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TRANSLATIONS ON USSR AGRICULTURE  
(FOUO 2/79)

  


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RESERVES AVAILABLE FOR FURTHER DEVELOPMENT OF LIVESTOCK HUSBANDRY

Moscow VOPROSY EKONOMIKI in Russian No 11, Nov 78 pp 24-35

[Article by S.S. Dzarasov, Doctor of Economic Sciences and professor in the Department of Political Economics of the Academy of Social Sciences at the CC CPSU; P.A. Ignatovskiy, Doctor of Economic Sciences and professor; P.A. Kudinov, Candidate of Economic Sciences and senior teacher in the Department of Administration of Socio-Economic Processes of the Academy of Social Sciences at the CC CPSU and I.F. Chernyavskiy, Candidate of Economic Sciences and senior teacher in the Department of Administration of Socio-Economic Processes of the Academy of Social Sciences at the CC CPSU: "Reserves for the Development of Livestock Husbandry"]

[Text] The achieving of successful solutions for many national economic tasks is dependent to a considerable degree upon the agrarian sector of the economy. The consistent implementation of the long-term program developed by the party for developing agriculture has made it possible, within a brief interval of time, to transform its logistical base. The party's agrarian policies are directed not only towards achieving the technical rearming of this branch, but also towards making more efficient use of the reserves available for socialist production. A successful solution for the food problem is dependent upon more efficient use being made of the branch's potential and more rapid placing in operation of the reserves available for agricultural production.

During 2 years of the Tenth Five-Year Plan the average annual volume of gross agricultural output increased and the average annual production of grain reached 209.6 million tons, compared to 181.6 million tons for the Ninth Five-Year Plan. In 1977 a record yield of raw cotton was obtained and the procurement plans for potatoes, fruit, eggs, milk and other products were fulfilled. "The entire course of development of the country's economy and the steady growth in the material standard of living of the people" stated L.I. Brezhnev during the July (1978) Plenum of the CC CPSU, "attach special importance at the present time to the task of achieving rapid improvements in livestock husbandry. Naturally, recent improvements in national prosperity have brought about a raised demand in particular for livestock husbandry

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products. In this regard the situation is now such that, notwithstanding increases in the production of meat, milk and other products and improvements in the operational organization of the branch, the present level of development of livestock husbandry is still not keeping pace with the rapidly growing requirements."

The development of this branch has been adversely affected by the unfavorable weather conditions experienced during the past five-year plan. The feed shortage during the dry year of 1975 brought about a reduction in the number of pigs and poultry. However, increases are once again being observed in the number of pigs and poultry. For example, by the middle of 1978 the number of cattle on public farms throughout the country had increased by 4.2 million head compared to 1975, pigs -- by 10.8 million and sheep and goats -- by 26.7 million head. This represents just one trend in the development of livestock husbandry. Another trend, as mentioned by L.I. Brezhnev during the Plenum, consists of "raising the productivity of all types of livestock and poultry in all areas and as quickly as possible." The combining of these two trends in the development of livestock husbandry -- raising the productivity of the animals together with increasing their numbers -- implies that an increase in the number of animals, assuming the average weight achieved throughout the country for the sale of 1 head of cattle to the state (355 kg), will make it possible to obtain 1.49 million additional tons of beef.

\* \* \*

The data furnished in the table on the following page reflects the growth in and structure of meat production volumes at all categories of farms. The data underscores the increase that has taken place in the proportion of beef within the overall structure of meat resources. This trend will continue in the future. During the July (1978) Plenum, L.I. Brezhnev emphasized: "In the majority of regions throughout the country, the solving of the meat problem is associated mainly with increasing the production of beef. This is conditioned on the one hand by the increasing demand of the population for beef and, on the other, by the structural peculiarities of our feed balance and natural conditions. We possess vast meadow and pasture lands and great opportunities for the production of coarse and succulent feed. Large quantities of by-products are furnished by enterprises of the food industry. All of these factors can be employed to great advantage in the raising and fattening of cattle." The Plenum underscored the need for devoting special attention to raising the weight of the animals being sold for slaughtering purposes and to reducing the fattening periods. During the Ninth Five-Year Plan, 60 percent of the absolute increase in beef was achieved by means of an increase in the number of cattle and 40 percent -- by improvements in the productivity of the herd.

