
Economic and financing aspects of introducing and maintaining animal recording systems in smallholder farming in Slovenia

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Milk recording in Slovenia is performed according to A4 method. 74 000 dairy cows, or 6 127 herds are included to the control. On average this means only 12.4 dairy cows per controlled herd. Milk recording of herds is done by 235 recording persons, employed by the regional agriculture and forestry centres, founded by the Slovene Agriculture and Forestry Chamber. Twenty supervisors are in charge of super control, and twelve experts and technical staff of data processing. On average, the official recording person has to perform the control on 25 farms, or 314 cows. Milk recording is financed to a great extent by the government as professional duties of the Ministry of Agriculture, Forestry and Food. Breeders pay only the charges for somatic cell analysis. In 2002 the sum for the basic milk recording, super control and data processing, as well as providing the results to breeders will accounted to 14 091 SIT per cow, which means 217 kg milk at the average purchase price of 65 SIT. Because of small herds and the necessary economy of recording services, new methods, approved by ICAR are being considered, such as AT and B4 method. Reference A4 method should then be used merely in bull dams herds (350 herds) and in herds with outstandingly high milk quantity. AT method should be used in all the herds with at least 5 cows per herd (also on bigger farming enterprises). In all the other herds with less than 5 dairy cows, B4 method should be used and carried out by breeders themselves, where at least three yearly recordings would be performed by the official recording person. A4 reference method is planned to be used in all herds also for super control. 5 % to 25 % (5 % for A4, 10 % for AT, and 25 % for B4 method) of the herds should undergo super control annually.

Keywords: Dairy cows, animal recording system, costs.

Summary

Introduction

Within the borders of the Republic of Slovenia today, the first milk recording organization was founded in 1904 in Maribor, which was at the same time also the first such organization in the former Austro-Hungarian monarchy (recording was done only for the owners of the large estate). For smallholders milk recording started in Češnjice, a settlement close to Selce, and was carried out by the Animal Breeding Organization in 1906. Soon, breeders associations followed in other parts of the country. Breeders' organizations expanded after the 1st World War in then so called Dravska Banovina, especially after the year 1930, and after the 2nd World War, the number of recorded cows started to rise gradually. First of all, milk recording was carried out in the herds of the large state farms. In the years 1970 to 1980, it spread also to the smaller farms, which started with intense milk production. In Slovenia, milk recording according to A4 method has been used since 1956 (Fercej, 1984; Pogacar, 1985; Osterc, 2001). In 1984 Slovenia applied for a membership of International Committee for Animal Recording (ICAR), although it was still a part of the ex Yugoslavia at that time, and in 1986 at the ICAR Session in Brussels Slovenia was appointed as a fully authorized member of ICAR and the INTERBULL sub-committee. For ten years we were trying very hard to obtain the dry ICAR stamp to be used on documents and recording results. In May 1996 we finally had a chance to receive the visit of two ICAR inspectors, Dr. J. Crettenand from Switzerland, and Dr. Batchelor from England. They examined the whole process of milk recording in Slovenia, from herd control, sample taking, milk analysis in the laboratories, data processing, herdbook keeping at our regional centers, to the registration of animals. At the 30th ICAR Session in the Netherlands, based on their report, Slovenia was granted the use of "*Quod scriptum est manet*" stamp on all the documents and reports, describing the origin and production data of our recorded animals and their offspring (Klopčič, 1996; Pogacar, 1996).

Milk recording in Slovenia

In Slovenia, milk recording is carried out according to A4 reference method. The allowed interval between two recordings is 22 to 37 days. Each year at least eleven recordings must be taken per each controlled herd. Recording persons measure the quantity of milk of the evening and morning milking, for all the cows, milked on the control day. Milk samples are taken according to the ICAR recommendations of all the cows; the proportional part of both milkings. The samples are taken by the shortest route to the laboratories at the regional centers, where milk fat, protein and lactose content, as well as somatic cell count is determined. Some laboratories are equipped also for the determination of urea content from the milk control samples of dairy cows (Recommendations, 1996; ICAR Agreement, 2001).

As illustrated in Table 1, the number of recorded cows from 1970 to 2000, increased more than three times. At the moment, 71 000 cows are in recording, which presents 55 % of all dairy cows in Slovenia. As many as

Table 1. Number of recorded cows in the period from 1970 to 2000 per separate breed.

