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USSR Report

AGRICULTURE

(FOUO 2/81)

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AGRO-ECONOMICS AND ORGANIZATION

IMPROVED PLANNING CALLED FOR IN SEED PRODUCTION

Moscow SELEKTSIYA I SEMENOVODSTVO in Russian No 2, Mar-Apr 81 pp 2-3

[Article by G.I. Larionov, 1st Deputy Chief of the All-Union Production Association for High Quality Seed Production: "Improving the Level of Planning in Seed Production"]

[Text] During the past 2 years, substantial changes have taken place in the development of the productive forces of agriculture. The logistical base has been strengthened considerably and the power-worker ratio has increased sharply. Specialization and concentration based upon interenterprise cooperation and agro-industrial integration are undergoing further development. All of these factors require improvements in planning at all levels of control over agricultural production.

The decree of the CC CPSU and the USSR Council of Ministers entitled "Improvements in the Planning and Economic Stimulation of Production and the Procurements of Agricultural Products (1980) calls for a broad system of measures aimed at improving the economic mechanism in agriculture, further increasing the production and procurements of agricultural products and strengthening the kolkhoz and sovkhoz economies. A basically new system for planning and stimulation is set forth in the decree.

A most important trend with regard to raising the level of planning work, as emphasized in this document, is that of raising the efficiency of social production based upon accelerated scientific-technical progress and an intensification of the role played by the intensive factors of development. The five-year and annual plans for agricultural development must ensure a balance between the production volumes and state procurements of products on the one hand and the available and allocated logistical and financial resources, fixed productive capital and capital investment volumes on the other.

The plans call for achieving a correct combination of centralized agricultural management with further development of the economic independence of enterprises. Excessive trivial guardianship over the farms by their leaders and specialists is being eliminated. At the same time, an increase will take place in the responsibility of leaders, specialists, kolkhoz members and workers for increasing output production and also in the interest they display in the final results of their labor.

In developing the plans for economic and social development, provision was made for establishing uniform state plans for the procurement of agricultural products for the five-year period (with a breakdown by years). In the process, special attention was given to improving the utilization of land, productive capital and material and labor resources and also to giving greater consideration to the production specialization of farms and to the natural and economic factors.

Today the higher organs are providing the farms with a strictly limited number of indicators: for kolkhozes -- only the procurement volumes for agricultural products, the quantities of equipment, mineral fertilizers and other important logistical resources delivered, the tasks for introducing scientific-technical improvements into operations; for sovkhozes and other state agricultural enterprises and associations, in addition -- wage fund (normative), profit plan, the placing in operation of fixed capital, capital investment limits, construction-installation and contractual work.

The volume of output production, the size and structure of the areas under crops, number of animals, cropping power of the crops and animal productivity, the production technology and organization and other indicators of development must be prepared directly on the farms.

Such an approach to this important work is providing a broad expanse for human initiative and creativity and it is opening up vast opportunities for uncovering new reserves and for improving operational efficiency and quality.

In the interest of further motivating the kolkhozes and sovkhozes towards increasing the production and procurements of farming and animal husbandry products, the decree calls for a bonus amounting to 50 percent of the procurement prices to be paid out during the Eleventh Five-Year Plan, for the sale of products to the state, over and above the average level achieved during the Tenth Five-Year Plan.

This level will remain constant for determining the quantity of products for which the bonus, added on to the prices, should be paid out during each year of the five-year plan.

The decree calls for a number of measures to be carried out which will make it possible to link wages more closely with the final results of work and to interest agricultural workers, to a greater degree, in increasing output production and improving its quality. Better incentives will be issued for the work performed by crop husbandry and animal husbandry workers and leading workers and specialists who achieved high indicators. In the process, such motivation will be aimed at raising labor productivity, lowering production costs, increasing output production compared to previous years, increasing the production of high quality feed, raising the cropping power of the crops and the productivities of the animals, improving the quality of the products and other operational indicators.

Taking into account the exceptional importance attached to seed production for raising production efficiency and in the interest of implementing a uniform technological policy in this branch, the USSR Ministry of Agriculture has been enjoined to develop and approve, for specialized farms of union subordination, plans for the production and distribution of high quality seed. The councils of ministers

of union and autonomous republics, kray executive committees, oblast executive committees and rayon executive committees, when establishing the plans for the state procurements of agricultural products for seed production farms of union subordination, are obligated to proceed on the basis of the need for ensuring the priority fulfillment by these farms of the plans approved for them for the production of high quality seed.

In conformity with the decree of the CC CPSU and the USSR Council of Ministers entitled "Measures for Further Improving Plant Breeding and Seed Production for Grain, Oil-Bearing Crops and Grasses" (1976), the councils of ministers of union republics which do not have oblast subdivisions, the councils of ministers of autonomous republics, kray executive committees and oblast executive committees establish the sales plans for specialized seed production farms for the sale of high quality seed for grain and oil-bearing crops and grasses, in volumes which will satisfy the requirements of kolkhozes, sovkhozes and other state agricultural enterprises not engaged in the production of seed and also plans for the seed production farms for the procurement of high quality seed for the state resources. The observance of planning discipline, in conformity with the seed production system adopted throughout the country, and ensuring that the kolkhozes, sovkhozes and other state enterprises are supplied with seed, will undoubtedly promote considerable improvements in the efficiency of agricultural production.

The decree opens up broad opportunities for raising the level of seed production work and for ensuring that the annual production fully meets the requirements for high quality seed and in the required assortment.

