment of vegetables; practical recommendations have been prepared on the year-round supply of the Cuban population with fresh vegetables.

Since 1980 there has been cooperation with regard to a plan for the accelerated development of science and technology in Cuba until 1990 on the following problems: research in the area of cultivating sugar cane; the multi-faceted development of citrus production; and the development of livestock raising and the feeding of animals. As a result of cooperation Soviet scientists and specialists have made an analysis and developed specific proposals on the agro-technology for cultivating sugar cane.

In order to provide methodological aid in the organization of educational processes consultants-teachers are sent to agricultural vuzes in Cuba. Cuban specialists receive training on the operation of agricultural technology, land management, feed production, soil science and the mechanization of livestock raising in leading agricultural scientific-research institutes and leading enterprises of the USSR. A large group of Cuban undergraduates and graduate students is studying in agricultural vuzes in the USSR.

Soviet and Bulgarian scientists are doing some very interesting work. They are cooperating in the area of programmed harvests, the introduction of new varieties, variety testing, and the exchange of production technology for agricultural crops. On the basis of results of variety testing in the USSR winter wheat and corn varieties developed in Bulgaria have been regionalized for the USSR, and sunflower, rice and fine-fiber flax varieties developed in the USSR have been regionalized in Bulgaria. In our country crops such as perko [Translation unknown], beans and others are cultivated according to Bulgarian technology. The productivity of perko seed in the enterprises of Lvov Oblast is on a level of 17 quintals per hectare; green mass--220 quintals per hectare. The Bulgarian variety of beans, Dobruzhanka-2, yields 16 quintals per hectare in the enterprises of Odessa Oblast.

In turn, the USSR Agricultural Ministry secured the introduction in Bulgaria of the technology for cultivating turnip-like onions and lavender and for raising geese of the Obroshinskiye Seriye breed. Experimental slaughter in the Pravets APK [Agro-industrial complex] (Bulgaria) showed that the live weight of geese whose rations included 50 percent green fodder reached an average of 4.2 kilograms in 60 days.

Scientific-research institutions are implementing joint research on 20 agricultural topics. Thus, the All-Russian NII [Scientific Research Institute] of Viticulture and Wine-Making (city of Novocherkassk), the Moldavian NII of Viticulture and Wine-Making (city of Kishinev) and the Institute of Viticulture and Wine-Making (city of Pleven) together developed the Druzhba wine variety. Specialists from the VNII [All-Union NII] for the Reproduction and Genetics of Agricultural Animals (city of Pushkin) and of the Institute on Combatting Hog Diseases (city of Vratsa) developed a technology for producing preparations of the hypophyseal luteinizing hormone Lyuteoziman, which is used to treat hormonally-caused barrenness in cattle and in other types of agricultural animals.

In 1981 the USSR Agricultural Ministry and the Bulgarian National Agro-Industrial Union signed an agreement on cooperation in the area of sheep farming. On the basis of socialist division of labor and cooperation it is planned to develop draft, technical and technological documentation. This is essential for the building of experimental sheep-raising complexes in Bulgaria and the USSR.

Scientific-technical and economic ties with Hungary in the area of agriculture are also implemented on a multi-lateral and bilateral basis. On a multi-lateral basis cooperation is implemented in accordance with the work plan of the Permanent CEMA Committee. Both sides participate in the implementation of the Comprehensive Program of Socialist Economic Integration, in the development of long-term purposeful programs, in joint work according to the CEMA

plan of cooperation with regard to scientific and technical research in the area of agriculture and the timber industry in 1981-1985, and in work of coordinating centers on problems such as, "Breeding," "Livestock Raising," "Cybernetics," "Fertilizer," "Plant Protection," "Mechanization," "Corn Selection," and others.

Since 1980 there has been direct cooperation between the Kuban' Sovkhoz of Krasnodar Kray and the Hungarian Mezefalva State Farm (Feyer Oblast) with regard to the mutual exchange of production experience and information on the status and dynamics of an enterprise's economy, on work with cadres, and on methods of educating workers in the labor and moral spheres.

A special feature of the extensive scientific-technical ties between the USSR and Hungary in the area of agriculture was the transformation of these ties into economic cooperation. Significant work in this direction was done within the framework of the Permanent Work Group on Agriculture, created in 1973 as part of the Inter-Government Soviet-Hungarian Committee on Economic and Scientific-Technical Cooperation. This cooperation is implemented by means of exchanges of seed and technologies for the cultivation of the basic agricultural crops, of the procurement in Hungary and the building in the USSR of poultry-farming objects, of concluding licensing agreements and so on.

Each year the USSR receives significant quantities of seed of peas, soybeans, vetch, beans, vegetable crops, hybrid corn seed, grafted grape seedlings as well as day-old chicks; sets of technological and laboratory equipment are delivered.

Soviet specialists have studied the experience of corn cultivation in Hungary and this experience was utilized in the development of native industrial technology. This industrial technology was utilized on a large area in the USSR. Studies will be conducted on the feasibility of applying other technologies for corn cultivation to local regional conditions in a number of sovkhozes and kolkhozes.