Experience indicates that beef production will be expanded in the near future both by an increase in the number of animals and by improvements in their utilization, that is, by increasing the output of meat from each head available at the beginning of the year. However, a change will take place in

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	1961-1965 гг.		1966-1970 гг.			1971-1975 гг.			1976-1977 гг.		
	(1)	(2)	(1)	(2)	(3)	(1)	(2)	(4)	(1)	(2)	(5)
	среднегодовое производство тыс. т. убойного веса)	удельный вес (в %)	среднегодовое производство тыс. т. убойного веса)	удельный вес (в %)	по отношению 1961-1965 гг. (в %)	среднегодовое производство тыс. т. убойного веса)	удельный вес (в %)	по отношению 1961-1975 гг. (в %)	среднегодовое производство тыс. т. убойного веса)	удельный вес (в %)	по отношению 1971-1975 гг. (в %)
(6) Мясо всех видов	9 320	100	11 583	100	124	11 004	100	121	14 137	100	100,9
(7) в том числе:											
(8) говядина	3 474	37	5 187	45	149	5 985	44	115	6 753	47,9	112,8
(9) свинина	3 788	41	4 327	37	114	5 394	38	125	4 652	33,0	86,2
(10) баранина и козлятина	1 050	11	992	9	94	972	7	98	891	5,9	91,6
(11) птица	748	8	853	7	114	1 335	9	157	1 528	10,9	114,4
(12) прочие	260	3	224	2	86	318	2	142	313	2,3	98,4

Key:

- |   |                          |
|---|--------------------------|
| 1. Average annual production (in thousands of tons of dressed weight) | 6. Meat of all types     |
| 2. Proportion (in %)  | 7. Including:            |
| 3. Compared to 1961-1965 (in %)                                       | 8. Beef                  |
| 4. Compared to 1966-1970 (in %)                                       | 9. Pork                  |
| 5. Compared to 1971-1975 (in %)                                       | 10. Mutton and goat meat |
|   | 11. Poultry              |
|   | 12. Other                |

the ratio of these factors as a result of production intensification. The experience of republics in which livestock husbandry operations are carried out on an intensive basis reveals that it is fully possible, within the next few years, to achieve a production rate of 85-90 kg of beef per head of cattle. In 1976 the average weight per head of cattle sold to the state by kolkhozes and sovkhazes was 330 kg and in 1977 -- 352 kg. Compared to the 1961-1965 period, when the figure was 236 kg, an increase of 42 percent was realized in the average weight. This very important factor is the result of the intensive development of meat production.

According to available estimates, 30 percent of the beef produced can be ensured on the basis of an increase in the number of animals and 70 percent -- through intensification of livestock husbandry. Such a change in the ratio of the principal factors affecting growth in the production of beef is making it possible to reduce substantially the labor and feed expenditures per weight unit of beef and this signifies the creation of stable conditions for raising the efficiency of livestock husbandry based upon intensive methods for managing this branch, methods which will ensure an average live weight per head of cattle delivered for meat purposes, at an age of up to 20 months, of no lower than 400-450 kg. During the Plenum it was mentioned that such a goal can be achieved in many rayons, oblasts, krays and republics during the current five-year plan.

The solving of this task is dependent upon raising the level of specialization and concentration in cattle husbandry. A considerable number of kolkhozes



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and sovkhozes still have small herds. For example, at the beginning of 1977 less than 1,000 head of cattle were being maintained at each of 3,800 sovkhozes (21 percent) and 7,000 kolkhozes (26 percent). At the same time, 92.7 percent of the sovkhozes and 85 percent of the kolkhozes in the Estonian SSR were each maintaining in excess of 1,000 head and for the Belorussian SSR the figures were 94.5 and 87.4 percent of the overall number of farms respectively. As a result of measures carried out in Moldavia in connection with the development of specialization and concentration of cattle husbandry on an interenterprise basis, the production level achieved in 1975 for beef and veal per head of cattle amounted to more than 120 kg (for the USSR -- 57 kg). In 1971, these indices equalled 48.8 and 54.1 kg respectively.

During the July (1978) Plenum of the CC CPSU, emphasis was placed upon the need for forming an independent branch of beef cattle husbandry involving the use of pasture lands and also the creation of a strong feed base for irrigation, particularly in the republics of Central Asia, in the southern part of the country, in the nonchernozem zone of the RSFSR and in Belorussia. In this regard, great importance is being attached to breeding beef strains of bulls with dairy brood stock from which the plans do not call for replacement young stock to be obtained. A gradual reduction and subsequently the elimination of barrenness in the cows will also accelerate growth in the production of meat.

The development of beef cattle husbandry will be promoted by improved feed usage and by a reduction in output production costs, which are being raised to a considerable degree as a result of improper feeding. In this regard, one important condition for increasing the production of meat and lowering the cost of meat production is that of ensuring that those enterprises engaged in the maturing and fattening of young stock are supplied with protein-balanced feed. The consumption of feed per quintal of weight increase in cattle at kolkhozes, sovkhozes and other public farms has remained unchanged for an extended period of time throughout the country as a whole. This affects the cost of production, since the proportion of feed in the structure of such costs is considerable. Under modern conditions the maturing and fattening of cattle, including feed production, become efficient only when carried out on an industrial basis, involving both the modernization of the branch and the construction of specialized livestock husbandry enterprises on an interenterprise basis and by means of centralized capital investments. In this regard, the development of specialization and concentration of livestock husbandry, combined with the erection of mixed feed plants on an interenterprise basis and using state appropriations, represents a most effective sphere for the use of capital investments.

