
The contemporary conditions of the livestock production in Russia and the role of breeding organization on the course to the market oriented animal husbandry

V. V. Lavrovski & G. V. Rodionov

*Moscow Timiriazev Agricultural Academy,
Timiryazevskaya 49, 127550 Moscow, Russia*

The gross agricultural product in 1999 was 624,8 Billions Rbl (~ 27 Bil \$), among it total plant product was 323,6 Bill. Rbl or 51,8 percent (9 percent increase) and total animal product was 301,2 Billions Rbl or 48,2 percent (3,7 percent decrease).

There is clear evidence of the redistribution of the main plant and animal products between the farms which belong to the different categories of owners. Since 1995 the large scale collective farms continued to loose their positions in favor of individual private farms in production of cereal crops, sugar beat, sunflower seeds and most dramatically in favor of households in production of potato, vegetables, meat and milk. The egg production in collective farms more stable and has a tendency to increase (Table 1).

Table 1. The structure of the main agricultural products in the farms of different possessing categories.

Items	Collective commercial farms		Household farms		Individual commercial farms	
	1995	1999	1995	1999	1995	1999
Cereal crops	94.4	92.0	0.9	0.9	4.7	7.1
Sugar Bean	95.9	93.8	0.6	0.8	3.5	5.4
Sunflower seeds	86.3	86.1	1.4	1.3	12.3	12.6
Potato	9.2	7.0	89.9	92.0	0.9	1.0
Vegetables	25.3	20.9	73.4	77.0	1.3	2.1
Meat (livestock and poultry in live weight)	50.2	38.7	48.2	59.3	1.6	2.0
Milk	57.1	49.1	41.4	49.2	1.5	1.7
Eggs	69.4	70.0	30.2	29.7	0.4	0.3

Situation of animal production in Russia

These tendencies take place without principal changes in ownership structure and agricultural lands distribution. (Table 2).

On the course of the last 5 years the 83,8 percent of all agricultural lands (including 86,9 percent of tillage and 79,3percent of pastures) belong to the large scale collective farms. It means that the animal population density in households is about 9 times higher for cattle, 14 times for cows, 12,5 times for swine and about 40 times for sheep and goats when compared to collective farms. The animal population density in the individual private farms is lower (three times lower for cattle, four times for cows, two times for swine) and only sheep and goats prevail of two times in individual farms in comparison with collective farms. It is clear that households and individual farmers are unable to supply themselves with forage, pasture grasses and hay and have to be supported (legally or illegally) by big collective farms in the form of natural salary (for their own employee), for example, or barter. Actually, without such a formal or informal support from the side of large-scale collective farms, the low-scale production of animal products in newborn individual farms is unprofitable and, therefore, non developed. Insufficient agriculture credit system and unattractive investment climate in agriculture create difficulties not only to individual private farms but for also to large-scale collective enterprises.

Table 2. Distribution of the Farm lands (mill. ha) and livestock (mill. heads) between the farms of different possessing categories in 1999.

Items	All farms	Collective commercial farms	Households	Individual commercial farms
Number of farms		~ 27 000	~ 2 700 000	261 100
Total Agricultural lands, (mill. ha)	195,2	163,5	10,5	13,0
(%)	100	83,8	5,4	6,6
Tillage, (mill. ha)	121,6	105,7	4,4	9,8
(%)	100	86,9	3,6	8,0
Pastures, (mill. ha)	69,7	55,3	4,8	3,1
(%)	100	79,3	6,9	4,4
Cattle, (mill. ha)	27,5	17,4	9,6	0,5
(%)	100	63,2	34,9	1,8
Cows, (mill. ha)	12,9	6,9	5,8	0,2
(%)	100	53,4	45,0	1,6
Swines, (mill. ha)	18,3	9,9	7,9	0,5
(%)	100	54,1	43,2	2,7
Sheeps and Goats (mill. ha)	14,0	4,8	8,4	0,8
(%)	100	34,3	60,0	5,7

The main tendencies in total cattle, cows, swine number and total milk and meat production dynamics are presented in figures from 1 to 5.