Cooperation is also being realized in the area of poultry-raising. On the basis of simplified designs and sets of technological equipment supplied by Hungary the USSR has built two poultry-raising enterprises (400,000 pedigree chickens in each--Podkumskiy in Stavropol Kray and Polesskiy in Kiev Oblast) and two poultry factories (10.6 million broiler chickens annually in each--Orel'skaya in Dnepropetrovsk Oblast and Druzhba in Brest Oblast). It is planned to build a poultry factory for 10.6 million broilers annually in the Azerbaijan SSR.

In turn, the USSR supplies Hungary with the seed of millet, rice and buckwheat and seedlings of the European black currant and the Persian walnut as well as individual fur-bearing animals for breeding. Soviet technology has been introduced for cultivating sugar beets without the expenditure of manual labor. A large rice harvest was produced in Hungary after being cultivated according to the technology of the All-Union Scientific-Research Institute of Rice.

Within the framework of the Permanent Work Group it is planned to further develop and strengthen cooperation in the area of selection and seed farming, of improving the technology for cultivating agricultural crops and for producing animal products as well as of exchanging information and scientific and production experience. It should be noted that cooperation between the USSR and Hungary is mutually-advantageous and facilitates the solution of problems related to the continued development of agriculture in both countries.

Of great interest is the cooperation of the USSR Agricultural Ministry with the corresponding ministry in the German Democratic Republic. Thus, scientists and specialists of the USSR and GDR jointly developed new varieties of a number of agricultural crops, including new varieties of potatoes and lupine. Extensive and very beneficial was the joint work on designing and building, both in the USSR and in the GDR, of livestock-raising complexes for the production of milk, for the raising of calves and for the fattening of hogs. The joint work of scientists and specialists of the USSR and the GDR demonstrated a creative approach to work, which enabled them to use all of the best that was developed by science and practice, to achieve a standardization in the livestock equipment being manufactured and to curtail the time needed for designing, manufacturing equipment and for building.

Great successes have also been achieved in cooperation with Czechoslovakia--Soviet and Czech scientists have jointly developed new varieties of barley, active work is being done related to the physiology and biochemistry of ruminants, an experimental hop espalier is undergoing testing and a number of preparations have been developed to combat agricultural pests. The preparations are widely used in the enterprises of the CzSSR and USSR and have moved to industrial production. New preparations against mosquito larva are undergoing state testing.

Together with Czech scientists and specialists there has been an elaboration of a technology for the phytosanitary diagnosis and for the elaboration of prognoses related to the distribution of harmful insects. The utilization of this technology significantly curtails labor expenditures for the collection of the needed information, decreases the expenditure of pesticides and increases the output of agricultural products. An agreement has been reached between Czechoslovakia and the USSR on a program of scientific-technical cooperation in the area of biochemicalization and chemicalization of agricultural production which foresees the completion of work on clarifying norms related to the need for vitamins, microelements and amino acids by agricultural animals.

At the present time the scientific-research institutions of both parties are implementing joint research on 15 subjects, including the breeding and seed farming of wheat, brewing barley, hops and pulse crops; the processing of manure; the preservation of moist flax raw materials; and the elaboration of designs for industrial poultry-raising complexes. Positive results with a practical application have been achieved for a number of themes. In particular, the Mironovskiy-66 spring barley variety is undergoing testing. Its productivity is 57 quintals per hectare, it is very resistant to drought and fungal diseases and does not lodge. In addition, by utilizing Czech barley varieties

VIR [All-Union Scientific Research Institute of Plant Growing imeni N. I. Vavilov] developed seven new varieties of barley, of which Zelenogradskiy-73 was regionalized in 1980, Druzhba and Prievara--in 1982 and four others are successfully undergoing testing.

Through the joint efforts of the collectives of scientists in institutes of the USSR and CzSSR a technical design was developed for an experimental complex to feed 500,000 geese annually on mesh flooring. This complex has a number of advantages over the existing model design. At the present time the first stage of the complex (for 250,000 geese) is being built in the Shchekinskoye Association of Kokchetav Oblast and in the CzSSR in the Dunayska Streda Rayon. Also elaborated was an experimental technical design for a poultry factory raising 500,000 baby turkeys annually.

The experience of cooperation with the CzSSR in the area of agricultural production amassed in recent years has created real prerequisites for the continued development of mutually-advantageous ties and their increased effectiveness.

Cooperation in agriculture between the USSR and Poland is being implemented on multi-lateral and bilateral bases. Within the framework of bilateral cooperation on the basis of annual protocols there is an exchange of delegations and specialists, joint scientific-research work on urgent problems related to agricultural science and practice and an exchange of information, technical documentation, literature, agricultural films, seed samples and pedigree animals.

There has been a successful implementation of cooperation as regards the testing of varieties of agricultural crops. As a result of cooperation Polish varieties of winter rye, spring barley and spring oats have been regionalized in the USSR and Soviet varieties of winter wheat, corn, sunflowers and long-fiber flax have been regionalized in Poland. Soviet and Polish institutes are presently conducting research jointly on 13 subjects on the basis of bilateral cooperation. Positive results have been achieved on a number of subjects and they have found a practical application in agriculture. In particular, hybrid potatoes have been produced that have a field resistance to viral diseases and Phytophthora; the productivity of these potatoes reaches 450-500 quintals per hectare. Hybrid rye has been produced that is characterized by good winter hardiness, large grain and a productive ear. A preparation has been developed for treating mastitis in cows. Equipment for the reception from transportation vehicles of coarse feed of any moisture content and procured in baled, rolled or loose form has been developed and has passed farm testing. A mobile apparatus has been designed to catch airborne spores, which enables scientists to study the dynamics of flight of airborne plant disease agents in the course of the entire vegetative period. At the present time it would be most expedient to focus attention on strengthening research on works that were jointly begun.