The system employed throughout the country for the raising and fattening of livestock is predicated upon specific conditions being taken into account. For example, in the steppe regions of Kazakhstan, Kirghizia, the Volga region, Kalmykskaya ASSR, western Siberia, the Urals, north Caucasus, Buryatskaya ASSR and certain other regions, one of the principal conditions for raising the efficiency of cattle fattening operations is that of making proper use of the natural meadows and pastures. Ideally the majority of regions in the

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European part of the country require an industrial system for feed production and the raising and fattening of livestock, a system having definite logistical requirements and particularly a network of specialized enterprises created mainly on the basis of interenterprise cooperation. Experience indicates that exceptional importance is also being attached to improving the economic relationships between the reproduction dairy farms and enterprises engaged in the raising and fattening of cattle. This has to do with those instances wherein young stock intended to be used for meat purposes are transferred at an early age (10-20 days) from reproduction (dairy) farms to completely-mechanized enterprises and farms engaged in the maturing and fattening of cattle. In those instances where the creation of livestock husbandry complexes is justified, they function as independent enterprises which carry out their work on the basis of complete economic accountability.

If conditions permit, farms and associations created on the basis of inter-enterprise cooperation will serve as feed suppliers for the interenterprise livestock husbandry facilities. Moreover, these facilities will be provided with land reclamation equipment and elite seed. "Here we have in mind" stated L.I. Brezhnev during the Plenum, "the need for making feed production more specialized in nature at the kolkhozes and sovkhoses themselves, creating interenterprise associations for the production of feed and developing agro-industrial integration." The livestock husbandry complexes, while ensuring the production of the final product, may also include mixed feed plants engaged in the production of quality feed in conformity with the requirements of the livestock age groups. Hence a complex, as a specialized enterprise and an interenterprise association, can have a state task for the production and sale of the particular final product -- meat. In the case of inter-enterprise cooperation, the state plan for the sale of meat is ensured by shareholder-farms through deliveries of young stock by dairy (reproduction) farms and also by means of contracts with the population for young stock and ensuring high weight increases for the cattle during fattening. Specialization and concentration in livestock husbandry make it possible not only to introduce a progressive technology and system of incentives into operations, but also to raise the skills of workers who are capable of solving the task of efficient meat production.

The development of specialized livestock husbandry enterprises (complexes) can be carried out based upon existing farms in the Skotoprom system. In those instances where such farms are not available, importance is attached to economically substantiating the relationship between the new livestock husbandry enterprises of the industrial type and existing farms in need of modernization. The problem of supplying feed for the large state complexes must be solved in a rational manner using different variants depending upon the natural-economic conditions. For example, the cattle being maintained at individual complexes should ideally be supplied with feed produced at these same or other specialized farms and also by means of state forage grain funds. Moreover, the relationships between the farming parties are developed along economic accountability lines.

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A strengthening of the livestock husbandry economy raises the need for definite changes in the system of economic relationships. One measure in this regard is the increase in procurement prices for milk, wool, mutton and other agricultural products, approved during the July (1978) Plenum of the CC CPSU. Regulation of the economic accountability relationships under intense specialization presupposes the establishment of more sound accounting prices for the young cattle stock supplied to the complexes by the reproduction farms, with the price level being such as to ensure that the reproduction farms enjoy the same conditions as those prevailing at complexes engaged in the raising and fattening of livestock under more rational forms of specialization. This raises the interest of the kolkhozes and sovkhoses in obtaining and protecting their offspring and delivering them on the basis of contracts arranged with the interenterprise complexes. The young stock obtained from crossing cows with beef strains of bulls could be sold at higher prices. Under such conditions, specialization in the raising and fattening of cattle exerts a positive influence on milk production, since earnings from the sale of milk according to sound accounting prices promote improvements in the profitability of dairy livestock husbandry and in its development.

The computations for feed supplied by the kolkhozes and sovkhoses to the interenterprise complexes and associations for the raising and fattening of cattle occupy a special place in the mechanism of economic relationships among those participating in cooperative production on an interenterprise basis. Uniform principles for such computations are still not available. In some instances they are being carried out on the basis of the state procurement prices for grain (this method is being employed on public farms in Moldavia), in other instances -- based upon the production cost of the grain and still in a third group of cases -- based upon the accounting prices. Experience indicates that in the first instance the suppliers of the grain forage stand to gain considerably, but at the same time the cost of meat production will be artificially inflated. The profit which the kolkhozes obtain from selling grain to the state is included in the expenditures for raising and fattening cattle as production expenses.

