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SELECTED TRANSLATIONS OF
ABSTRACTS IN REFERATIVNYY ZHURNAL - BIOLOGIYA, No.1, 1959

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SELECTED TRANSLATIONS OF
ABSTRACTS IN REFERATIVNIY ZHURNAL - BIOLOGIYA, No. 1, 1959

This report consists of complete translations of the Russian-language abstracts of articles, which were originally published in the Sino-Soviet bloc and in Yugoslavia.

The subject classification system used in the Russian-language abstracts has been followed in this publication.

DTIC QUALITY INSPECTED 8

RUMANIA / Weeds and Weed Control.

N

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1924

Author : Stere, Grigore
Inst : Timisoara Agricultural Institute
Title : Investigation of Infected Plants in Marsh
Soils

Orig Pub : Anuarul lucrar. stiint., Inst. agron. Timisoara,
Bucuresti, 1957, 61-72

Abstract : Results are presented of a study of infection
(in winter sowings, summer sowings, cultivated
plants, and garden plants) in 2 types of soils:
marsh soils and marsh-saline soils. --
L. D. Stonov

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USSR / Weeds and Weed Control.

N

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1925

Author : Guzairov, Kh. Kh.
Inst : Bukhara State Pedagogical Institute
Title : Data on a Method of Investigating Soil for
Contamination with Weed Seeds

Orig Pub : Uch. zap. Bukharsk. gos. ped. in-t, Tashkent,
1957, 43-47

Abstract : A device is described for excavation to a depth
of 5 cm and more (in layers) for soil specimens
in determining soil contamination with weed
seeds.

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1929

Author : Gorst, G.

Inst : Not given

Title : Control of Wild Oats and Treatment of Irrigated Land in Semipalatinskaya Oblast'

Orig Pub : S.-kh. Kazakhstana, 1957, No 10, 27-32

Abstract : A new system has been revealed for the treatment of irrigated lands in Semipalatinskaya Oblast'. For speedier extermination of wild oat seeds in the entire arable layer the fallow must be plowed in the fall instead of in the spring. The first two light layers of fallow should be plowed normally to the whole depth with a mold-boardless plow with simultaneous harrowing, and the cultivation which follows should be made to

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1929

a depth of 6-8 cm, depending on the appearance of weed shoots. If the summer is dry, it is necessary, as a routine measure, to irrigate the fallow intended for the seeding of winter crops at the end of July or beginning of August. Then a careful pre-sowing tilling is applied to the depth of the covered seeds. Such a type of black fallow is only applied to irrigated fields which have become very contaminated with wild oats before they have been actively used, and to non-irrigated contaminated lands. Excellent results were obtained on fallow seeded with alfalfa. -- L. D. Stonov

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N

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1932

Author : Beshanov, A. V.

Inst : Not given

Title : An Experiment on Eradicating Quarantine Weeds
of Ambrosia trifida

Orig Pub : S.-kh. Povolzh'ya, 1958, No 1, 52-54

Abstract : At "Krasny" Sovkhoz in Kuybyshevskaya Oblast' grain sowings were treated with 2,4-D from an airplane. Twofold treatment against Ambrosia trifida was one hundred percent effective. Dosages of the preparation were 1.8 and 1.5 kg/hectare. The cost of the plane spraying was 55 rubles per hectare. -- L. D. Stonov

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N

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1933

Author : Vasil'yev, D. S.

Inst : Not given

Title : Methods of Controlling Common Ragweed

Orig Pub : S.-kh. Kubani. Inform. byul., 1957, No 1, 38-48

Abstract : Presowing tillage and the cutting of the mass shoots of these weeds drastically reduced contamination of sunflowers and corn by ragweed. A dosage of 2 kg/hectare of 2,4-D, applied before corn sprouts appeared, reduced ragweed contamination on the fields by 87.6%, and the corn yield increased 6.5 centner/hectare. The best dosage for spraying of the corn sprouts was 0.8 kg/hectare. Higher doses of 2,4-D had an adverse effect on the corn and lowered the