However, it bears mentioning that many experimental-production farms of scientific-research institutes, the training farms of VUZ's and technical schools and specialized seed production farms are still not being provided with sowing plans and they are receiving tasks for the production and sale of various types of agricultural products, with no thought being given to their principal specialty -- the production of high quality seed and hybrid seed. There have also been incidents of considerable quantities of seed grown at specialized seed farms -- seed of high reproductions, deficit seed and seed of promising varieties -- have been used for forage or are being sold as ordinary grain. For example, in 1980 the specialized seed production farms in the Armenian SSR should have sold 19,000 tons of seed for grain crops but actually sold only 2,700 tons, or 14 percent of the plan, despite the fact that the production plan for such seed was fulfilled by 122 percent. Similar facts have been recorded in the Uzbek SSR and in a number of oblasts in the Russian Federation. The Asureti, Lambaloyskiy and Dzhordeashvili Specialized Seed Farms and Sortsemprom [All-Union Production Association for High Quality Seed Production] for the Georgian SSR planned to expand their production of seed, during 1981, for corn, oats and other spring crops. However, the rayon organizations, failing to consider the production plans for seed for the mentioned crops, provided them with raised tasks for the sowing of winter wheat -- greater by a factor of 2-2.5 than the amount of winter wheat called for in the sowing plan structure.

The kolkhozes and sovkhozes are presently being provided with planning indicators for 1981 and for the Eleventh Five-Year Plan on the whole which, in conformity with the decree, must take into account the specialization of the farms. However, it is

unfortunate that this is still not being carried out in all areas. For example, the collective at the Zarechnyy Specialized Seed Farm in Stavropol'skiy Kray, for the Eleventh Five-Year Plan, developed a seed production program for grain, pulse and oil-bearing crops and also alfalfa and, taking this program into account, planned the capital investments for the 1981-1985 period and for the period up to 1990. Nevertheless, despite the above, the Agricultural Administration of the Georgiyevskiy Rayon Executive Committee provided it with a sowing structure which does not take into account the production of seed.

The country has entered the 1980's, a period which will be marked by new qualitative changes in agriculture, by a strengthening of its contacts with other branches of the economy and by further development of the agro-industrial complex for ensuring that the country is reliably supplied with food products and raw materials.

In connection with solving the great and complicated tasks confronting the agricultural workers, a very important role must be played by the agronomists.

In a welcoming speech addressed to those participating in an agricultural conference held in Moscow in late December of last year, L.I. Brezhnev stated: "The obligations of agronomists, engineers, technicians and the entire army of machine operators include -- efficient utilization of the increasing economic potential, improving the organization of labor and production, actively introducing scientifically sound farming systems and industrial technologies and obtaining a maximum return in the form of yields from all investments of labor and resources.

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TILLING AND CROPPING TECHNOLOGY

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IMPORTANCE OF INCREASED PRODUCTION OF CORN GRAIN STRESSED

Moscow KUKURUZA in Russian No 2, Mar-Apr 81 pp 1-4

[Article by A. I. Zholobov, chief of the Main Administration of Grain Crops and General Problems of Agriculture of the USSR Ministry of Agriculture: "Prospects For the Production of Corn Grain During the Eleventh Five-Year Plan"]

[Text] The country has embarked upon the Eleventh Five-Year Plan. The agricultural workers, similar to all Soviet people, have commenced the work of carrying out the decisions handed down during the 26th party congress.

The Communist Party and Soviet Government are devoting daily attention to agriculture. The implementation of the historic decisions handed down during the 25th party congress has been manifested in the annually increasing appropriations for the further development of agriculture: the flow of equipment into the rural areas is increasing, greater quantities of mineral fertilizers and toxic chemicals are becoming available, newly reclaimed lands are being placed in operation and construction is being carried out in an active manner.

The implementation of a long-term program for the development of agricultural production is proceeding on the basis of a general path developed by the party -- a path for further specialization and concentration based upon agro-industrial integration.

In agriculture, importance is attached to increasing the production of all types of products. But the principal task has been and continues to be that of increasing the gross harvest of grain. This is why the party has assigned the task of producing 1 ton of grain per capita throughout the country prior to the end of the Eleventh Five-Year Plan.

In solving the grain problem in the USSR, a great role must be played by corn. It surpasses all other grain forage crops in terms of its cropping power and feed qualities. Its grain is an irreplaceable component of the mixed feed industry and a valuable raw material for the food, medical and a number of other branches of industry.

The cropping power of corn is steadily increasing. On the average for the country, it amounted to: during the Seventh Five-Year Plan -- 22.8 quintals per hectare, the Eighth Five-Year Plan -- 27, the Ninth Five-Year Plan -- 28.2 and during the Tenth Five-Year Plan -- 32.4 quintals per hectare.

During the 1978-1980 period, the production of corn grain in the Uzbek, Kazakh, Kirghiz, Tajik and Turkmen SSR's increased considerably compared to previous five-year plans.

However, by no means is full use being made of the yield potential of this crop. The gross yield of its grain, for the country on the whole, remains at practically the same level. This is explained first of all by an unjustified reduction in the sowing areas, by insufficient use of irrigated land, by a low proportion of early-ripening hybrids in the plantings and by a low level of concentration of corn plantings in zones considered most favorable for them.