It should be borne in mind that even when feed expenditures, based upon their production cost, are applied to the output of livestock husbandry associations, an increase often takes place in the production cost for the weight increases in the animals and for milk, compared to kolkhoz and sovkhos farms, while at the same time labor productivity increases sharply. This is natural, since complete mechanization ensures an economy in live labor. However, the transferred value of the production resources to the final output at livestock husbandry complexes is higher and it is still not being covered by a savings in live labor, since the productivity of the animals, particularly cows, remains at the same level in individual instances. The increasing material expenditures associated with the introduction of mechanization, even in the face of raised labor productivity, lead to higher production costs. This is why the industrial methods employed in livestock husbandry production operations require not only a complex of machines for conserving in the use of live labor but also a more productive herd, improved pedigree data on the

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livestock, balanced feed and skilled labor. All of these factors will ensure growth in the productivity of the herd as a condition for lowering production costs. At the present time the computation for grain forage in Moldavia and other republics, by livestock husbandry complexes and associations with the kolkhozes and sovkhoses, is carried out in accordance with the average production cost for the rayon. Under modern conditions, this is the most suitable principle for the carrying out of computations.

\* \* \*

After beef, pork occupies second place in the country's meat balance. During the last two five-year plans its proportion in the meat balance amounted to 37-38 percent. Prior to the beginning of 1978, the number of pigs at all categories of farms reached 70.4 million head, compared to 1965 when the figure was only 59.6 million head.

The rates of growth for pork production increased during the course of recent five-year plans. Thus, during the 1966-1970 period the average annual production of pork in the public sector increased by 22 percent above that for the preceding five-year plan and during the Ninth Five-Year Plan compared to the Eighth -- an increase of 36 percent. In the private sector, the growth amounted to 5 and 10 percent respectively. For all categories of farms on the whole, the average annual production of pork increased respectively by 540,000 tons or 12 percent and by 1.06 million tons or 25 percent. A great deal was accomplished with regard to disseminating the progressive technologies for pork production. Large-scale pig raising enterprises were created both at kolkhozes and sovkhoses and on an interenterprise basis. The results of their operations underscore the new opportunities that are available for the intensive management of this branch. Nevertheless, the proportion of such enterprises in the production of pork is still not very high. An increase in the production of pork is being held up owing to the fact that meat production per head of pig has decreased at a number of kolkhozes and sovkhoses. For example, during the Eighth Five-Year Plan an average of 85 kg of meat in live weight was produced annually per head available at the beginning of the year and during the Ninth Five-Year Plan -- 83 kg.

During the years of the Ninth Five-Year Plan, 34 percent more concentrated feed was used for feeding purposes on the pig farms of kolkhozes and sovkhoses than was employed during the previous five-year plan, despite the fact that the proportion of such feed compared to the overall mass of feed used for the raising and fattening of pigs increased only negligibly. The consumption of mixed feed increased by 46 percent. It bears mentioning that the consumption of grass meal and grain in processed form is increasing in pig breeding with each passing year. Improvements have been realized in the structure of the concentrated feeds being fed to pigs. During the Eighth Five-Year Plan the average annual proportion of grain in concentrated feed amounted to 28 percent; flour, siftings and other residues obtained from the processing of grain -- 45 percent; mixed feeds -- 26 percent. For the Ninth

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Five-Year Plan the figures were 24 percent, 45 percent and 29 percent respectively. An important factor with regard to raising the efficiency of use of feed is that of realizing improvements in the structure of the rations. However, this factor manifests itself fully only in those instances where use is made not only of the best feed but where the feeding is carried out in an intensive manner. This second condition must be realized more fully. Compared to the Eighth Five-Year Plan when an average of 626 kg of concentrated feed was fed to each pig, during the Ninth Five-Year Plan -- 603 kg.

From the standpoint of the modern requirements of science and leading experience, large numbers of pigs are not being utilized properly at a considerable number of kolkhozes and sovkhozes. Special importance is being attached to taking into account the regional aspect in the distribution of industrial pork production. Statistical data reveals that 77.2 percent of the pigs are located in the RSFSR (48 percent) and the Ukraine (29.2 percent) and when Belorussia, Moldavia, Kazakhstan and the Baltic republics are included -- 97.4 percent. The principal suppliers of pork in the RSFSR are the north Caucasus (17.6 percent of the pigs), the Volga region (16.5 percent), the central-chernozem region (15.8 percent) and the central region (13.3 percent, that is, 63.2 percent of the pigs on farms in the RSFSR are located in four economic regions. Since pork production represents clearly expressed zonal specialization, the problems concerned with the development of pig raising and its intensification should be examined mainly in the specific oblasts, krays and republics. The organization, level of culture and efficiency of pork production in the mentioned economic regions and republics are determined by the economic status of the branch on the whole.