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1933

harvest. Burning the left-over stalks after reaping the badly contaminated cultivated plants was an extremely good prophylactic measure. Spring occupancy of partially fallow land was an effective means of coping with contamination of the soil with ragweed seeds. Ragweed was suppressed best of all with 2,4-D on untreated lands. For its complete suppression 2 kg/hectare were sufficient. Later on (from the stage of 2-3 pairs of leaves), resistance of the plants to the herbicide increased, and the killing dosages were increased to 2.5 kg/hectare. -- L. D. Stonov

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1934

Author : Bezruchenko, N. Z.
Inst : Azovo-Chernomorsk Agricultural Institute
Title : An Experiment on the Application of Preparation No. 39 for Extermination of Common Ragweed (*Ambrosia artemisiaefolia* L.) and Greater Dodder (*Cuscuta campestris* Juncker)

Orig Pub : Sb.: nauchno-issled. rabot. Azovo-Chernomorsk. c.-kh. in-t, 1957, 15, 227-235

Abstract : During 1955-1956 on unoccupied lands in the Rostovskaya Oblast' preparation No. 39 (I), a waste product of industrial enterprises of that area, was tested. A 100% extermination of ragweed and dodder was accomplished using a

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1934

standard of 2 liters per 10 m² of treated surface. It acted as a herbicide with contact action. -- L. D. Stonov

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1935

Author : Kleytman, F.
Inst : Not given
Title : Extermination of Dodder

Orig Pub : Zemledeliye i zhivotnovodstvo Moldavii, 1958,
No 1, 70-71

Abstract : For the extermination of dodder the focus of the parasite was manually removed by the pulling out and burning of the weeds and by the immediate spraying of the site with carbolineum solution. Uncut foci of the dodder were successfully sprayed with 2 kg/hectare of 2,4-D. Ammonium dinitrophenolate (18-20 kg/hectare) was effective on dodder sites. Emphasis is placed on the correct storing and transportation of manure

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1935

in dodder control. Manure should only be applied to the soil in a thoroughly rotted condition. -- L. D. Stonov

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N

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1940

Author : Shtina, E. A.
Inst : Kirovo Agricultural Institute
Title : Effect of Herbicide 2,4-D on Soil Algae

Orig Pub : Tr. Kirovskogo s.-kh. in-ta, 1957, 12, No 24,
29-34

Abstract : In the cultivation of perennial oats a twofold spraying of the plants with 2,4-D (I) was applied: 1 kg/hectare in the stage when the plants were emerging from the ground and 1.5 kg/hectare in the earing phase. There was no noticeable effect on soil algae with doses of I up to 1.5 kg/hectare. In laboratory experiments I was applied in the form of 0.3% and 1% solutions. After the first and second treatments

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1940

the total number of algae remained approximately the same as in the control soil, and only after the third application of the herbicide did the number of algae diminish up to 73% in comparison with the control. The number of blue-green algae, represented almost exclusively by *Phormidium autumnale*, was notably reduced even after the first dose of herbicide and had practically disappeared by the end of the experiment. The number of diatomic algae also was appreciably reduced. Green algae predominated in the soil treated by I. Favoring the growth of algae in soil, I is desirable for turf-podzolic soils. Combined application of mineral fertilizers and reduced doses of I could

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1940

also serve as a means of promoting the development of soil algae. -- L. D. Stonov

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N

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1941

Author : Stancevičius, A.
Inst : Not given
Title : Methods of Weed Control

Orig Pub : Soc. Žemės ukis, 1957, No 12, 9-14

Abstract : No abstract given

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N

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1942

Author : Makarova, V. A.
Inst : Zernograd State Selection Station
Title : Industrial Experimentation and Introduction
of Chemical Weeding of Seeds of Grain Plants
in Rostov Region

Orig Pub : Sb. nauchn. rabot. Zernogradsk, gos. selekts.
st., 1957, vyp 2, 152-173

Abstract : The chemical weeding of grain plantings using
2,4-D and MCPA in a dosage of 1 kg/hectare
destroyed 60-80% of the weeds, and sometimes
100%; the harvest was increased 1-2 centner/
hectare, and in some cases 4-5 centner/hectare.
The quality of the crop was improved, con-
tamination reduced, water-content of the