Since 1977 there has been direct cooperation and friendly ties between the sovkhozes of the USSR and the state farms of Poland. New proposals are being

developed to expand and strengthen cooperation between the kolkhozes of the USSR and cooperative enterprises of Poland.

Direct cooperation between production collectives foresees a mutual exchange of work experience and production information on the economy of an enterprise, the organization of labor and work with cadres. As a result of the mutual acquaintance with work experience and of visits by delegations and individual specialists proposals are made on improving the organization and conditions of labor, progressive work methods are shared and friendly ties between the workers of both countries are strengthened. One of the results of such contact was the planting of friendship gardens in honor of the 60th anniversary of the Great October socialist revolution in the Sovkhoz imeni 25 S"yezd KPSS of Volyn Oblast, Ukrainian SSR, in the Rassvet Sovkhoz of Brest Oblast, Belorussian SSR and in the Leonuv Combine of Lyublin Province in Poland. The orchards each have 100 hectares. Moreover, the USSR is giving Poland aid in developing two model state farms--Goldan and Grushovitse.

During the 11th Five-Year Plan there was a noticeable activation in Soviet-Romanian cooperation--14 Soviet and 13 Romanian scientific-research institutes are implementing joint research on 13 urgent problems, including the breeding of sunflowers, corn, soybeans, rice and beans and the technology for producing beef, pork and milk on an industrial base. In recent years there has been a successful implementation of cooperation on exchanging technologies for cultivating individual agricultural crops. In 1983 this work expanded significantly. The experience of cooperation with Romania as regards the exchange of technologies has shown that the mutual study of leading methods of cultivating the major agricultural crops is important for increasing their production in both countries.

For example, the Romanian technology for cultivating soybeans, which was studied in various zones in our country, has been utilized to develop native industrial technology. At the same time the introduction in Romania of Soviet technology for cultivating long-fiber flax, according to the evaluation of Romanian specialists, enabled them to sharply increase the productivity of flax straw and seed. Positive results have been received for the remaining crops as well.

With the goals of expanding and strengthening cooperation with Romania in the area of agriculture it would be expedient to: strengthen and increase the effectiveness of scientific-technical cooperation by means of implementing joint comprehensive goal-oriented programs encompassing scientific research, planning and the development and introduction into agricultural production of elaborated technology; expand the work on exchanging technology, increase the volume of mutual supplies of seed, pedigree livestock and veterinary preparations; and seek out new forms of cooperation in directions that are of mutual interest.

Since 1964 Yugoslavia has been participating in the work of a number of CEMA organs on the basis of special agreements on questions of mutual interest. On a bilateral basis joint research is being conducted on various themes, including on the subject of breeding corn, wheat, sunflowers, sugar beets,

alfalfa, barley, hops and tobacco, of mechanizing agricultural production and of improving the methods of breeding work in sheep raising. Cooperation has been successful in the variety testing of agricultural crops and in the exchange of seed samples and sowing material.

Since 1980 some enterprises of the Moldavian SSR and Kharkov Oblast have been conducting production testing of the Yugoslavian cultivation technology for grain corn and sugar beets. The essence of this technology is the absence of expenditures of manual labor. For the experiment Yugoslavia is supplying seed, pesticides and some types of agricultural equipment. Yugoslavian specialists are acting as consultants on the work.

The experience of cooperation with Yugoslavia in the area of agricultural production amassed in recent years has created real prerequisites for the continued development of mutually-advantageous ties and for increasing their effectiveness. For this reason it appears to be expedient to expand economic cooperation with Yugoslavia in the area of joint cultivation of hybrid corn seed developed in the USSR and Yugoslavia and of improving the technology for processing this seed; and of testing and using in our country the Yugoslavian technology for cultivating corn, sugar beets and other crops without an expenditure of manual labor.

In discussing the positive aspects of our cooperation with socialist countries which are mutually advantageous economically we must also note those potential reserves which are at the disposal of our countries. One shortcoming is the relatively weak and slow introduction into practice of the final results of joint efforts. This shortcoming decreases economic effectiveness of particular scientific elaborations. Partners do not always clearly establish the volume and schedule for a particular job and regular controls are absent. Specific, completed works that have been tested in practice and evaluated for economic effectiveness rarely arrive in the agricultural ministries of our countries. It is essential to curtail the time for elaborations and applications by means of a more precise organization and management of scientific subdivisions and to strengthen work on improving direct ties between enterprises.

Despite certain successes in the services of the international Agroinform [Agricultural information] system, information on questions of agriculture and the agro-industrial complex must be more efficient, specific and systematized. It is essential to improve the mutual exchange of operational information with a consideration of considerably improving the effectiveness of information services.

It is also important that in addition to traditional cooperation on broad themes of agricultural production, scientists and specialists from our countries through joint efforts accelerate the development of and carrying out of specific goal-oriented programs, including on questions related to the preservation of agricultural products, economizing on raw materials and fuel, the use of secondary resources, the more extensive use of means of automation, the renovation of agricultural enterprises and the introduction of new forms and methods of labor.