In 1974, a stable year from the standpoint of production conditions, and in oblasts which were not specializing in the production of pork, for example Novgorodskaya Oblast, 150 kg of meat (in live weight) was obtained per head, in Murmanskaya Oblast -- 148, in Pskovskaya Oblast -- 132, in Volgogradskaya Oblast -- 124 and in the north Caucasus, a region of traditional pig raising -- 81 kg. The highest pork yields per head were obtained in oblasts in the northwest, where industrial methods are employed mainly in pig raising operations, and the lowest yields -- in the regions of traditional pig raising, considered at the same time to be large producers of grain as the principal feed for pigs.

During the past few years, increases have taken place in feed deliveries for livestock husbandry purposes. In 1965 the consumption of concentrated feed at all categories of farms and in all branches of livestock husbandry amounted to 65.3 million tons, in 1975 -- 118.9 million and in 1976 -- 117.4 million tons. In 1975, 22.5 quintals of all types of feed were expended per head and in 1976 -- 25.5 quintals. However the desired results were still not achieved, since zonal specialization was not developed in terms of specialized enterprises, that is, it was not reinforced by a modern level of production culture.

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The development of pig raising is promoting a solution for the problem of increasing meat production as quickly as possible. The low indices cited above for pork output in oblasts, krays and republics having clearly expressed zonal specialization are explained by the fact that multi-branch farms predominate in these regions and intensive methods for developing the branch have still not been adequately developed here. This is why a need exists for special purpose planning of capital investments for the industrialization and specialization of pig raising operations in specific oblasts, krays, republics and economic regions.

Taking into account the opportunities available for producing grain and particularly protein and also the number of pigs at kolkhozes, sovkhoses, interenterprise complexes and other state enterprises, as set forth in the national economic plan, computations reveal that it is possible to achieve a weight increase per head of 125-130 kg. This will make it possible to produce 6.5-7.2 million tons of pork (in live weight) annually in the public sector. In addition, importance is also being attached to assisting the development of pig raising in the private sector, where the possibility exists of producing 2.7-2.8 million tons of pork. Taking into account this overall volume, the average annual production of pork in the country could reach 9.2-10 million tons, or 2.2 million more tons than the average annual production for 1970-1975.

During the Ninth Five-Year Plan, an average of 13.8 million tons of concentrated feed was fed annually to pigs in the public sector, that is, 7.2 tons for each ton of pork produced. Further improvements in the feed structure and the ability to obtain 125-130 kg of product for each head available at the beginning of the year will make it possible, with use being made of progressive technologies, to lower the expenditures of concentrated feed to an average of 5.8-6 tons for each ton of pork produced. Thus pork production will overtake the consumption of concentrated feed by 29 percent, whereas during the Ninth Five-Year Plan -- only by 2 percent.

This task can be accomplished provided a number of organizational-economic measures are carried out. In particular, improvements must be realized in the level of concentration and intensity of specialization in pig raising through the conversion of this branch over to an industrial basis and also in breeding work, feed rations and in the training of skilled personnel. In addition to modernized farms, closed cycle industrial complexes capable of fattening 12,000, 24,000, 54,000 and in some regions 108,000 pigs annually have also proven their worth in pig raising operations. The construction of the first two or three types of complexes could be carried out on an interenterprise basis; the larger ones should be built only with orientation towards the needs of the large cities, construction projects and industrial centers and in the interest of ensuring reliable and regular deliveries of fresh pork for the population. It is obvious that the larger complexes should ideally be supplied with mixed feed from state funds.

According to rough estimates, the task of supplying adequate amounts of meat for cities of the RSFSR having populations of 150,000 or more can be carried

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out by organizing the industrial production of pork in a volume in excess of 2.0 million tons (in live weight annually). Towards this end, the complexes will require 12 million tons of feed units. In 1975, all of the kolkhozes and sovkhoses in the RSFSR produced 2.6 million tons of pork and expended 22 million tons of feed units, that is, considerably more than the computed feed expenditures for the industrial production of pork.