The logistical base for the production of corn grain at many kolkhozes and sovkhozes continues to remain weak: there is a shortage of improved equipment and highly effective herbicides and insufficient quantities of organic and mineral fertilizers are being applied to the soil. At the same time, the resources being allocated are quite often being used in an inefficient manner. Serious shortcomings exist in connection with plant breeding and seed production in behalf of this crop.

ecent decrees concerned with improvements in plant breeding and seed production for corn and also with accelerating the introduction of an industrial technology for its cultivation have called for the creation of a reliable foundation for achieving radical improvements in the production of grain.

The USSR Ministry of Agriculture and the All-Union Academy of Agricultural Sciences imeni V.I. Lenin have developed a complex program for raising the cropping power and increasing the gross yields of corn grain during the next few years, based upon improved use of the resources being allocated, an expansion of the sowing areas, especially on irrigated lands, the application of complete dosages of fertilizers, the conversion over to an industrial cultivation technology, improvements in seed production and the introduction of highly productive hybrids, including early-ripening ones.

Corn Sowing Areas and Their Disposition

Taking into account the agroclimatic conditions found in the various zones of the country and the biological characteristics of the new corn hybrids and varieties, the possibility exists of expanding the corn plantings for grain to 5.1 million hectares (see Table 1) and mainly on irrigated lands, where it surpasses the cropping power of other grain crops to a considerable degree.

During the 1975-1979 period, the average corn grain yield for the country as a whole surpassed barley in terms of cropping power by 25.4 quintals per hectare, oats -- by 29 quintals per hectare and winter wheat -- by 17.2 quintals per hectare.

At the same time, the extent to which corn grain is being grown on irrigated land is still negligible. Of the overall plantings of agricultural crops on 12.9 million hectares of irrigated land, corn for grain is being cultivated on only 525,000 hectares, or 4 percent of the area. At the same time, computations reveal that a real opportunity exists for planting corn on 1.2 million hectares of this land, that is, 32 percent of the grain crop area.

The data of scientific-research institutes and foreign experience testify to the fact that corn can be grown on irrigated land when there is a maximum saturation of the crop rotation plans and also on permanent tracts.

The grain crop plantings in zones of adequate and stable moisture must be expanded simultaneously. In Moldavia they will be increased from 365,000 to 458,000 hectares (50 percent of the grain fields) and in the Ukrainian SSR the area devoted to corn for grain can be expanded from 1.5 to 2.8 million hectares, including in the forest-steppe region from 0.4 to 0.62 million hectares.

Overall, in the zones considered most favorable for the cultivation of corn in Moldavia, in the western and forest-steppe oblasts of the Ukraine and in the north Caucasus, including irrigated land, the area devoted to corn will increase from 2.1 to 3.7 million hectares. Seventy one percent of the corn will be grown in these zones and the proportion of corn grown for grain purposes will be raised here. We believe it to be wrong when, in zones where corn ripens for grain, large areas are occupied by silage plantings. For example, in the north Caucasus the silage plantings exceed the plantings for grain by a factor of 2.3 and in the steppe and forest-steppe regions of the Ukraine -- by a factor of 2.1. At the same time, the experience of foreign countries testifies to the contrary, that is, in those areas where corn ripens for grain the plantings of corn for silage are reduced considerably. In the U.S.A. they amount to 15 percent and in Hungary -- 18 percent of the area sown in corn for grain.

According to experimental data supplied by the Scientific Research Institute of Animal Husbandry For the Forest-Steppe and Forest District of the Ukrainian SSR, the yield in feed units is as follows when harvested: during the grain formation phase -- 31 quintals per hectare, during the phase of milky ripeness -- 55 quintals, during the phase of milky-waxy ripeness -- 81 quintals and during waxy ripeness -- 96 quintals per hectare. This is why the proportion of corn for grain plantings, with regard to the overall grain plantings, should be increased in those zones considered favorable for the growing of corn for grain. However, it still remains low: in Krasnodarskiy Kray, for example -- 13.6, in the Kabardino-Balkarskaya ASSR -- 37, in the Severo-Osetinskaya ASSR -- 40 and in the Ukrainian Steppe -- 13 percent.

The level of concentration of corn for grain plantings is not very high. Throughout the country as a whole, the production of such grain is presently being carried out by 11,534 farms, of which number 46 percent have areas less than 100 hectares in size, 19 percent -- 101-200 hectares, 10 percent -- 201-300 hectares, 7 percent -- 301-400 hectares and 18 percent -- in excess of 400 hectares. Hence, increased concentration in the production of this grain in rayons and on farms having the best conditions is considered to be a priority measure for increasing the production of grain. This is clearly borne out by the experience of the Kolkhoz 40 Let Oktyabrya in Panfilovskiy Rayon, Taldy-Kurganskaya Oblast. Here, of 14,000 hectares of arable land, 9,000 hectares are used for corn grain and each year this crop produces stable and high yields. In 1980, 70.3 quintals of grain were obtained from each of 8,955 irrigated hectares, with more than 90 quintals per hectare being obtained from commodity plantings. The kolkhoz sold 62,000 tons of grain to the state, of which amount 24,300 tons consisted of hybrid and 1st class seed.