Year	Simmental	Brown	Black & White	Other	Total
1970	5 091	9 247	3 982	1 703	20 023
1980	16 063	11 362	8 694	1 638	37 757
1985	29 306	18 692	10 348	548	58 894
1990	29 253	17 038	11 402	431	58 124
1995	31 613	17 813	16 231	555	66 212
1997	30 888	16 774	18 219	879	66 760
2000	29 968	17 165	23 106	891	71 130

42 % of recorded cows are of Simmental breed, followed by Black & White breed (32 %), and Brown breed (24 %). Based on the Cattle Breeding Services report we can conclude that there are substantial differences among regions and in regard to different breeds. We can also conclude that in the year 2000 there was a total of 128 180 dairy cows recorded in Slovenia. 81.6 % of this total was of Black/White breed, 52.9 % of Brown, and 46.8 of Simmental breed.

In the last decade noticeable differences in breed structure of the herds in control can be seen. As the number of Simmental and Brown breed cows stayed the same, the number of Black/White recorded cows doubled in the years from 1990 to 2000. Even greater differences in breed structure of our herds are evident from data on the first inseminations of separate breeds in the last 15 years (Table 3). The number of first inseminations decreased 10 % in the last 15 years. The fall is most pronounced for Brown breed, because it dropped from 73 000 in the year 1985, to 27 600 in the year 2001. The 10 % decrease can be seen in

Table 2. Herd size and the proportion of the recorded cows in separate regions (year 2000).

Regional centre	No. of dairy cows	No. of recorded cows	The rate of recorded cows	No. of recorded farms	No. of complete lactations	No. of dairy cows/farm
Murska Sobota	17 599	10 079	57.27	1 549	7 569	6.7
Ptuj	23 970	14 440	60.24	1 089	11 451	14.6
Celje	26 575	13 447	50.60	973	10 782	14.5
Kranj	14 729	7 777	52.78	373	5 892	20.9
Ljubljana	36 141	19 234	53.22	1 543	15 802	12.7
Nova Gorica	9 166	6 153	67.13	670	4 107	8.8
Total	128 180	71 130	55.49	6 197	55 603	11.4

the number of Simmental breed, while the number of inseminations with Black/White bull semen increased (75 %), so did the number of inseminations with the semen of beef breeds (three times).

Although the number of recorded cows substantially increased in the last 15 years, the number of recorded herds dropped. This fact is the consequence of the concentration and specialization in milk production process. Small holders and elderly farmers abandoned milk production, also due to the strict hygienic and quality measures of purchased milk, and because dairies stopped milk collection in remote, and mountain regions. Thus, many breeders entirely abandoned milk production, they even stopped with cattle production and production of dairy cows. Some reoriented to suckler cow production, some to the production of small ruminants. Regretfully, many stables and cowsheds remained empty. Yet, on the other hand we have breeders who intensified milk production, enlarged their herds, and expanded the farms by taking the land on lease. Because in Slovenia we do not have milk production restrictions (production system quota), there are practically no limits for the size of herds or the quantity of milk yield. The restricting system is expected to be introduced in 2003. For many years in the past, the economic situation of our farmers was poor, especially in meat production sector, as well as in favourable conditions of milk production development. Therefore, the changes in the structure of breeds can be understood, namely in the case of Black & White breed, for these cows, compared to Brown breed, give 1 750 kg or compared to Simmental cows even 2 270 kg more milk in standard lactation (Klopčič, 2002).

In Table 4 the changes in the number of recorded cows in herds in the period between 1985 and 2000 are presented for family farms and for large scale state farms, separately. The number of state farms is decreasing rapidly; they only breed half of the stock they used to have in 1985.

Table 3. Number of artificial inseminations in different breeds in the last 15 years.

Year	B*	S	BW	RC	MB	Beef*	Total
1985	73 505	126 521	20 103	160	0	6 864	227 162
1990	56 262	116 642	22 672	42	0	7 436	203 054
1993	49 923	115 283	22 800	125	0	6 500	194 631
1995	45 079	119 291	25 468	170	0	10 557	200 565
1997	36 880	119 513	25 597	298	1 780	15 745	199 813
2000	29 338	113 827	33 257	359	0	20 703	197 484
2001	27 682	112 161	35 410	417	0	22 644	198 314

**B – Brown breed; S – Simmental breed; BW – Black and White breed; RC – Cika breed; MB – Montbeliarde breed; Beef – Beef breeds*

Table 4. Number of breeders and recorded cows in different sectors.