The transition of the thematics of cooperation to an agreement and contractual basis must significantly raise the mutual responsibility of cooperating parties. It will facilitate a more rapid solution to the most important problems related to the further development of agriculture in the USSR and in fraternal socialist countries. These and other important questions related to the continued strengthening of multi-faceted cooperation among CEMA countries and the fulfillment of the Comprehensive Program were the subjects of the 59th meeting of the CEMA Permanent Committee on Cooperation in the Area of Agriculture, which took place in Moscow on 5-9 December 1983.

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PRIVATE PLOT DEVELOPMENT IN RSFSR REVIEWED

Moscow SEL'SKOYE KHOZYAYSTVO ROSSII in Russian No 2, Feb 84 p 39

/Article by P. Zakharov, chief of the Main Administration for Inter-Branch Relationships and Standardization of the RSFSR Ministry of Agriculture: "Private Plots, A Matter of General Concern"/

/Text/ The correctness of the words comprising the title "Private Plots, A Matter of General Concern" is borne out by statistics: in 1982 the private sector produced 24.6 million tons of potatoes, 3.9 -- vegetables, 1.2 -- fruit and berries, 12.4 -- milk, meat -- 3.2 million tons (in live weight), wool -- 4,300 tons and 10.5 billion eggs. In recent years solutions have been found for such "troublesome" problems as the withdrawal of lands for collective haying and pasture use, acquisition of livestock, allocation of equipment for the working of private plots and the shipping of products, artificial insemination of brood stock and veterinary services for the animals. In 1982 alone the kolkhozes and sovkhozes sold to the private farms 572,000 head of young cattle stock, more than 9 million young pigs and 314 million head of young poultry. Despite the difficulties with feed, the republic's farms issued and sold to kolkhoz members and sovkhoz manual and office workers 6.9 million tons of grain, 2.6 -- hay, 3.5 -- straw and 1.1 million tons of silage and root crops. Eleven million seedlings for fruit trees and 28 million berry bushes were made available to meet the needs of horticulture. The institutes of Gosbank issued more than 13 million rubles worth of credit for the purpose of acquiring livestock. It was by no means an accident that over the past 3 years the number of cattle being maintained on a private basis increased by 3 percent and swine -- by 12 percent. In short, the production base for the subsidiary farms was strengthened noticeably.

The Kolkhoz imeni XXII Parts"yezda is well known far beyond the borders of Baykalovskiy Rayon in Sverdlovsk Oblast. The kolkhoz workers are not hindered by the stern Urals climate. With each passing year they are increasing their production of meat, milk and other agricultural products. There are 314 plots at the kolkhoz, where more than 430 head of cattle (including 302 cows) and 930 swine are being maintained. Each year the farm sells 900-1,000 young pigs to the kolkhoz members and it accepts full responsibility for making young poultry available for private use.

In the interest of ensuring that the livestock are supplied with feed, each kolkhoz plot is assigned from 1.5 to 2 hectares of haying land for long-term

use. In addition, the kolkhoz provides the citizens with perennial grass seed and mineral fertilizers and it furnishes assistance in the carrying out of soil improvement work and in improving the fertility of the feed lands. The administration is constantly improving the system of payments in kind and this is also promoting an increase in the production and sale of agricultural products to the state by the private farms.

Or let us take the Vesnovskiy Sovkhoz in Krasnoznamenskiy Rayon, Kalinin Oblast. There are 237 families of manual and office workers living on its territory. They are maintaining 300 head of cattle (including 200 cows) and 480 swine. The feed problem here has also been solved through the long-term use of haying lands and also by assistance being furnished in the form of mineral fertilizers and perennial grass seed. As a result, each plot is fully supplied with hay. It comes as no surprise to learn that the production and sale of meat, milk and other products to the state is increasing with each passing year. For example, the sovkhoz annually purchases more than 2,000 kilograms of milk on the average from each privately maintained cow.

At the same time, the opportunities afforded by the private farms are not being utilized fully in all areas. This applies first of all to Bryansk, Omsk and Tomsk oblasts and to the North Ossetian and Checheno-Ingush autonomous republics, where reductions have taken place in the number of cattle on the private plots. In 1982 a decrease took place in the number of cows on farms in a majority of oblasts in the central and central chernozem regions. Up until now, one third of the private farms of Russia generally did not have livestock. This was precisely the situation in Arkhangelsk, Vladimir and Ivanovo oblasts, in Khabarovsk Kray and in the Karelian ASSR. The principal reason for this -- insufficient attention given to the private plots by the leaders of kolkhozes, sovkhozes and local agricultural organs. Despite over-fulfillment of the tasks for selling young pigs and young poultry stock to the citizens, the population's requirements for procuring poultry are still not being satisfied completely. Nor have final solutions been found as yet for such problems as supplying feed for the privately maintained livestock or acquiring construction materials and orchard and garden implements.

Certainly, the most complicated problem is that of feed. Moreover, quite often specific and laborious action is being replaced here by discussions. Meanwhile, many productive lands along railroads, highways and intra-farm roads and also lands in state and kolkhoz forests are overlooked. Overlooked also are ravines, coppices and other types of unsuitable land.