The total number of farm animals in Russian Federation since 1990 year is still decreasing; the exception might be the relatively stable number of the swine during the last three years in farms of all categories, due to the stabilization of the production in the large-scale collective farms, the so called "industrial complexes". The total swine population in these farms during the last three years could be estimated in 52 000, 104 000 and 208 000, respectively.

Nevertheless, total meat production continues to fall down, because of decreasing number of cattle. The total productivity of households is stable and since 1995 overcoming the productivity of the collective farms. The individual private farms play unnoticeable role in meat production within the country context. After the economical crisis of the August 1998, the imported meat decreased from 35.5 in 1997 to 25.4 in 1999. The meat prices in the same period increased 2.7 times.

Tendencies in the milk production are almost the same; in 1999 both collective farms and households produced the equal quantity of the milk. The mean milk productivity in collective farms in 1999 was 2 283 kg per cow. Increasing role of households in animal production is in the strong relation with low salaries of employees in collective farms. The mean salary per month in collective agricultural farms in 1999 was 612 Roubles (26.5 US\$). It's 3 times less then in food processing industry. This conditions are pushing the rural employee to develop their own households, using material resources (forage, transport, energy) of the collective farms.

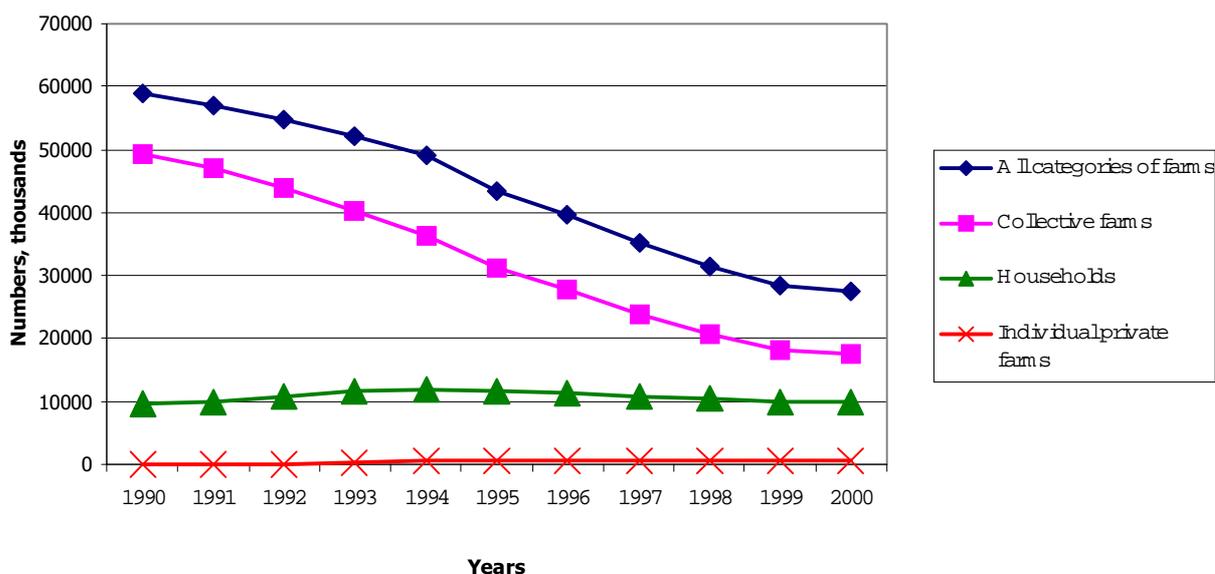


Figure 1. Tendencies of the total cattle number dynamics in the farms of different ownership categories during 1990-2000.