In recent years the construction of pig fattening enterprises on an inter-enterprise basis has undergone further development. The animals to be fattened are supplied to these enterprises by the reproduction farms of kolkhozes and sovkhoses. The technological cycle for the production of pork may be disrupted if there is a considerable number of small farms. The rhythmic deliveries of young stock will be disturbed and this will lead to poor use of the production capabilities of the fattening complex and to limitations on the number of hybrid young stock that become available for fattening purposes. In the final analysis, decreases will take place in the weight increases and in the effectiveness of feed usage, the probability of infectious diseases breaking out at a complex will increase and greater expenditures will be required for carrying out additional veterinary-sanitary measures. In addition, the system of organizational-economic relationships between those participating in production cooperation will become more complicated and it will not always be possible to merge the interests of the cooperating farms in a harmonious manner. This lowers the reliability, efficiency and rhythmic nature of the functioning of the production network. Thus reproduction facilities are being created at the fattening enterprises, that is, they are truly becoming complexes for the production of pork. Other progressive methods are also being employed -- the network of reproduction farms is being regulated and reproduction is being concentrated at nearby and conveniently located (relative to the fattening complex) farms. In Estonia, for example, the construction of large regional interenterprise reproduction farms is being developed. These farms ensure the mass production of hybrid pigs for delivery to all of the kolkhozes and sovkhoses in a region and to the private farms. Existing livestock facilities at the kolkhozes and sovkhoses are being modernized for the mass fattening of young stock.

During the July (1978) Plenum of the CC CPSU, it was noted that the conversion over to industrial methods for producing pork will make it possible to raise the weight increases, shorten the fattening periods and obtain output with reduced expenditures of feed, labor and other resources. The program aimed at achieving an industrial technology for pig raising is conditioned by the need for centralizing the technical policies of this branch in a single organ and concentrating organizational control in economic accountability rayon and oblast (kray, republic) associations.

A stable supply of feed is achieved for the pig raising enterprises by creating a network of specialized feed farms and mixed feed plants attached to the appropriate associations (this method is employed extensively in the Ukrainian SSR) and also associations for the production of feed similar to

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those operating in the Moldavian SSR. Such an approach makes it possible to solve more rapidly those problems concerned with providing balanced feed for pig raising operations and organizing the sale of feed to the population.

\* \* \*

Large reserves for increasing the production of meat are available in poultry raising -- the livestock husbandry branch that is developing in the most successful manner. This is being promoted by its conversion over to an industrial basis and by the creation of the Ptitseprom system, in which 675 poultry factories were operating at the beginning of 1976. The principal trend in the development of this branch continues to be that of egg production. In 1976-1977, egg production amounted to 58.6 billion units, compared to only 28.7 billion units during the 1961-1965 period. This ensured an increase in the per capita consumption of eggs during this period of from 124 to 224 units.

Definite successes were also achieved in the production of poultry meat. During the 1971-1975 period and compared to the previous five-year plan, the average annual production of poultry meat increased by 57 percent and amounted to 1.53 million tons in dressed weight. Compared to the 1961-1965 period, the production of poultry meat had increased by more than twofold. However, notwithstanding such growth, the increasing demand for this product is not being satisfied. If this problem is to be solved, we must devote special attention to: erecting large enterprises of the industrial type for the raising of geese chicks, ducks, turkeys and geese; modernizing existing poultry factories; expanding interenterprise poultry factories.

Meat production on the private farms of the population continues to be an important reserve for increasing the production of meat. During the last three five-year plans, the average annual figures for poultry meat produced in this sector were 648,000, 711,000 and 892,000 tons respectively. For the most part, this sector of production is satisfying only the internal needs of the population (particularly the rural population) and is still not exerting a substantial influence on state procurements. During the last three five-year plans, 3,300, 3,000 and 4,600 tons were procured in this sector, or 3.8 percent, 1 percent and 0.6 percent respectively of the overall state procurements. In the interest of developing poultry raising on the private farms and increasing the state procurements, the plans call for the extensive sale of chicks (mainly of meat strains), goslings, ducklings and young turkeys to the population via the state and kolkhoz incubators and poultry factories. Consumer cooperation can increase the procurements of eggs and poultry from the population by stimulating counter sales of deficit goods, construction materials, feed and so forth.

But the chief reserve available for increasing the production of poultry meat consists of further developing broiler production. At the present time, broilers constitute approximately 13 percent of the poultry meat being obtained in the country. According to our computations, this proportion will



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increase to 50 percent by 1985. Broiler production is developing mainly as a result of the introduction of the system of raising poultry in cages, involving both the construction of new poultry factories and the more intensive use of already existing production areas. Substantial improvements have been realized in the concentration of broiler production. Compared to 1973 when 63 percent of the Ptitseprom farms had gross weight increases of more than 5,000 quintals, by 1976 the proportion of such farms had increased to 91 percent. Nevertheless, the reserves for further concentration of poultry raising have not as yet been exhausted. At one half of the farms the meat yield per laying hen was lower and the costs for weight increases, labor expenditures and feed were higher than those for the system as a whole. The experience of leading poultry factories has shown that when the broilers are raised in cages the meat yield per square meter of production space increases from 100 to 200 kg, that is, a twofold increase. The introduction of the cage system for raising poultry at all of the broiler poultry factories would make it possible to obtain approximately 200,000 additional tons of meat using existing production capabilities.