Improvements are also required in the practice of counter sales of mixed feeds to the population for products procured. In order for these procurements to be better organized, the system for organizing purchases of agricultural products from citizens on the farms should be reexamined. The points for procurements and processing of the products should be located as close as possible to the production areas. The network of receiving points should be expanded, existing shortcomings with regard to determining the quality of the products should be eliminated, the volumes should be increase and most important -- the system of counter sales of industrial goods should be improved.

It is no secret that the following rule is in effect in a number of oblasts: in order to procure a small automobile for private use, one must sell two or

even two and a half tons of meat in live weight to consumer cooperation. Naturally, no single private farm is capable of doing this. Adn there are some who are beginning to inflate the prices for the livestock and also the receipts of neighbors, but at higher and more speculative prices. Certainly, these phenomena are causing great moral and material harm.

However, fine results ensue when a thoughtful approach is employed for organizing purchases. For example, 992 tons of berries and fruit were purchased in Leningrad Oblast in 1982 and last season -- approximately 3,000 tons. This success was promoted by the fact that the procurement organizations opened up 130 receiving-procurement points at the horticultural associations. As a rule, an accumulation of industrial goods develops at these points at the beginning of the season and the work regime is coordinated with the administrations of the horticultural associations. Contracts for the purchasing of fruit and berries have been concluded and are being concluded in a timely manner in the oblast and the marketing of rowan berries and local apple varieties is guaranteed here. It makes sense for such experience to be adopted by other oblasts.

7026
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EFFECTIVE USE OF FINANCIAL RESOURCES WITHIN KAZAKH APK

Alma-Ata SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 1, Jan 84 pp 20-21

[Article by E. Turkebayev, director of the Scientific Research Institute of EIPiN [Expansion unknown] of Kazakh SSR Gosplan, doctor of economic sciences and professor; B. Kaimov, department director and doctor of economic sciences; and P. Pugay, sector director and candidate of agricultural sciences: "Increasing the Role of Financial Resources in the APK [Agro-Industrial Complex]"]

[Text] An important role in improving the management mechanism and in organizing economic methods of planning and administration in the country's agro-industrial complex is played by the resolutions of the CPSU Central Committee and the USSR Council of Ministers, "On Improving Economic Interrelations Between Agriculture and Other Branches of the National Economy," and "On the Order for Planning and Material-Technical Supply of the Agro-Industrial Complex in the USSR."

In the light of these decisions the role of financial resources and relations and of the entire financial-credit mechanism increases exclusively in terms of the basis for the continued development of socialist, expanded production.

During the 10th Five-Year Plan 14.7 billion rubles of capital investments were directed into the republic's APK, including 13.6 billion rubles into agriculture. During the 11th Five-Year Plan these investments reached 16.7 and 15 billion rubles respectively.

Of state expenditures to increase procurement prices and supplements to prices for products produced by unprofitable and low-profit enterprises, introduced in January 1983, Kazakhstan's share is about 2 billion rubles. For all sources of financing agriculture in the republic 5.3 billion rubles were received last year.

The use of the planned volume of financial resources is called upon to secure a considerable improvement in the economy of agriculture and to increase its effectiveness since this branch remains unstable and unprofitable. For example, during the last 22 years the sovkhozes of the Kazakh SSR Agricultural Ministry achieved profits eight times. Moreover, the branches belonging to the APK, which work primarily with raw agricultural materials and which have dozens fewer workers, achieved much larger profits during the last 10 years than all of the enterprises of the republic's agricultural ministry.

According to the results of the 10th Five-Year Plan alone profits of enterprises and organizations belonging to the infrastructure in servicing sovkhozes and kolkhozes comprised 3.1 billion rubles, which exceeds the profits of agricultural enterprises by over tenfold. In 1979-1982 profits of five ministries included in the APK system comprised 2.345 million rubles while in the republic's agricultural ministry and ministry of the fruit and vegetable industry the size of losses equalled 93 million rubles.

A number of ministries and departments belonging to APK's obtained profits with stability regardless of weather and other conditions. In the APK as a whole (including agriculture) profits during these years comprised 2.126 million rubles. According to existing data on the average per year for each ruble of produced combined public product (not counting taxes from turnover) republic industry receives 13 kopecks of profits, procurement and material-technical supply--26, and agriculture--1 kopeck. It turns out that agriculture produces over 30 percent of the combined product, but in the distribution of the sum total of clear income its proportion of profits is only 1 percent. This is why there is such importance attached to unified planning and administration of the APK and to achieving optimal parameters in the use of the redistribution function of financial resources among ministries and departments comprising the basis of economic interrelations between partners of agro-industrial associations. For the interrelations between agriculture and other spheres of the agro-industrial complex are implemented in the form of exchange on the basis of commodity-monetary relations.

Since this is an involved problem, let us examine only one aspect of the developing economic interrelations between producers and procurers with regard to the sale of grain crops. The system existing in procurement organizations for determining gluten content has a negative effect on the material interest of enterprises because of its imperfections. If the laboratory worker makes a 1-percent error the size of the supplement drops from 30 to 10 or from 50 to 30 percent. It is easy to make a mistake because the equipment and methods used are far from perfect. Thus, the weights, electrical drying case and sheller leave something to be desired with regard to precision as well as productivity. In a day a qualified laboratory worker can examine 10-12 samples. And what if grain is coming from 20 and more enterprises and if additionally there are different crops? Under such conditions it is very difficult to clarify whether quality seed has been reduced to a standard or whether small seed has been mixed with good seed.