TABLE 1

Sowing Area For Corn For Grain (thousands of hectares)

Republic	Average for 1976-1980 (in advance)		1981		1985	
	Total	Including on Irrigated Lands	Total	Including on Irrigated Lands	Total	Including on Irrigated Lands
USSR	2979	525	4222	763.5	5113	1208
RSFSR	644	100	1000	133.0	1100	185
Ukrainian SSR	1509	95	2257	200.0	2750	350
Uzbek SSR	151	140	214.3	200.1	285	271
Kazakh SSR	98	95	110	105.8	200	195
Georgian SSR	130	13	130	13.5	165	50
Azerbaijan SSR	10.2	7	12	6.9	23	9
Moldavian SSR	362.0	14	411	30.0	458	30
Kirghiz SSR	39.0	29	43.2	32.8	70	60
Tajik SSR	9.2	7	14.0	12.0	22	19
Armenian SSR	0.3	0.1	0.3	0.2	0.5	-
Turkmen SSR	26.0	25.0	30.0	29.1	40.0	39

Moreover, as the production of early ripening and cold resistant hybrids are introduced into operations and improvements are realized in the zonal technology for the cultivation of corn grain, its plantings must be extended into the more northern regions, where at the present time this crop is still ripening in an unstable manner. It is here that the corn will have a better guarantee of moisture being available.

At the same time, we can no longer tolerate a situation wherein corn that was sown for grain purposes is harvested, under various pretexts, for silage. Such plantings must be harvested only as originally intended. During the years of the Tenth Five-Year Plan, 1.25 million hectares of corn grain (30 percent of the area sown) were harvested for feed purposes throughout the country.

Improvements in Plant Breeding and Seed Production

An important reserve for further increasing the production of corn grain is that of expanding the group of hybrids, especially the early ripening and cold resistant types, considered to be suitable for the industrial cultivation technology. In 1979, the early ripening and mid-season ripening hybrids occupied only 21 percent of the sowing area used for corn grain.

The measures employed in recent years for strengthening the logistical base of the plant breeding centers have made it possible to raise the efficiency of their operations. During 4 years of the Tenth Five-Year Plan, 126 hybrids were turned over to the State Committee for the Strain Testing of Agricultural Crops. In terms of productivity, many of these hybrids are the equal of the best foreign bred hybrids and in the principal zones of corn growing they are furnishing grain yields of 60-70 quintals per hectare and under irrigation -- more than 100 quintals per hectare.

Eighty five hybrids were regionalized during 1980, of which number 9 were early ripening, 23 -- medium early, 13 mid-season ripening and 40 -- medium late and late ripening.

The inclusion of five foreign specimens in the gene fund exerted a positive effect with regard to improving the plant breeding results. They have already been employed in the creation of the very promising Kollektivnyy 244, Kollektivnyy 245 and other medium early hybrids. The Pioner 3975 and especially the Pioner 3978 hybrids have displayed fine technological qualities (high cropping power, resistance against lodging and diseases, rapid drying out of the grain while standing and a raised grain yield, uniformity of ripening and so forth). Their conversion over to a sterile basis and accelerated propagation have been organized. These hybrids are to be distributed extensively in Moldavia, the steppe region of the Ukraine and in the north Caucasus.

As yet, no solution has been found for the problem of creating hybrids for the TsChO [Central Black Earth Region], the forest-steppe region of the Ukraine and the Volga region, which will ripen in a reliable manner and be suitable for the industrial cultivation technology and for harvesting with thrashing of the ears.

The All-Union Academy of Agricultural Sciences imeni V.I. Lenin and other scientific-research institutes, in the interest of expanding the zone for the cultivation of corn grain and obtaining stable yields for this crop, are concentrating their efforts on the creation and rapid introduction into production operations of highly productive, early ripening and cold resistant hybrids, possessing valuable economic qualities.

In conformity with the decree of the CC CPSU and the USSR Council of Ministers, during the next few years the logistical base for the breeding of corn at 11 scientific research institutes throughout the country will be strengthened. This will make it possible during the Eleventh Five-Year Plan to convert over to an optimum ratio of hybrid groups in the plantings, according to early ripening capability:

...in the TsChO, early ripening -- 70-80 percent, medium early -- 20-30 percent;

...in the forest steppe region of the Ukrainian SSR, early ripening -- 30-40 percent, medium early -- 50-60 percent; in the southern regions alone, mid-season ripening -- 10 percent;

...in the forest district of the Ukrainian SSR, early ripening -- 100 percent;

...in the steppe region of the Ukrainian SSR, medium early -- 20-25 percent, mid-seasoning ripening -- 60 percent, medium late -- 15-20 percent;

...in the Moldavian SSR, in the northern zone, early ripening -- 20-30 percent, medium early -- 35-40 percent, mid-season ripening -- 35-40 percent; in the central and southern zones, medium early -- 20-30 percent, mid-season ripening -- 50-60 percent, medium late -- 20-30 percent;

...in the Volga region, in Saratovskaya Oblast, early ripening -- 100 percent; in Volgogradskaya Oblast, medium early -- 50 percent, mid-season ripening -- 50 percent.

...in the north Caucasus, medium early -- 5 percent, mid-season ripening -- 45 percent, medium late -- 40 percent, late ripening -- 10 percent.

The creation and introduction into production operations of early ripening and medium early hybrids will make it possible not only to expand the corn grain area, but in addition it will bring about a change in the ratio of hybrid areas, for the various groups of early ripening capability, in the traditional corn growing zones.

In order to implement this program, a great amount of work must be carried out in connection with improving seed production operations in behalf of corn. The seed of 1st generation hybrids did not occupy a prominent place in the procurements for the 1976-1979 period.

The overall seed requirement for early ripening corn hybrids and varieties, for all types of plantings throughout the country, is 300,000 tons. In recent years the plan for procuring this seed for the state resources has not been fulfilled.

The principal causes of the existing situation -- weak logistical base for processing the corn seed within the USSR Ministry of Procurement system and at the scientific research institutes, shortcomings in plant breeding work and especially in connection with the creation of highly productive early ripening hybrids and weak material interest on the part of the specialized seed farms.