In addition to the construction of state broiler factories, interenterprise poultry factories furnish great opportunities for the raising of meat poultry. The experience accumulated in Krymskaya Oblast has shown that in addition to egg production it is possible to develop meat poultry raising on an intensive basis within a relatively short period of time through cooperation between the state enterprises and the kolkhozes. A scientific-production association for the raising of broilers has been in operation here since 1970; it involves the participation of 97 enterprises representing various departments (the Krymskoye Branch of the Scientific-Research Institute of Poultry Raising, 10 farms of the Ptitseprom System, 29 sovkhoses of other trusts, 45 kolkhozes and 11 interkolkhoz incubator-poultry raising stations). During the Ninth Five-Year Plan the purposeful and coordinated work of this association produced a threefold increase in the production of broilers. In 1976 the procurements of poultry meat in Krymskaya Oblast reached 43,300 tons and constituted 33 percent of the oblast's meat balance. The number of poultry in the oblast increased from 4 million in 1965 to 17 million head in 1976.

The organization of the industrial preparation of mixed feeds and also an increase in the production of premixes for the purpose of raising the nutritional value of the feed resources at the farms themselves are promoting the development of interenterprise and specialized poultry raising at the kolkhozes and sovkhoses. In addition to premixes, importance is also being attached to organizing the production of pharmaceutical coccids for preventing poultry losses caused by diseases. This will make it possible to obtain up to 120 additional grams of meat from each head of poultry raised.

Special attention should be given to the breeding of such poultry types as geese, ducks and turkeys. From 1960 and up until 1975 the number of geese decreased to almost one fifth of its previous level and the number of ducks -- to ten-fourths of its previous level. The number of turkeys remains at the 1960 level and amounts to only 400,000 head. For all practical purposes

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the development of these types of poultry is being carried out on an amateur basis. The reductions took place mainly in the public sector. For example, during the mentioned period the number of geese in some republics decreased to one fifth and even to one tenth of the previous levels. The breeding of geese was discontinued on the public farms in individual republics.

In late 1975 the USSR Ministry of Agriculture outlined special measures to be carried out for the purpose of developing goose raising: a standard plan was approved for a factory for 500,000 geese, the technological conditions were developed and highly productive strains were brought in. At the same time, greater use must be made of the potential available for raising geese on the private farms. As no other type of poultry, geese adapt very readily to private farms. Although they arrive in May and June from incubators, by September the young geese have grown and achieved a weight of up to 5 kg. In view of their resistance to cold, the construction of geese farms does not require great expenditures. Thus the development of this branch also appears to hold great promise for the northern regions of the country and the regions of Siberia.

An important reserve for increasing the production of poultry meat is that of improving its processing and sales. In poultry raising carried out on an industrial basis, the processing and preparation of eggs and meat for sale are performed directly at the enterprises and are the final stages in the entire technological process. However, as yet only slightly more than one half of the poultry at Ptitseprom farms is actually being processed. The remaining amount is being delivered to the meat combines. Experience has shown that a minimum of 10 percent of the live weight is lost during the transporting and delivery of the poultry (losses caused by cooling, freezing and storage in refrigerators amount to 2.3 percent of the dressed weight, reductions also take place in the grading of the meat). In 1975, when the poultry slaughtering was carried out in the farm slaughtering departments, 34.3 percent of the meat obtained was classified as being of 1st grade quality and when the slaughtering was carried out at meat combines -- 20.4 percent. According to data furnished by USSR Ptitseprom, approximately 100 million rubles worth of losses were sustained in 1975 owing to a reduction in the yield of 1st grade meat when the slaughtering was carried out at meat combines.

Notwithstanding the positive results already achieved in poultry raising, the further development of this branch requires improvements in the Ptitseprom System itself, particularly in the form of increased division of labor. An intensification of the coordinating influence of the Ptitseprom System on the development of poultry raising at kolkhozes and sovkhoses and in the private sector is inevitable. Moreover, special importance is being attached to the carrying out of breeding work on a centralized basis. In addition to raising the productivity of the poultry factories, the creation of the required number of breeding plants will also serve to ensure that the poultry farms of the kolkhozes and sovkhoses are adequately supplied with pedigree poultry. Assuming the formation and strengthening throughout the

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entire system of a common economic accountability structure, including production planning and financing problems, Ptitseprom will be able to provide a greater amount of planned assistance to kolkhoz and sovkhoz poultry raising in reproduction of the stock, in introducing progressive technologies and in organizing the production of goods on an industrial basis. Ptitseprom can exert a great amount of influence on branches that are allied with poultry raising, such as planning organizations and plants for the manufacturing of technological equipment and biological preparations and for the production of mixed feeds.