Further, in regulating the consumer qualities of grain a large role is played by standards and methods of evaluation. The standard for strong wheat does not call for the division of grain into classes. Many indicators do not have sufficient bases, are not related to each other or repeat each other. The size of the grain is judged without a consideration of moisture content. The washing of gluten is done manually. This is why the final results depend to a great extent on the skill of the laboratory worker.

Finding a solution to the problem of efficiently and precisely determining grain quality has been dictated by economic interests for a long time. With this goal in mind the collective of the Kazakh affiliate of the All-Union

Scientific Research Institute of Grain and its Products developed new MOK-1 and MOK-3 units for the mechanical washing off of gluten, which completely does away with manual labor. They are small, highly efficient (MOK-1--18 samples, MOK-3--54 samples in an 8-hour work day), relatively inexpensive and can be serviced by 1-2 laboratory workers. The units can be installed not only in grain-reception points, but in kolkhozes, sovkhozes and large brigades as well, which will enable them to complete a preliminary evaluation of grain quality directly in enterprises. The institute has also developed a unit for drying gluten. The process takes no more than 1 minute whereas with manual labor it takes 20-30 minutes and more. There is a special apparatus for mixing dough in which the entire process takes less than 30 seconds. Thus, an entire complex of equipment has been developed for the mechanical determination of gluten content and quality. Its use will significantly curtail the number of laboratory workers in grain-reception points and will enable us to evaluate wheat quality more objectively. However, the USSR Procurement Ministry is dealing slowly with the question of equipping grain-reception points and enterprises with this equipment.

Here is another thing. An increase in the procurement of high-quality and income-producing grain crops depends greatly on the workers of grain-reception enterprises, but they do not have special funds for providing supplementary incentives for their workers. Wholesale prices for strong wheat are not differentiated according to the quality of gluten. This is why it is more advantageous for grain procurers to receive all wheat as soft. We feel that it is essential to make corrections here too.

Under conditions of the APK both producers and procurers are concerned with the type of grain delivered to state granaries. This is why the introduction of a comprehensive system of managing production quality and regulating economic interrelations of APK partners are goals for today. The efforts of workers of scientific institutions as well as of partners in the republic's agro-industrial associations must be directed at meeting these goals.

Moreover, in the practice of price formation for agricultural products in order to calculate costs in procurement organizations and processing enterprises use accounting prices which are made up of average expenditures for procurement, price supplements and delivery to the reception point. The cost of products according to accounting prices and turnover costs of procurement organizations and processing enterprises make up the cost of raw materials. The difference between the cost of production according to wholesale prices and its cost comprises profits. It should be noted especially that accounting prices have been used for many years in the branch as a whole. For example, for the grain of individual crops they have been established on the average for the country, but the level of zonal procurement prices for these crops in the Kazakh SSR is significantly higher because 80-85 percent of the strong and durum wheat varieties are produced in our republic. Here it is important to emphasize that processing and procurement organizations quite often receive unjustifiably high profits from depressed accounting prices for other types of agricultural products too. For example; it is no accident that in dry 1982 the Kazakh SSR Procurement Ministry completed its fiscal year with profits of 257 million rubles while the producer of the products, the agricultural ministry, had 397 million rubles' worth of losses.

The aforementioned data attests to the fact that as a result of the use of depressed accounting prices the economic ties and results of economic activities of organizations and enterprises involved in the procurement and processing of agricultural products become distorted. The prerequisites are created for the posing of questions on violations of economic interrelations between procurers and producers of production and on reexamining accounting prices with the goal of decreasing budgetary allocations for making up the difference in prices and profits of organizations and enterprises that procure and process agricultural products. The results of the activities of procurement organizations and enterprises operating on cost accounting principles should not be affected by accounting prices but only by those expenditures which depend directly on their activities--production and turnover costs related to the reception, storage and processing of agricultural products.

In connection with this it would be more correct to evaluate products being delivered to procurement organizations and processing enterprises according to average prices for the Kazakh SSR zone with a consideration of quality; profits would then be determined according to the quantities needed to expand production and to develop funds for economic stimulation and for budget payments by using fixed producton funds earmarked for agricultural purposes.

The organizations of Sel'khoztekhnika [Agricultural Equipment Association] and Sel'khozkhimiya [Agricultural Chemical Association] are leading partners in the APK. At the present time they are practically on state subsidies because existing mark ups included in the price of goods do not make up for turnover costs and costs for economic stimulation funds.

With the goal of developing economically-sound interrelations the organizations of Sel'khoztekhnika and Sel'khozkhimiya and their sovkhozes and kolkhozes should move toward complete cost accounting. In this case they would repay their production expenses by means of mark ups for work done and services rendered and to provide sufficient profits to expand production.

An important task in increasing the role of financial resources of the APK is the effective use of bank credit in agriculture and economizing in general with regard to state financial resources. At the present time the republic's sovkhozes have accumulated almost 4 billion rubles of deferred loans.