At the present time, the capability of the drying economy of the plants for processing the corn seed is approximately 60 percent of the requirement. As a result, the drying of the seed lasts for 50-70 days and this leads to a loss in germinative capacity. A majority of the scientific research institutes lack plants for processing the parental forms of corn hybrids; the seed is procured by grain receiving enterprises, where it fails to receive proper attention.

The obsolete equipment found at corn grading plants is adversely affecting the production of high quality seed. Experience reveals that the most effective installations for the production of high quality seed are the scientific-production and production associations for breeding and seed production in behalf of corn, which were created in 1978: "Kuban'gibrid" -- in the RSFSR, Panfilovskoye -- in the Kazakh SSR, Samarkand -- in the Uzbek SSR, Mezhkhozyaystvennoye -- in the Turkmen SSR. In particular, the Gibrid NPO [scientific-production association] is performing in a very successful manner in the Moldavian SSR.

The plans for the new five-year plan call for the creation of 22 additional scientific-production associations for corn seed production, including 4 -- in the RSFSR, 16 -- in the Ukrainian SSR, 1 -- in the Kazakh SSR and 1 -- in the Azerbaijan SSR.

Priority attention must be given to strengthening the logistical base at the specialized seed farms, at experimental-production farms of scientific-research institutes, at training-experimental farms of agricultural VUZ's and technical schools and at the scientific-research institutes. Overall, during the Eleventh Five-Year Plan, 70 plants will be built for processing the seed of parental forms, with a productivity of 250 tons (20 plants), 500 tons (45 plants) and 1,000 tons (5 plants) and 25 plants for the processing of hybrid and high quality seed, with a capability of 5,000 tons (16 plants) and 10,000 tons (9 plants).

At the same time, an extensive program will be implemented for the construction and modernization of plants for the processing of corn seed, chamber dryers with thrashing-cleaning towers and grading shops within the USSR Ministry of Procurement system.

In accordance with the long range plan approved by the USSR Ministry of Agriculture, 1.29 million tons of seed corn will be procured annually, including 391,000 tons of early ripening and 26,400 tons of parental forms.

Industrial Technology

The principal direction to be followed for increasing the production of corn grain is that of employing the industrial technology for cultivating this crop. The technology calls for the carrying out of a minimum number of soil cultivation operations and the use, as part of an overall complex, of a group of highly productive hybrids having different ripening periods, mineral fertilizers in raised dosages, highly effective and rapid-deteriorating herbicides and also highly productive equipment, all of which will serve to ensure the carrying out of all work in strict conformity with the requirements of the technology, in keeping with the established schedules and in a high quality manner.

The mentioned technology has been undergoing testing throughout the country since 1977 and it has displayed a high level of effectiveness. During the 1977-1979 period, Interenterprise Detachment No. 11 in Chadyr-Lungskiy Rayon in the Moldavian SSR (the chief of the detachment is Hero of Socialist Labor and Deputy to the USSR Supreme Soviet S.M. Parmakli) obtained an average of 66.6 quintals of corn grain from non-irrigated land, with labor expenditures of 0.44 man-hours per quintal and a production cost of 5.09 rubles per quintal.

In 1978, the new technology was employed in Chadyr-Lungskiy Rayon on 20,000 hectares and a yield of 61.5 quintals of grain per hectare was obtained. In 1979, the scale for the introduction of the industrial technology increased throughout the country to 160,000 hectares. An average of 51.5 quintals per hectare was obtained, or 23.8 quintals per hectare higher than when the usual technology was employed. In 1980, the new technology was employed on 1.16 million hectares. Experience has underscored its definite advantages over the system employed previously, despite the fact that some farms were unable to employ it without violating the technological discipline. For example, it is known that when the industrial technology is used mineral fertilizers are most effective when applied in the autumn with plowing. However, quite often the farms apply them in the spring, thus lowering the effectiveness of the technology on the whole. The leaders and specialists of some farms lost their nerve and they issued instructions to carry out inter-row cultivations and, as a result, the money they had paid out was borne away by the wind.

The units used for applying herbicides on some farms are not equipped with markers and thus mistakes occur out on the fields, with some sectors receiving two applications.

The operational experience of the better farms has shown that a herbicide should ideally be applied at night, when as a rule there is no wind. In addition, when applying a herbicide during the day the hoses should be covered by a polyethylene film so as to prevent the wind from carrying off the herbicide.

Multiple-purpose units for the application and placement of herbicides have not been created in all areas and this has resulted in excessive expenditures for labor and resources and in an increase in the number of passes which the units must make out on a field.

It is known that eradikan does not act upon sowthistle and sunflowers. If the possibility does not exist of selecting a field where these contaminants are absent, then the weed seedlings should be treated with Group 2.4-D herbicides in the autumn, following the removal of stubble and prior to plowing.

During the years of the Eleventh Five-Year Plan, the industrial technology will be introduced into operations in all of the corn growing republics (see Table 2).

TABLE 2

Introduction of the Industrial Technology for Cultivating Corn for Grain During the 1981-1985 Period (thousands of hectares)

Republic	1981	1982	1983	1984	1985
USSR	2900	3005	3210	3440	3778
RSFSR	900	900	900	900	1000
Ukrainian SSR	1300	1400	1600	1800	2000
Uzbek SSR	200	200	200	200	258
Kazakh SSR	50	50	50	50	50
Georgian SSR	50	50	50	50	50
Azerbaijan SSR	5	10	10	15	15
Moldavian SSR	350	350	350	350	350
Kirghiz SSR	15	15	20	25	25
Tajik SSR	12	12	12	12	12
Turkmenskaya SSR	18	18	18	18	18

In the interest of ensuring the most effective use of the logistical resources allocated, technological discipline must be strictly observed throughout all stages in the introduction of the new technology.