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The development of rabbit husbandry also represents an important source for supplementing the meat resources. Despite the fact that the production of rabbit meat increased by 83,000 tons over the past 5 years, its proportion with regard to the overall meat balance, just as in previous years, does not exceed 1 percent. The production of this type of meat in the public sector is negligible. Of 146,000 tons (dressed weight) of rabbit meat produced in 1975, only 7,000 tons or 4.8 percent were obtained from kolkhozes, sovkhozes or other state farms. Rabbit raising operations are concentrated for the most part in the private sector. The experience accumulated in Krymskaya Oblast is deserving of attention. It was one of the first oblasts in the Ukraine to commence the breeding of rabbits on an industrial basis.

Great reserves for increasing the production of meat are to be found in sheep husbandry. The production of this branch has been curtailed in some republics. The principal bulk of the mutton is being produced on the basis of pasture feed. During the July (1978) Plenum of the CC CPSU, attention was focused on the fact that the feed lands of steppe and semi-desert zones can be employed to great advantage for sheep raising purposes. The creation of carry-over feed reserves is of special importance for the stable development of sheep raising in such regions. More extensive use should be made of an industrial technology for sheep raising in regions characterized by a high level of cleared land.

The July (1978) Plenum of the CC CPSU singled out the following tasks as being of major and urgent importance: implementing radical improvements in feed production and creating a reliable feed base during the next few years. The resolution handed down during the Plenum contained the following statement: "Feed production carried out on the farms should become more specialized in nature and every attempt should be made to develop cooperation and agro-industrial integration and to organize interenterprise associations and enterprises for the production and processing of feed." In essence, this calls for the development of a special-purpose and complex program for the development of feed production and one which provides for the creation of specialized feed production zones. These zones must ensure the guaranteed production of forage grain, soybeans and grass meal, increased capabilities for the mixed feed industry and the creation on this basis of an all-union feed fund, the construction of interenterprise mixed feed plants and the

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creation of specialized feed production associations for ensuring that the interenterprise livestock raising complexes and kolkhozes and sovkhoses are supplied with adequate quantities of feed.

The need for ensuring more efficient use of capital investments intended for the development of livestock husbandry should be emphasized. In recent years there has been an increase in the fixed production capital for livestock husbandry at the kolkhozes and sovkhoses, while at the same time the workload per worker in this branch has remained at the former level or has increased negligibly. Growth in the capital-labor ratio is not being accompanied by an increase in labor productivity and this is bringing about a reduction in the efficiency of capital investments. At the same time, it is generally known that labor productivity increases by tenfold when beef is produced on an industrial basis, pork -- by a factor of 8, milk -- by a factor of 5.6 and feed expenditures per unit of product decrease respectively by factors of 2 and 1.8 and by 28-32 percent.

The use of capital investments for measures aimed at completely solving those problems associated with converting livestock husbandry over to an industrial basis will make it possible to realize the following: first of all, to reduce considerably the number of workers in livestock husbandry; secondly, to produce a greater quantity of output using the same feed; thirdly, to improve the supply of meat for the population.

The above represent just a few of the conclusions drawn from an analysis of the practice and actual status of production of various types of meat at kolkhozes, sovkhoses, production associations and private farms and also the experience accumulated in the use of available reserves. In the process, the actual resources of grain and other types of feed available to the national economy, particularly at kolkhozes and sovkhoses, are taken into account.

The data obtained from leading experience indicates that a more rational (special purpose) use of planned capital investments and feed and modern production organization can serve to eliminate the deficit in the meat balance within a short period of time. In light of the tasks established during the 25th party congress, the July (1978) Plenum of the CC CPSU and in corresponding resolutions of the CC CPSU and the USSR Council of Ministers, specific special purpose programs for the development of livestock husbandry and feed production by individual republics, oblasts and krays and involving participation by specialists in the various areas should ideally be developed within the framework of the national economic plan. For example, as already mentioned, a special purpose program for pork production can be developed for such regions as the north Caucasus, the Volga region, the central-chernozem zone and others, which are presently producing the principal bulk of this type of meat. Requirements exist for implementing a complex of measures aimed at increasing the production of a particular type of product and for solving the protein problem in feed production for definite economic regions of the country and in a timely manner. Here we have in mind the practical

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Implementation of the decisions handed down during the July (1978) Plenum of the CC CPSU and the resolutions of the CC CPSU and the USSR Council of Ministers dealing with these matters, through the joint efforts of the appropriate ministries and departments, planning, state and economic organs, specialists and agricultural workers and with the cooperation of the scientific research institutions.

The successful implementation of the vast program for further agricultural development and particularly in livestock husbandry, adopted during the July (1978) Plenum of the CC CPSU, will promote solutions for large-scale social tasks -- achieving further improvements in the standard of living for the people and bringing the material and cultural-domestic living conditions in the cities and rural areas closer together.

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