An analysis of this data shows that in 1982 the proportion of bank credit forming turnover capital in sovkhozes was over 96 percent; in other words, many sovkhozes implement their economic activities primarily be means of bank credit. On the other hand, whereas the growth pace of production volume increased by a factor of 1.9 during 15 years of operations of sovkhozes under conditions of complete cost accounting, credit investments increased fivefold. Moreover, the structure of distribution of resources has deteriorated. For example, whereas in 1971 over 50 percent of credit investments comprised loans for expenditures in agricultural production and realizable assets securing fund turnover, in 1982 the proportion of such loans equalled about 18 percent and the remainder is used to repay delayed loans.

The strengthening of cost accounting, the observation of financial discipline and the efficient and strict standardization of the use of bank credit for fulfilling and overfulfilling the volume of production and for selling a complete nomenclature of goods are called upon to significantly confirm the role of the financial-credit mechanism.

Decreasing the cost of agricultural production is the next practical and decisive reserve for increasing financial resources and profitability in economic management.

At the present time the growth pace for production costs is significantly greater than that for delivery prices for almost all products (except grain, potatoes and poultry). In 1976-1980, for example, the difference between the cost and the delivery price of 1 ton of wool comprised 573 rubles; in 1982--1,344 rubles.

At the same time the level of profitability in grain production is fairly high in sovkhozes. During the last two five-year plans the republic has achieved great success in its production and procurement. The sovkhozes of the agricultural ministry received over 360 million rubles of clear profits even in 1982 with its difficult weather conditions; average annual profits for 1971-1981 reached 548 million rubles. But at the same time the size of total (balance) profits decresed by a weighty amount because of exceedingly high non-efficient results, which comprised an average of 490 million rubles during the aforementioned years. Of these 90 percent were for price cuts for transitional production reserves of seed, feed and young animals. Price cuts, as we know, represent the difference between actual costs and procurement prices. Expenses resulting from natural disasters are added to price cuts from transitional production reserves.

The results of operations of many leading enterprises in the republic, such as the Krasnoyarskiy Sovkhoz of Tselinograd Oblast, attest to the extensive existing reserves for decreasing production costs. Long-term data attests to the fact that average annual profits in the enterprise comprised over 3 million rubles and that the cost of 1 ton as compared to the republic average is significantly lower: grain--by 20 rubles 30 kopecks; potatoes--by 25 rubles 60 kopecks; vegetables--by 15 rubles 80 kopecks; beef--by 638 rubles 80 kopecks; and milk--by 50 rubles 40 kopecks, and so forth.

A distinguishing feature of the Krasnoyarskiy Sovkhoz as compared with other leading enterprises is that here for many years a stable and high profitability for production output has been achieved for all branches although the enterprise specializes in the production of seed from grain crops. The fact is that the sovkhoz utilizes a complex of factors effectively. In addition to specializing in the production of grain seed, the sovkhoz develops other branches efficiently. Complex mechanization and cost accounting have been introduced everywhere, accounts and controls are well-organized and socio-economic questions are dealt with on a sufficiently high level. The study and universal dissemination of the experience of Krasnoyarskiy Sovkhoz, with a consideration of the efficient utilization of complex measures passed by the party and state during recent years, will undoubtedly facilitate a successful

fulfillment of the goals set forth in the country's Food Program and the strengthening of financial resources at all levels of administration of Kazakhstan's agro-industrial complex.

The reserves of financial resources in the republic's APK are great. As an integral part of the total (gross) public product they are called upon to dependably regulate financial relations, to secure stable and large surplus products and the proper payment for labor, and to participate in the reproduction of fixed capital.

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MISMATCHING OF TRACTORS WITH OTHER ITEMS OF AGRICULTURAL EQUIPMENT

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/Article by L. Prishchep, VASKhNIL Academician and A. Yushin, head of the Department of Mobile Energy at the Ukrainian Scientific Research Institute of Rural Mechanization and Electrification and doctor of technical sciences: "Efficiency Factor of a Tractor Pool"/

/Text/ Over the past decade a considerable increase has taken place in the technical equipping of kolkhozes and sovkhozes throughout the country. The farms are being supplied with powerful tractors, self-propelled harvesting combines, loaders and other items of equipment. But the agricultural workers are disturbed over the fact that productivity is not increasing in harmony with improvements in the power ratings of the tractors. For example, compared to the T-74 tractor, the power ratings for the T-150K and K-701 tractors have been raised by a factor of 2-4 and yet the specific productivity of the units per horsepower of tractive power has decreased by 15-25 percent, with the expenditures for power and fuel increasing simultaneously by 10-15 percent. This tends to underscore the failure to make full use of the potential embodied in the new equipment.

The Power Rating Increased, But the Output...

Special importance is being attached at the present time to uncovering the reasons for the insufficient return from the work performed by units and high powered tractors and to establish methods for making their work more effective and more economic in nature. We are called upon to do this by the Food Program, approved during the May (1982) Plenum of the CPSU Central Committee.

Many years of experience and tests carried out on new equipment have shown that a disparity exists between the parameters and operational indicators of powerful tractors and working machines. During the creation of powerful tractors, the selection of their more important parameters was carried out based upon conditions for their optimum use at speeds of from 9 to 15 kilometers per hour. The solution for the high speed problem stipulated that during this same interval for the working speeds, the machines and implements must ensure high quality fulfillment of the operations, while maintaining the specific tractive resistances at the level of serially produced machines, which operate at speeds of from 6-9 kilometers per hour.