When carrying out cultivation based upon the industrial technology, the corn will be grown following the best predecessor crops: winter and spring grain crops, pulse crops, corn, potatoes, sugar beets and so forth.

On fields contaminated by root sucking weeds (sowthistle, bindweed, stagger bush and others), stubble removal work should be carried out twice prior to plowing and the weed seedlings should be treated with Group 2.4-D herbicides.

The stubble removal work will be carried out using highly productive disk implements -- BDT-7, BD-10, LDG-10, ldg-15. Plows having half-turn mouldboards will be made available for improving the quality of the plowing work.

The plans call for mineral fertilizers to be applied to each hectare of non-irrigated planting at the rate of 330 kilograms of active agent per hectare and 440 kilograms on irrigated tracts and in an optimum ratio.

Measures will be undertaken to raise the effectiveness of the fertilizers by autumn plowing under using a full dosage of organic fertilizer, by increasing the use of

mineral fertilizers during autumn plowing operations and by ensuring their uniform distribution over a field and the extensive use of the local and starting methods of application.

The supplying of the farms with special scrapers will enable them to level off their soil thoroughly, thus raising the effectiveness of the herbicides and the quality of the sowing work.

The availability of a large group of highly effective herbicides (Eradikan 6E, Lasso, Agelon, Ramrod, Simasine, Atrasine, Zeapos, Dialen, Group 2.4-D and others), differentiated according to their use and depending upon the weediness and soil characteristics of each field, will ensure a clean status for the plantings throughout the growing season, with no expenditures for manual labor or mechanized tending of the crops.

When employing this technology, importance is attached to the quality of preparation of the herbicide solutions, to their uniform application, to their proper placement in the soil and to strict observance of the entire technology for employing chemical processes in the campaign against weeds. This will ensure the planned delivery of a complex of appropriate machines: APZh-12, VR-3M -- units for the preparation of solutions; POU and OVT-1 sprayers with a field hose equipped with cut-off valves and BDT-7 and BDT-10 harrows -- for the placement of soil herbicides.

The conversion over to improved implements for pre-sowing tilling of the soil -- BP-8 spring-tooth harrows with leveling boards and rotary rollers, Slavutich multiple-purpose units, USMK-5.4A cultivators and specially re-equipped KPS-4's, SUPN-8 precision sowing machines and Bekker's -- is making it possible to maintain an optimum sowing density, that is, to distribute the seed uniformly in a row and to plant them strictly at the prescribed depth.

This technology makes it possible to carry out the sowing at a lesser depth (5-7 centimeters) and this serves to ensure that earlier and more healthy seedlings will be obtained and that the cropping power will be raised.

The creation of designs and organization of the production of 12-row precision sowing machines of the Kinze and John Deere types will raise productivity substantially, during the carrying out of a complex of spring field operations, as well as the effectiveness of the technology on the whole.

On corn plantings cultivated using the conventional technology, considerable use will be made of wide-cut units -- 2-3 SPCh-6M sowing machines and the corresponding machines for inter-row cultivation. In order to reduce manual labor expenditures, use will be made of the soil herbicides Simasine and Atrasine, for which purpose fields will be selected upon which corn will be grown for several years in a row, in crop rotation plans with brief rotation.

Protection of Corn Against Pests and Diseases

In order to raise the cropping power of corn, the campaign against pests and diseases must be intensified and the recommendations handed down by science must be carried out in a very accurate manner.

In combating pests and diseases, the seed must necessarily be treated with multiple-purpose disinfectants (Phentiuram, Geptatiuram or Tigam) and Hexachlorane dust should be applied to the soil during sowing, or 5 percent Bazudin in the southern European portion of the USSR.

For protecting corn plantings against damage caused by the southern grey weevil, the fruit fly and young caterpillars of the winter and other chewing moths, extensive use must be made of the method of spraying the plantings with a 16 percent mineral oil emulsion of the gamma isomer of Hexachlorane.

Improvements in the Technology for the Harvesting, Post-Harvest Processing and Storage of the Grain

In the production of grain, one very complicated and laborious operation is that of harvesting the crop. As a rule, it continues for more than a month's time and this of itself can cause considerable losses. According to data supplied by the All-Union Scientific Research Institute of Corn, the grain losses caused by overripeness, for a cropping power of 40 quintals per hectare, amounts on the 10th day to 0.4 percent, on the 15th day -- 3.8 percent, on the 20th -- 8.9 percent and on the 35th day -- 22.6 percent. The losses increase as the cropping power increases.

The harvesting of corn in ears with subsequent cleaning and thrashing of the ears at a station results in a considerable increase in expenditures (as much as twofold at times). Thus the plans call for more thrashing of ears in the field following a corn harvest.

The considerable increase in the gross yield of corn grain planned for 1985 raises a critical problem with regard to the development of and improvements in the technological systems for harvesting the crop, especially the post-harvest processing of it, since for all practical purposes the farms still lack the serially produced equipment required for this purpose.

The plans call for the corn to be harvested in ears (with a grain moisture content of no more than 40 percent) using the KOP-1.4B and KSKU-6 corn harvesting combines. Forced ventilation sites having various types of heat generators must be used for drying the ears.