Breeding organizations in Russian Federation

The structure of the Russian Breeding Organizations is still under transition and development because of serious changes of Russian policy and economics. Privatization in agriculture has covered the systems of food processing and trade. But the sphere of production and land possessing until now are out of serious reform. The gap between semi-socialistic or semi-feudal agricultural production and wild capitalistic food processing and trade without real (financial) state management and control resulted in ugly disproportion of income distribution and appropriation. Enormous size of Russian agriculture, low level of mechanization/automatization and informatization, pure technological culture makes the process of transition and reform inoperable. We can observe single examples of effective breeding organization: in Moscow Region "MOSPLEM" and Leningrad "AIRCHER" Region, but, as a rule, the farm managers prefer informal temporary unions and connections to solve the present day problems.

The Animal Breeding in Russia is subordinated to the State Law "On Animal Breeding" and special regulations.

In the head of livestock production and breeding in Russian Federation is the Department of Animal Production and Breeding Practice of the Russian Ministry of Agriculture and Food¹. There are Divisions of Animal Breeding practice and Breeding Inspection, responsible for organization of animal breeding in the Regions. The separate breeding specialists are included

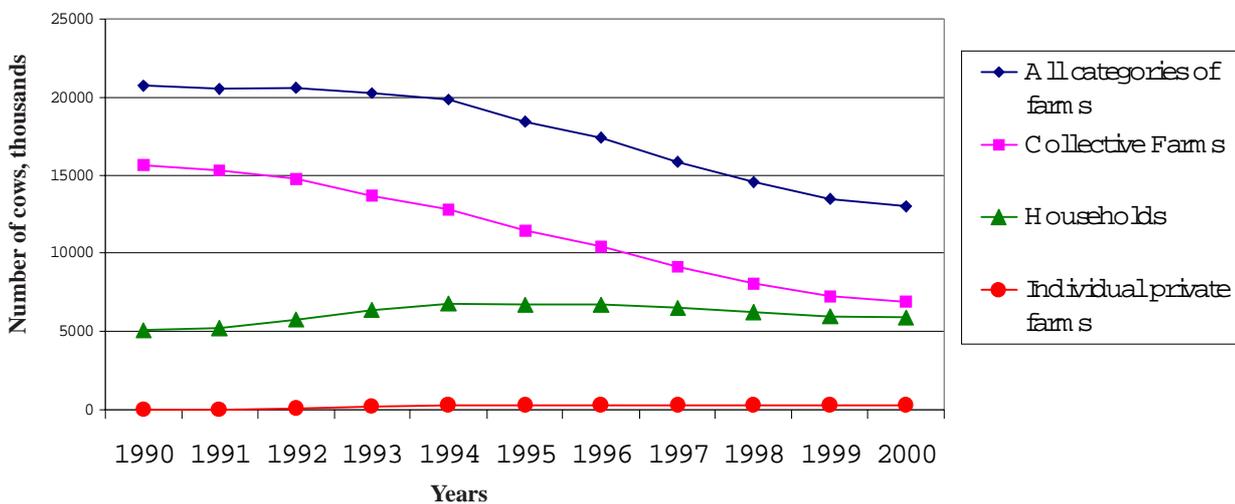


Figure 2. The tendencies of the cows number dynamics in the farms of different ownership categories during 1990-2000.

¹Vassili V. Shapotchkin is actually the Head of Department.