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1942

kernels lessened, and absolute weight increased. Wild turnip, bindweed, hemp, and sunflower were very sensitive to the herbicide; less sensitive were the weed *Falcaria rivini*, spurge, saltwort, and sweet clover; *Acroptilon picris*, wild pea (*Lathyrus*), and milkweed were resistant to the herbicides. The best time for the spraying of sowings of ear-producing plants and millet was the tillering period. If it is possible to apply chemical weeding in the tillering phase, it is safe to begin it in the period of full sprouting and to continue it during the shooting phase. -- L. D. Stonov

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YUGOSLAVIA / Weeds and Weed Control.

N

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1943

Author : Arsic, Miloslav; Vojvodic, Djordje;
Janjatovic, Vera

Inst : Not given

Title : Extermination of Broad-Leaved Weeds in Corn
by Herbicides of the Hormone Type Applied
Before the Appearance of Young Growth

Orig Pub : Archiv poljopr. nauke, 1957, 10, No 29, 91-96

Abstract : The application of 2,4-D and MCPA to corn eight days after sowing can keep the plot clean of weeds and eliminate mechanical working for a month. The treated corn plants have somewhat augmented organs, and increased lateral and adventitious roots. The cells

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YUGOSLAVIA / Weeds and Weed Control.

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1943

are more quickly differentiated. The yield
is not reduced. -- L. D. Stonov

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1944

Author : Kargapolova, A. P.
Inst : Altay Agricultural Institute
Title : Chemical Method of Destroying Weeds in Corn
Plantings

Orig Pub : Tr. Altaysk. s.-kh. in-tn, 1957, vyp 5, 118-123

Abstract : Preparations of 2,4-D and MCPA were studied
in 1956 at the training-experimental farm of
the Altay Agricultural Institute; certain plots
were sprayed with doses of 1.5 and 2 kg/hectare
for 2-3 days before the corn emerged from the
ground. Then these same plots were sprayed
with a dose of 0.4-0.5 kg/hectare during the
4-5 leaf stage. In the second variant 0.8-1.0
kg/hectare of the spray was applied to the

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1944

plots in the 4-5 leaf stage. In the third variant the plots were sprayed in the 8-9 leaf stage with a dosage of 0.8-1 kg/hectare of active ingredients. The standard amount of solution used was 200 liter/hectare. The most effective variant was a combination of spraying before sprouts appeared and in the phase of 4-5 leaves with preparations of 2,4-D or MCPA in a dosage of 2 + 0.4 kg/hectare. Contamination by broad-leaved weeds was lessened 87-93%, part of the weeds germinating with the grains were killed, and the harvest of the green portion of the corn increased 12.5-20.5%. MCPA herbicide gave the best results. --
L. D. Stonov

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1945

Author : Berezhovskiy, M. Ya.

Inst : Not given

Title : Herbicides and Perspectives of Their Application

Orig Pub : Zashchita rast. ot vredit. i bolezney, 1958, No 2, 28-31

Abstract : Characteristic of the recent industrial development of herbicides is the trend toward specialization. Substances have appeared which, on the strength of high selectivity, destroy many types of weed plants and are not toxic for specific plants. 2-chloro-bis-ethylamino-triazine (simazin) is a special herbicide for corn plantings. Introduced into

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1945

the soil in a dosage of 1-2 kg/hectare simultaneously with the sowing, it is injurious to the weeds and does not harm the corn. 2-chloro-bis-diethylaminotriazine (chlorazine) is a specific herbicide for the cotton plant. Chloro-N,N-diallyl acetamide is harmful to annual grass weeds in corn plantings; α -naphthyl-phthalamic acid exterminates weed annuals in squash sowings. The best preparations with a general action are N-4-chlorophenyl-N, N-dimethylurea (monuron) and N-3,4-dichlorophenyl-N, N-dimethylurea (diuron). 3-amino-1,2,4-triazole has a broad range of herbicidal action. Of the new, highly effective herbicides there are known 2-(2,4,5-trichlorophenoxy)-propionic