Experience has shown that in order to reduce losses and raise the productivity of the combines and harvest the corn in ears with a grain moisture content of approximately 30 percent, it is best to proceed without ear cleaners. Instead the ears should be cleaned on a thrashing floor in flow lines which include a KZS [komplekt zernoochistitel'no-sushil'nyy; grain cleaning and drying unit], a trash pit with vibrator feeder, ear conveyer, ear cleaner, thrasher and conveyer for the thrashed grain heap.

The harvesting of corn with direct thrashing of the ears in the field (for a grain moisture content of less than 30 percent) must be employed more extensively, since this method serves to raise labor productivity by twofold in the post-harvest processing of a crop and it reduces fuel expenditures considerably compared to preliminary drying of the ears. For harvesting in this manner, use will be made of the SK-5 Niva combines with PPK-4 picker attachments and also the KSKU-6 corn

harvesting combines and for drying the grain -- use will be made of complexes of the KZS type and shaft and drum dryers.

Once the planned deliveries of corn harvesting machines to agriculture have been carried out, it will be possible to harvest the crop in just 23 working days.

In view of the shortage of combines and other items of equipment used in the post-harvest processing of the corn, a requirement exists for raising the productivity of the equipment during the harvest operations in the interest of reducing the overall harvest period to the maximum possible degree.

The dried ears and grain are usually stored in storehouse facilities. In recent years, greater use has been made both in our country and abroad of the method of storing corn grain, the moisture content of which is 28-30 percent, in silage towers or trenches covered over with a film and without the addition of preservatives. The grain is placed in storage crushed in 2-4 parts.

The storing of grain having such a moisture content will produce a savings in connection with the drying work, it will accelerate the harvest operations and it will make it possible to obtain high quality concentrated feed.

In this regard, it will be necessary to develop designs and to organize the production of highly productive machines for crushing the corn grain and ears prior to storing them for preservation.

The USSR Ministry of Agriculture and VASKhNIL [All-Union Academy of Agricultural Sciences imeni V.I. Lenin] are aware of the serious nature of the task concerned with introducing the industrial technology for the cultivation of corn grain into operations at large sites.

In late 1980 and early 1981, republic, oblast (kray) and rayon seminar conferences were held in all of the corn growing republics for the purpose of examining the results of introduction of the new technology during 1980 and assigning tasks for future years. During this period, 87,000 machine operators undertook a course of instruction on the operational methods to be used in conjunction with the new technology. This will make it possible to raise technological discipline considerably and to improve the agricultural practices being employed.

However, in addition to an efficient program for sharply increasing the production of corn grain throughout the country, a number of unresolved problems still exist which are adversely affecting the realization of this program. First of all, it will be necessary to raise the procurement prices for the corn grain so that its production profitability will be no lower than that for other grain crops.

In addition and in the interest of raising the material interest of the farms in increasing the production of corn grain, the farms should ideally be authorized to supply kolkhoz members and sovkhoz workers with up to 20 percent of the gross yield of grain, obtained over and above the average level for the preceeding five-year plan, for the maintenance of livestock on their private plots.

The USSR Ministry of Agriculture is of the opinion that fulfillment of the overall program and positive solutions for the problems set forth in it will make it

possible to obtain 15 million tons of corn grain during 1981 and to create a reliable prerequisite for achieving the planned production volume for corn grain during this present five-year period.

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FORESTRY AND TIMBER

PRODUCTION INITIATIVE PROMOTED IN TIMBER INDUSTRY

Moscow LESNAYA PROMYSHLENNOST' in Russian No 9, Sep 80 pp 1-2

[Article: "Wings for the Initiative"]

[Text] The workers of the timber and woodworking industry received the decisions of the June 1980 Plenum of the CPSU Central Committee concerning the calling of the 26th CPSU Congress with great inspiration and patriotism. Labor collectives are striving to mark the party congress with the fulfillment of this year's quotas and the five-year plan as a whole ahead of schedule, to lay a firm foundation for successful work during the new 11th Five-Year Plan. Enterprises are widely searching for additional reserves of production effectiveness and labor quality, of the efficient and economic use of labor, raw materials, fuel and energy and financial resources.

Workers of the timber industry in Krasnoyarskiy Kray have begun socialist competition under the banner, "For the 26th CPSU Congress--26 Shock Labor Weeks!" The initiator was the collective of the Yeniseylesosplav production association. It has taken on increased obligations--to complete the 10th Five-Year Plan ahead of time and to contribute commodity products worth 5,500,000 rubles above the plan instead of the previously pledged 3,440,000 rubles, to produce an additional 60,000 sleepers and 20,000 cubic meters of saw-timber. It has been decided to complete the plan for the first 2 months of the 11th Five-Year Plan ahead of time and to produce 350,000 rubles' worth of commodity products above the plan.

The timber procurers of Un-Yuganskiy Industrial Timber Farm (Tyumen'lesprom) decided to fulfill the five-year plan for the procurement of wood ahead of schedule and to deliver an additional 15,000 cubic meters of timber and to produce commodity products worth 200,000 rubles. In striving to secure rhythmical work, they have pledged to procure 100,000 cubic meters of timber using the special collective method, to prepare 10 kilometers of land for forest roads, to curtail the idleness of cars by 1 hour (as compared to last year), to complete capital repairs of buildings worth 250,000 rubles and to build a cow facility for 200 head. It has been decided to fulfill the 2-month plan for basic indicators by the opening day of the congress.