But in actual practice we still have not been able to achieve such conformity. For example, when work is carried out at speeds of from 9-15 kilometers per hour, the quality of the work carried out suffers and a sharp increase is observed in the tractive resistance of the working machines and this leads to a reduction in the productivity of the units and to an increase in power and fuel expenditures. High speed plows do not ensure the required breaking up of a soil layer, mass plowing or the covering over of plant residues. Similar situations prevail with regard to the work of other soil cultivation and sowing machines.

All of this dictates a need for developing a series of high speed machines and implements, with emphasis being placed upon finding new working organs and technological means and methods which will ensure the quality required in the operations carried out.

In connection with the introduction of progressive industrial technologies for the cultivation of agricultural crops, extensive use is being made of wide-swath multiple-purpose units which carry out several operations during one pass, for example the pre-sowing tilling of soil, sowing and fertilizer and herbicide applications. The experience of many farms has shown that the use of such units is making it possible to raise the productivity of the units by a factor of 1.5-2, lower fuel expenditures by 11-15 percent and ensure proper workloads for the powerful tractors. In the process, improvements are taking place in the agrotechnical qualities of the work being carried out, the units are having to make fewer passes over a field and the period between the tilling of the soil and sowing is being shortened and this is promoting an increase in cropping power.

However the use of multiple-purpose machines on an extensive scale is being held up by a lack of suitability of the tractors for the ganging of the units and this underscores the need for developing new requirements for the structural-component arrangements, in conformity with future industrial technologies and the technological methods for carrying out operations.

The imperfections in some types of tractors, an insufficient number of attachable and towed implements for use with them and their lack of conformity are resulting in great overexpenditures of fuel and lubricating materials and in a reduction in the return from the powerful items of equipment.

Experimental models of all-purpose tractor cultivators with a power rating of 150 horsepower have been created at the Minsk (MTZ-142) and Lipetsk (LTZ-145) tractor plants and are undergoing state testing. Of these two machines, we wish to single out the LTZ-145. And here is why. The LTZ-145 tractor has a basically new structural-component arrangement -- four leading steerable wheels of the same size, a cabin located in the central portion (between the axles). It is equipped with forward and rear mechanisms for attaching machines and it has an independent synchronized power take-off. On the rear semi-frame of the tractor, there are areas for the installation of grain, herbicide and fertilizer containers.

The use of STZ-145 tractors for the cultivation of row crops ensures high quality work, the introduction of progressive industrial technologies and an

increase by a factor of 1.4-1.9 in the carrying out of an entire complex of operations compared to the MTZ-80 tractors.

Unfortunately, for a long period of time Minsel'khozmash /Ministry of Tractor and Agricultural Machine Building/ has not been able to finish off the LTZ-145 tractor. Nor has a complex of working machines been created during this period for ganging to it, machines which would conform to the tractor in terms of weight, technological speeds, width of swath and methods for connecting up to the tractor, all of which would ensure the completion of the multiple-unit assemblies.

An All-Round Approach Is Needed

The mass use of assemblies with multiple-unit machines for the cultivation of row crops is possible only when T-150K tractors are equipped with the required additional items of equipment.

Despite the fact that the development of such equipment has been approved by the NTS /Scientific and Technical Council/ of the department of the chief designer for the Kharkov plant and the combined NTS of the Ministry of Agriculture for the Ukrainian SSR in 1976, they still have not been introduced for use of the T-150K tractors. Unfortunately, the modernization carried out on these machines by the Kharkov plant was limited mainly to raising the power rating of the engine and this barely produces any noticeable effect for agriculture.

The unsuitability of the tractors for ganging with a varied complex of pull-type and attachable machines, owing to the absence of the necessary additional equipment, has given rise to a by no means justified trend towards the mass production of self-propelled highly specialized machines (for example, the SPS-4.2 beet loader and others). Their use will lead to a "freezing" of large quantities of metal, power capabilities and monetary and labor resources with comparatively low workloads and will place a heavy burden on the farms.

In the process of creating new and modernizing existing equipment, special attention must be given to lowering its material intensiveness. At the present time, the weight of the tractors and working machines, according to our computations, has been raised by 15-20 percent and this is limiting to a substantial degree the installation on them of technological containers with the required volumes and wide-swath attachable multiple-unit machines and this is resulting in excessive compaction and disintegration of the soil's structure. Moreover, after a sowing machine has completed a run over such compacted soil, it turns out that the seed has not been placed at the proper depth and this results in a thinning out of the plantings and in a reduction in cropping power.

In conclusion it bears mentioning that the shortcomings in the creation of new and the modernization of existing equipment, in our opinion, are the result of separate planning and design for the creation of tractors and working machines and they also derive from the absence of scientifically sound agricultural requirements for their creation, requirements which take into account the introduction of progressive technological means and methods for the carrying out of operations.

A modern multiple-unit assembly is a complicated system, all elements of which are closely interrelated and mutually dependent. Within such a system a tractor must be viewed not only as a means for supplying power but also as a unifying element for the entire assembly. Thus a conversion must be carried out from spearate planning for and the creation of tractors and working machines to the planning and creation of highly productive wide-swath machine-tractor assemblies which, based upon the introduction of progressive industrial technologies, will ensure a sharp increase in the efficiency and economic nature of their use.

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