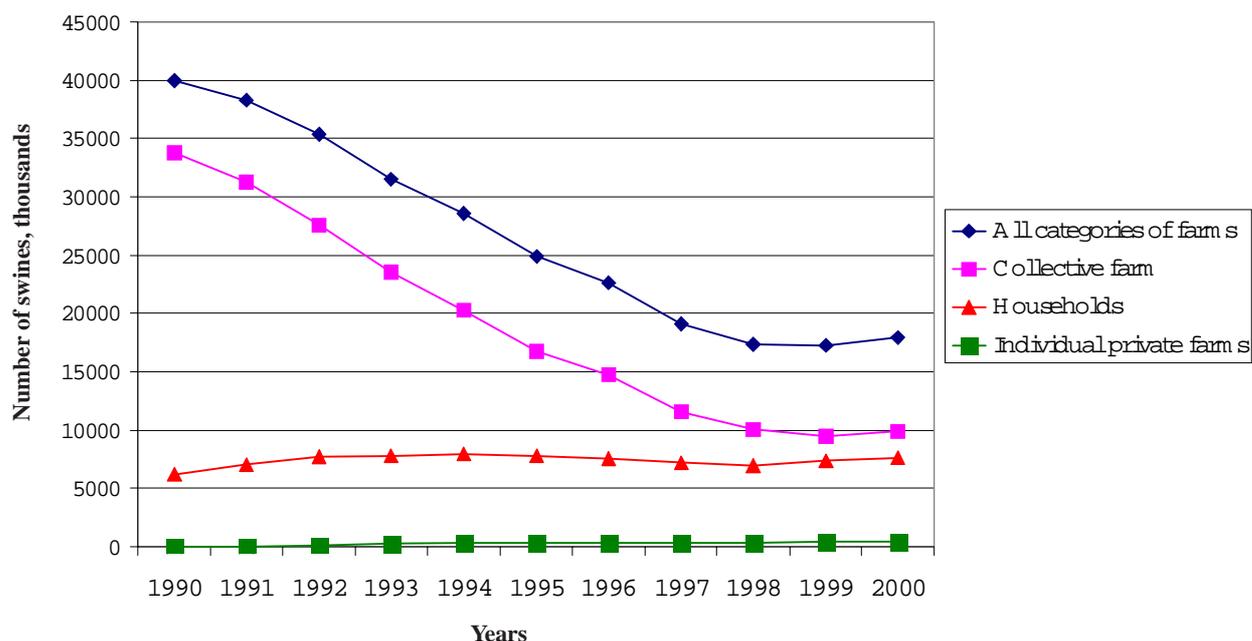


Figure 3. The tendencies of the swines number dynamics in the farms of different ownership categories during 1990-2000.

into Divisions of different livestock industries (cattle, swine, horse, poultry etc production). There is “ROSPLEM” Division with regional branches, responsible for organization of AI all over the country, realised through the registered AI stations.

The Animal Production Departments of the Regional Agricultural Ministries are responsible for the distribution of Governmental donations, breeding planning, inspection of the registered stock and reproductive farms, AI and embryos transfer stations, milk recording laboratories, breeding data collection, processing and statistic, grading up of the personal qualification and professional study. All information about animal breeding is collected in the Principal Information/Selection Center of the Russian Institute of Animal Breeding Practice (VNIIPLEM), which is directly subordinated to the Department of Animal Production and Breeding Practice of the Russian Ministry of Agriculture and Food. The 24 Research Institutes of Russian Academy of Agricultural Sciences, Animal science faculties and Departments of the 65 Agricultural Universities all over the country create “extension” net for Russian animal production.

Although 50 percent of the livestock is concentrated in households and individual private farms, the Russian breeding organizations concentrate their efforts and attention on the animal herds of large-scale collective farms. There are no animal marking and identification, no milk recording