The construction workers of the Tyumen'lesstroy Trust, in examining their earlier obligations, intend to fulfill the annual plan for construction-installation work worth 19.6 million rubles and the plan for the introduction of timber roads one month early. The annual introduction of capacities to move out wood in a volume of

800,000 cubic meters and of residential facilities totalling 26,000 square meters. It has been decided to curtail the volume of incomplete production by 5 percent as compared to that established by the plan. By the opening of the congress the 2-month plan of construction and installation work must be completed.

The brigade of D. A. Yermolayev of the Vokhomskiy Timber Industry Enterprise of the Kostromalesprom Association has presented a valuable initiative. By the opening of the congress it has decided to procure 550,000 cubic meters of timber, having fulfilled eight annual plans since the beginning of the 10th Five-Year Plan. In working by the method of the brigade subdivision, the collective pledged to preserve no fewer than 70 percent of vital young plants in worked wood-cutting areas, to economize on 7,500 rubles worth of material resources and to confirm the title of "Brigade of Excellent Quality." The day of the opening of the congress will be marked by the completion of the plan for the first quarter of 1981.

The timber procurement brigade of the Karabul'skiy Timber Industry Enterprise of Krasnoyarsklesprom [Krasnoyarsk Timber Industry Association], directed by L. N. Gnevashev, reexamined its obligations. With an annual plan of 117,000 cubic meters and earlier obligations of 132,000 cubic meters, it decided to procure 148,000 cubic meters of timber during the final year of the 10th Five-Year Plan.

In making a special effort before the congress, after evaluating its possibilities and reserves the brigade of A. A. Vatrasov, recipient of the USSR State Prize, decided to procure no fewer than 1 million cubic meters of timber during the 11th Five-Year Plan using three swathe-packing machines. The brigade is part of the Komsomol'skiy Timber Industry Enterprise of Tyumen'lesprom [Tyumen' Timber Industry Association].

A good initiative was presented by the engineering-technical workers and specialists of the timber procurement industry who participated in the All-Union Conference on the question of raising the effectiveness of using new timber-procurement technology, which took place in July of this year in the Atubskiy Timber Industry Enterprise of Irkutsklesprom [Irkutsk Timber Industry Association]. The participants in the meeting pledged to overfulfill established goals in 1980 in the area of wood-cutting operations fulfulled by machines using the method of swathing, hauling and cutting of knots. For these operations it is planned to increase the annual output per average machine by 1.5-2 times in 1980-1981 by making machines work 2-3 shifts, by improving their use, by curtailing the losses of work time, by improving the system of technical services and wages, by improving the professional training of machinists and by extending progressive experience widely. In each association it has been planned to have 1-2 timber industry enterprises make the transition to a total machine method of production in the area of wood-cutting with the highly effective utilization of new technology, to organize specialized group sections for the repair and regulation of complex networks and units in new machinery, and to improve the selection and training of workers and machinists.

The best rollers in the country--the participants in the all-union competition "Wood Felling 1980"--turned to the workers of the timber procurement industry with a call to begin shock labor in honor of the coming congress, to successfully fulfill the plan and socialist obligations of the final year of the 10th Five-Year Plan, and to secure the fulfillment of the quota for the first 2 months of 1981 by the day the congress opens--23 February.

Great pre-congress obligations were also taken on by the workers of the Nadvornyanskiy Timber Combine of the Precarpathian Forest, the brigade of F. P. Koval' of the Syktyvdinskiy Timber Industry Enterprise and many other labor collectives and leading branch workers.

The board of the ministry of the timber industry and the presidium of the central committee of the trade union council accepted the decisions of the June 1980 Plenum of the CPSU Central Committee, approved the patriotic initiative of leading workers, engineering-technical employees and collectives in developing socialist competition in honor of the 26th CPSU Congress in the area of successfully completing the 1980 plan and the five-year plan in general. Ministries of union republics, all-union and production associations, enterprises and organizations and all committees of trade unions and professions have been assigned the following:

--to evaluate the goals arising from the decisions of the June Plenum of the CPSU Central Committee;

--to develop and realize measures to worthily greet the 26th CPSU Congress, to begin extensive educational work, to organize lectures and speeches, to have thematic exhibits devoted to the leadership role of the USSR's Communist Party;

--to maximally utilize reserves for operational improvements, to increase the return on fixed production capital, to efficiently and economically utilize labor, raw materials, fuel-energy and financial resources; to give special attention to the effectiveness of capital investments in capital construction, to decrease the number of new structures and incompleted structures and to focus strength and resources on operational objects;

--to support and spread the patriotic initiative of leading workers and collectives to worthily greet the 26th CPSU Congress, to successfully complete the 10th Five-Year Plan, to create a dependable basis for solving the tasks of the 11th Five-Year Plan;

--to create the conditions for a successful fulfillment of increased socialist obligations by the branch's workers;

--to organize socialist competition for the right to write labor reports for the party congress, to begin a mass movement to increase labor productivity and to economize, to open personal accounts of labor gifts to the congress, to secure work on the day of the opening of the party congress with the greatest labor productivity and using raw materials and other materials that have been economized on;

--to take specific measures to eliminate the lags of collectives that do not fulfill plan goals and to improve the work of enterprises having average indicators;

--to clearly and convincingly reveal and propogandize the successes of production leaders.

The board of the ministry and the presidium of the central committee of the trade union have expressed their assurance that the workers of the timber and wood processing industry will follow the example of the initiators of competition and will honor the party congress with labor results.

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END