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1945

acid and 2-(2,4,5-trichlorophenoxyethyl)-2, 2-propionate (arbor). -- L. D. Stonov

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N

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1947

Author : Brzhezitskiy, M. V.; Akhmedbeyli, G. A.
Inst : Not given
Title : Characteristics of Germination in Weed Seeds
Harmful to Cultivated Plants in Ansheron
(Vegetables)

Orig Pub : Uch. zap. azerb. un-t, 1957, No 9, 65-70

Abstract : Annual and short-lived weeds predominate. Perennials play a negligible role. Weed seeds can be divided into 2 groups: long latency with short-lived ones and latency of short duration. These are typical of annual weeds and partly of perennials. In order to exterminate weeds which appear in the

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1947

fall after the first rains, it is necessary to make extensive use of shallow plowing. --
L. D. Stonov

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1949

Author : Sevast'yanova, M. I.
Inst : Not given
Title : Herbicides in Vegetable Farming

Orig Pub : Sad i ogorod, 1958, No 4, 23-25

Abstract : In experiments made by the Scientific Experimental Institute of Vegetable Farming excellent results were obtained in the treatment of carrot sowings in the 2-3 leaf stage, using tractor kerosene at the rate of 300 kg/hectare. Rows were sprayed, and in between the rows the soil was treated with cultivators. 98-100% of the weeds were killed. As a result of application of chloro-PC on the 5-6th day after seeding of the carrots (12 kg/hectare of

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1949

active ingredients), 53% of the weeds perished. The harvest of carrots on the section treated with chloro-PC was higher than in the control where the vegetables were twice weeded by hand. In treating the rows only with a KRN-2,8 appliance on the cultivator, the herbicide dose could be less than half. In the treatment of onion seeds before sprouts appeared (on the 8th day after sowing) with 16 kg/hectare of chloro-PC, 500.2 centner/hectare of seedlings were obtained, and in the control - 4.8 centner/hectare 8.2% of the weeds were killed. Daisies and everlasting were resistant. On the sowings of carrots and onions excellent results were obtained from the application of TCA. In the treatment of carrots

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1949

before the appearance of young growth, 6 kg/hectare of TCA killed 56.3% of the weeds, and the carrot yield was 27.4 centner/hectare, and in the control - 237 centner/hectare. For blackseed onions the best dose was 16 kg/hectare of active ingredients before sprouts appeared. On onion sowings in adequately moist areas calcium cyanamide (200-300 kg/hectare) was applied. It was applied after the sowing 2-3rd day before sprouts appeared) and over the sprouts when the onion plants were 5-8 cm high. The common onion in the stage of 4-5 leaves was treated with triethanolamine salt of dinitrophenol (8-12 kg/hectare). 83.2-84.7% of the weeds were killed. Burning of the leaf tips did not prevent a harvest of the common

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Abs Jour : Ref Zhur- Biologiya, No 1, 1959, No. 1949

onion 15.2-22.6% higher than in the control.
-- L. D. Stonov

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USSR / Weeds and Weed Control.

N

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1950

Author : Zuyeva, N. O.

Inst : Not given

Title : Control of Annual Grass Weeds

Orig Pub : Sad i ogorod, 1958, No 4, 28

Abstract : In 1956-1957 the Sumsk Agricultural Station studied the influence of chloro-PC (I) and TCA (II) on weeds of grass families in sowings of carrots of the Gernad variety. I in doses of 4 and 8 kg/hectare and II in doses of 12 kg/hectare of active ingredients were applied prior to the sowing of the carrots with a fixed harrow. The standard output of liquid was 500 liter/hectare. I influenced the growth of the carrots, and II inhibited germination of

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1950

the seeds, but the effect was stronger on the weeds. In variants to which the herbicides were applied, contamination by bristly foxtail grass was less than in the control. I also suppressed pigweed. I increased the harvest and average weight of the tubers, and II decreased the number of plants on 1 hectare and the total harvest despite the fact that the average weight of the tubers in this variant was highest. Application of I on carrot sowings in the amount of 8 kg/hectare increased the harvest 40-65%. -- L. D. Stonov

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