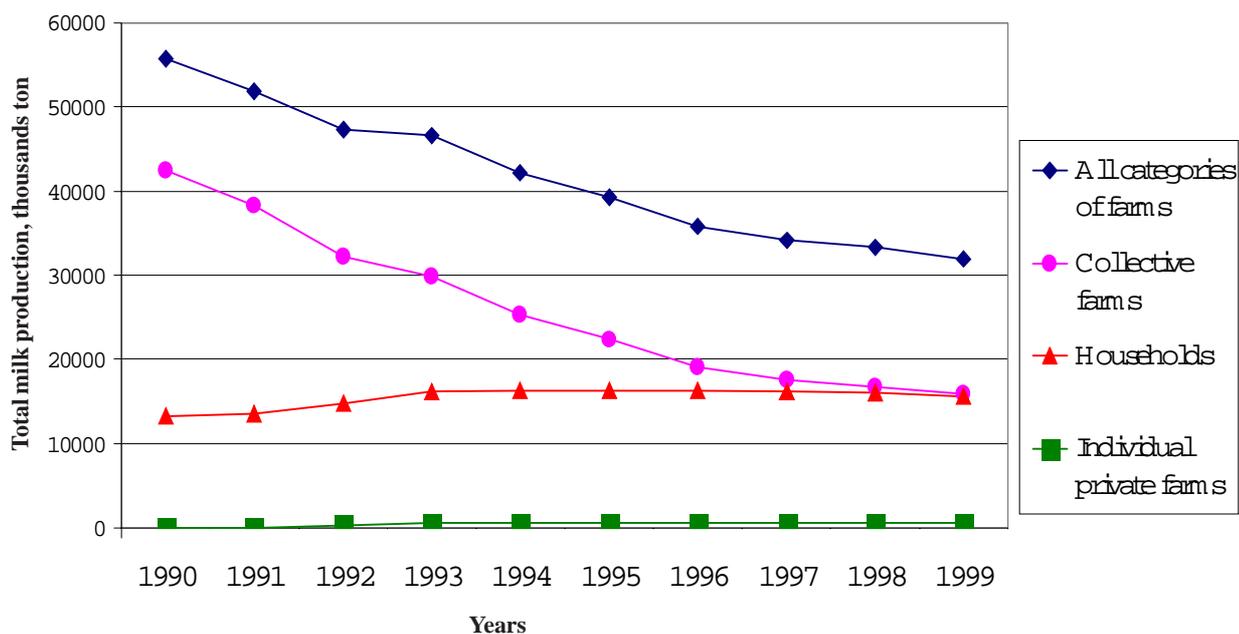


Figure 4. The tendencies in milk production during 1990-2000.

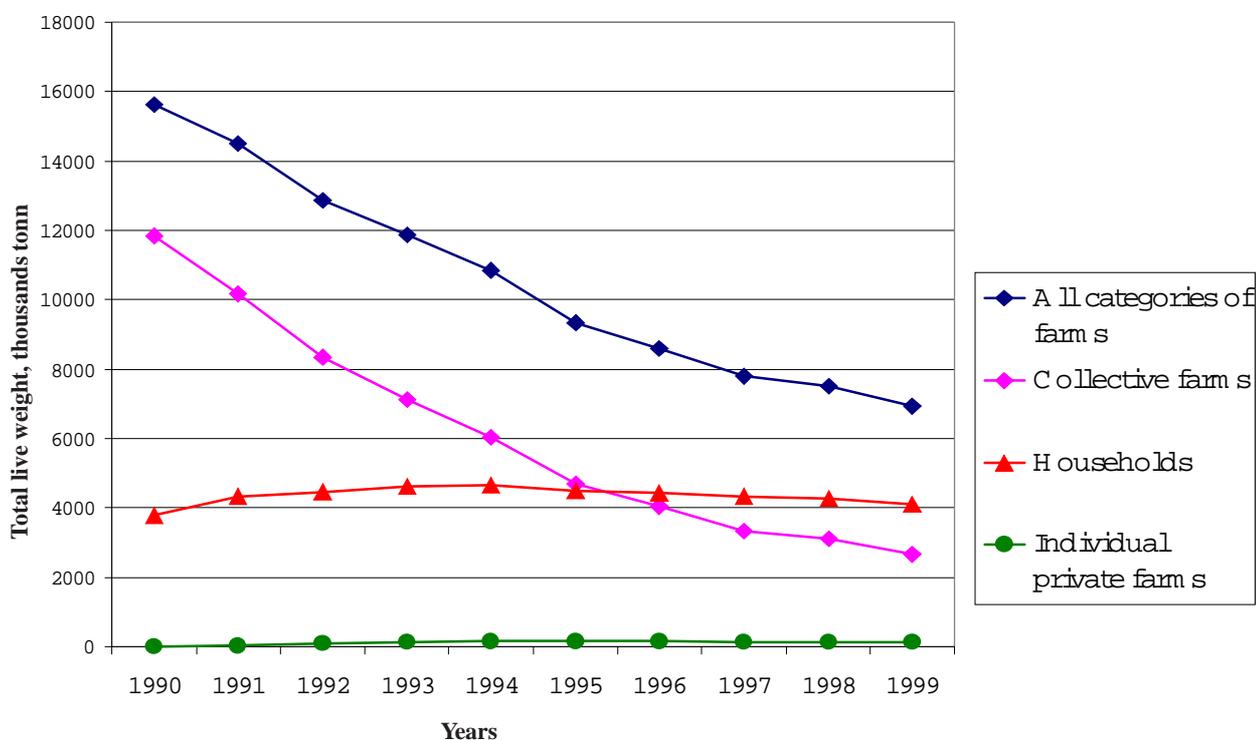


Figure 5. The tendencies in meat (including poultry) production (sold for slaughter in live weight) during 1990-2000.

in the households and individual private farms (excluding rear examples in horse breeding), therefore, all statistics and valuations in these categories of farms are very approximate. The only service available to the private farmers is state veterinary control and animal health protection, which is really severe because of well developed State Veterinary Laws. The other service which becomes popular among the private farmers is artificial insemination of the cows by the semen of high quality purebred sires. The "ROSPLEM" organization through the system of the regional AI stations is proposing the quality semen and insemination service for individual farmers and householders, together with the large-scale collective farms.

In accordance with the State Breeding Low ("On Animal Breeding") the breeding stocks (herds) of agricultural animals might be registered in the State Breeding Register for:

- inventory of the breeding herds in Breeding Organizations;
- determination of the State donation for Breeding Organizations;
- data-base producing for breeding actions planning; inspection of the Breeding Organization and control of its licensed activities;
- marketing and certification of breeding products (animals, semen, embryos);
- breeding products evaluation for insurance, trade etc.

Both private and state herds are the subject of state registration by Breeding Low in case of their legal (by license) activity in the field of animal breeding and/or reproduction. There are four main grade for such activities:

- stock breeding farms (improvement of animal's productive qualities through the intensive selection and purebred mating and producing both animal products and the breeding animals - males and females - for sale);
- reproductive farms (producing the animal products and breeding animals for sale);
- AI stations or organizations (collection and distribution (sale) for AI the semen of the testing and tested sires;
- embryos transferring organization.

On the basis of special questionnaires (Figure 6) the Principal Information/Selection Center in Russian Institute for Animal breeding practice (VNIIPLEM) is preparing documents (register forms) for approval by Department of Animal production and breeding practice in the Russian Ministry of Agriculture and Food .

The farms and organizations which got the license and passed the registration procedure may get unique registration code in the State information system. Every year before February 1 they are obligated to send breeding report on floppy disk including all information about changes in their herds during the year (number of animals, productivity,

breeding value, reproductive abilities, information about approving sires etc.) The control of the dates significance lays on the herd owners or collective farms managers and regional breeding departments of the local agricultural administration. Both private individual or collective farms might be registered and licensed by law, but there are only example private farms owners (horse breeders as a rule) trying to follow state register.

Before obtaining license and registration ,the herd owner or herd manager (those who intend to do their business with breeding products : animals, semen, embryos) have to implement and follow state regulations in the fields of:

- animal marking and identification;
- productivity traits evaluation, control and recording.

State system for cattle marking and identification

In accordance with the Article 22 of the State Low “On Animal Breeding” the State Marking and Identification System is destined for:

- accurate animals identification on the basis of unique coding and marking numbers;
- visual identification of the every animal both in the frame of separate herd and all breeding population of the country;
- normal functioning of the information system for diary cattle stocks;
- implementation of the technological system for diary cattle stocks;
- support and promotion of the technological system for significant productivity registration;
- improvement of the dates control for breeding products certification

The identification number of the breeding animal consist of the ten figures, where two first present the code of the Region (for example “50” is the code for Moscow region, “64” – Saratov region etc.) and the other eight (from 00000001 to 99999999) destined for animal numeration inside the region.

The standard brass or aluminum rectangular ears tags (80 mm x 13 mm) should be used as bearer of identification number.

The tag should be fastened on the right ear of the calf not later then three weeks after birthday by certified specialists of the breeding organization.

The individual technological four-meaning numbers on plastic bearers might be used for better animals recognizing during milking, weighting, artificial insemination etc. The plastic left ear tags, bracelets or collars might be used for these purposes.

There are regional factories producing special equipment for ear tagging themselves or in cooperation with foreign companies and associations (Germany, New Zealand, USA etc.).

The State Breeding Register	<input type="text"/>								
QUESTIONNAIRE FOR BREEDING STOCK									
Information about herd owner									
Name of Organization _____									
Legal address <input type="text"/>									
(Postal Code and Address)									
Telephone # (_____) _____ Fax # (_____) _____									
Identification Code of Organization						<input type="text"/>			
Railroad Code						<input type="text"/>			
Taxpayer's Code						<input type="text"/>			
Bank account # _____									
License issued _____ 2000 , valid to _____									
						<input type="text"/>			
The Name of License issuing Organization _____									
The sort of Activity by License _____									
The Animal Species _____									
Participation in Animal Breeding Associations, Unions, Societies									
_____ (Name, Founder, Participants)									
The sort of Property _____; the percentage of Federal State Property									
(State, Regional)									
_____ (%) ; the percentage of Regional Subject of RF _____ (%)									
The Head of Organization _____									
(Position, Name, Second name, Family name)									
The Breeder _____									
(Position, Name, Second name, Family name)									
Telephone (_____) _____									

Figure 6. Questionnaires for the State Breeding Register.

All breeding animals in 1999 from registered herds have at least technological plastic ear tag and the same tattoo number. The identification number tagging is only under developing, therefore breeding animals from registered herds have their "virtual" identification numbers in computers only.

**State system
of
productivity
traits and
genotype
evaluation,
control and
recording.**

In accordance with the State Instruction about licensing of different activities in the field of animal breeding along with the stock farms, reproduction farms, AI stations and embryo transferring organisation the controlling organisations for productivity traits and genotypes evaluation and recording have to obtain state license.

Such organisations may propose the service for the stock or reproduction farms in the following fields:

- control-testing stations for comparison and evaluation of the new selection achievements in standard technological conditions;
- laboratories for milk, meat, wool etc. quality control and recording;
- immuno-genetic laboratories for pedigrees control and genetic anomalies reveal;
- computer information centres for data collecting, processing, evaluation and distribution.

There is no special recording organisation for whole Russian Federation. The Department of Animal Production and Breeding Practice in the Russian Ministry of Agriculture and Food carry out the general control over milk recording laboratories by the licensing and registration system.

In 1999 only 22 Russian regions out of 74 had 35 milk recording laboratories which covered the total population of 33 7000 cows. This is only 18 percent of breeding population which use the service of certified milk recording laboratories, the other 82 percent of farms check the quality of their milk in their own farm laboratories using old methods for milk fat determination (sulphuric acid- isoamil spirit technique). There is no control on milk protein, lactose, somatic or bacterial cells content in farm laboratories. The main problem for existing milk recording laboratories is insufficient old fashion equipment. For example only 4 milk recording laboratories out of 35 are equipped by "Combifoss" instruments.

Actually, the most severe milk quality control takes place on the dairy and milk processing plants. The laboratories of this plants take care of the milk protein and fat content, lactose, somatic and bacterial cell count, alcohol test and milk temperature and density. For example, Moscow and Moscow regional milk processing plants (including joint-venture companies "Compina", "Ermann" and "Wim-Bill-Dann") have well equipped milk laboratories and they are ready to propose the better prices (to 8 Rbl instead

3 Rbl/kg) for high quality milk. These severe requirements of the processing industry together with necessity of State registration for breeding stock and reproductive farms is the serious stimuli for large scale milk producers.

As reported in table 1, 49.2 percent of total milk production is concentrated in households (1-3 cows per family). There is almost no control of the breeding organisations over this category of farms in the frame of milk recording. There is only veterinary control at the level of local municipal administration and local markets. The only example householders are keeping home records of animals productivity.

The milk recording laboratories are implementing its business on commercial base, so milk producers are obligated to pay for laboratory analyses. The equipment in such laboratories consists, as a rule, of a mixture of machinery, both imported (in former Soviet period, in the frame of international projects, for example "The Improvement of the Dairy Cattle Breeding in Moscow region" together with ADT, Germany) or home produced in former Soviet Union. The imported equipment, as a matter of fact, is old, second hand and Russian one is unreliable and old fashion (unable to count somatic or bacterial cells number, to measure lactose and the protein content). But because of economical situation in agriculture there are no enough investments into agricultural service.

The example of Moscow Timiriachev Agricultural Academy shows clearly the economic effectiveness of the milk recording service when and if it is only possible to obtain the necessary equipment. In 1998 on the basis of MTAA Department of Beef and Dairy Cattle Breeding and former Agricultural Ministry laboratory for testing analytical automatic machinery and equipment "AgroPribor" the Milk testing laboratory was established to propose services for dairy farms in Kaluga, Moscow and the Ryazan regions. Now it covers about 24 registered breeding farms with the total population of 15 000 dairy cows.

In 1999, the Laboratory following to sophisticated procedure got the State License. At first step the below mentioned documents were produced.

- application for License;
- the copy of MTAA Status, notary approved;
- the copy of MTAA State Register;
- the copy of taxpayer (MTAA) register formulary;
- the copy of Tax Inspection Register inquiry;
- the permission of Municipal Anti-conflagration Office
- the copy of bill about payment to Federal budget for Application examination and conclusion.

At the second step the Commission of the Moscow Regional Ministry of Agriculture examined *in situ* the equipment of the laboratory, methodology and personal qualification. At the third step the Moscow Regional Ministry

of Agriculture produced the official conclusion and took necessary decision. At last (fourth step) on the basis of above mentioned conclusion the Department of Animal Production and Breeding practice of Russian Ministry of Agriculture and Food has issued the necessary License for three years. In accordance with the License the laboratory of MTAA is permitted:

- to test and record milk quality;
- to test pedigrees and confirm breeding value of the animals (dams);
- to propose educational programs for animal breeders and milk testing laboratory experts.

Now the laboratory is relatively well equipped with “Milkoscan”, “Fossomatic”, necessary reactive, the working personal possesses many years experience. Thanks to financial support of the World Bank Project ARIS the Ministry of Agriculture decided to buy new highly productive equipment for milk testing.

Conclusion

Since 1990 to 1999 the decreasing of the total number of cattle, swine, sheep and goats, meat and milk production may be observed in Russia (per capita meat consumption decreased to about 37 kg). This downfall is in the strong relation with the decrease in production in large scale collective farms, which still may not be compensated by production of households and individual private farms. During the last two years the situation in livestock and poultry production was deteriorated because of extreme drought and low yield of grain and fodder crops.

The growth of the gross agricultural product (in Roubles) was achieved because of inner prices increase.

Instead of capitalisation (concentration and specialisation of animal production farms) the old, low-productive, unprofitable household production takes remarkable place.

In this condition the breeding organisations are concentrating their efforts and attention on large scale producers, but, because of:

- uncertainty with Land Possessing reform;
- absence of investments in agricultural production;
- low productivity in breeding population;

the effectiveness of selection actions is insufficient and there are no real call for breeding service (animal marking, milk recording, sire testing etc.).

The limited State resources are sufficient to support only example stock farms in different regions (through the system of “per dam” donation). In surrounding of the great industrial cities prosperous food trade companies and big processing plants may redistribute (and they really do it!) their profit to reconstruct large scale farms as raw material supplement basis for itself.

The international breeding projects and organisations (ICAR as matter of fact!) may play their remarkable role through the organisation of the example milk recording laboratories on the basis of Research institutes and Universities with the main idea to educate the future animal producer and create future consumer of high productive technologies and modern equipment.

The local low scale milk/meat production and market may be transformed and developed thanks to the self-organisation of hole-sale trading and relapsing food, instruments, services, knowledge supply.

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