Year	No. of breeders in milk recording			No. of recorded cows		
	Family farms	State farms	Total	Family farms	State farms	Total
1985	10 030	56	10 086	49 147	9 747	58 894
1990	7 905	48	7 953	50 063	8 061	58 124
1995	7 797	31	7 828	59 404	6 808	66 212
1997	7 430	27	7 458	59 412	6 311	65 723
2000	6 196	23	6 219	65 709	5 421	71 130

Table 5. The average number of cows per recorded herd in separate sector and per recording person.

Year	Average number of cows per rec. herd			Total no. of rec. persons	Average no. of cows per rec. person
	Family farms	State farms	Total		
1990	6.3	168	7.3	245	237
1993	6.9	159	7.7	241	270
1995	7.6	220	8.5	243	272
1997	8.0	234	8.8	237	277
2000	10.6	246	11.4	235	303
2001	11.3	209	12.1	236	314

Changes in the size of herds on family and state farms are presented in Table 5. At the moment an average number of dairy cows per recorded herd is 12.4, which is too high compared to the average number on Slovene farms (only 4.17 cows /farm). Because of bigger size of herds, the average number of recorded cows per recording person increased from 237 cows in 1990 to 314 cows in 2002. At present, one recording person performs the control in 26 herds on average per month.

In Table 6 the dispersion of recorded herds and cows in the regional centers is presented. We can notice great differences in the structure of breeds and in the size of farms. Milk and cattle production is abandoned to a great extent in the regional centre of Murska Sobota and Nova Gorica, while the number of dairy cows show an upward tendency in the regional center of Kranj. However, the latter is the smallest in size, but has

Table 6. Number of breeders and recorded cows in separate regional centres (year 2002).

Regional centre	Number of breeders in MR			Number of recorded cows		
	Family farms	State farms	Total	Family farms	State farms	Total
Murska						
Sobota	1 500	-	1 500	10 300	-	10 300
Ptuj	994	1	995	14 235	165	14 400
Celje	998	2	856	12 498	80	12 578
Kranj	374	6	380	7 107	1 093	8 200
Ljubljana	1 147	8	1 155	12 738	2 462	15 200
Nova Gorica	749	5	754	5 354	951	6 305
Novo mesto	486	1	487	6 958	59	7 017
Total	6 104	23	6 127	69 188	4 812	74 000

Table 7. Average number of cows per recording person in different sectors (for the year 2002).

Regional centers	Average no. of cows per rec. herds			Total no. of rec. persons	Average no. of	
	Family farms	State farms	Total		Cows per rec. person	Herds per rec. person
Murska						
Sobota	6.9	-	6.9	35	294	43
Ptuj	14.3	165	14.5	47	306	21
Celje	14.6	40	14.7	38	331	23
Kranj	19.0	182	21.6	19	432	20
Ljubljana	11.1	308	13.2	50	304	23
Nova Gorica	7.1	190	8.4	25	252	30
Novo mesto	14.3	60	14.4	22	319	22
Total	11.3	209	12.1	236	314	26

outstanding production results compared to other regional centers, mainly on behalf of larger number of Black/White cows. In the year 2001 36 % cows were inseminated by Black/White bull semen, 56 % by Simmental, and only 8 % by the semen of other breeds (OC Report, 2002).

In Table 7 we can see the average number of cows per recorded herd in different regional centers. The smallest herds are, as presented, in the Eastern part of Slovenia, where milk production is abandoned on behalf of pig production, and in the Western part of the country (Primorska region), where due to unfavourable farming conditions, as well as aging

and unsuitable land ownership, the farms are greatly abandoned. A lot of people here are leaving the premises, and the rest of the population is getting old. In Table 6 different number of recorded cows per recording person can be seen: from 252 cows in Primorska region, to 432 cows in Gorenjska, depending mostly on the size of herds, and the distance between farms. On average, recording persons perform the control in 26 herds. In the regional center of Kranj they take records in 20 herds, since the herds here are so large that it is possible to do recording only on one farm per day. It is different in the region of Murska Sobota, where 43 herds are recorded on two, sometimes even on three farms per day. Very similar is the situation in the Nova Gorica regional center, where 30 herds are recorded each month.

For all seven regional centers, functioning in the frame of the Agricultural and Forestry Chamber of Slovenia, five laboratories are in charge of milk analysis. They are all equipped with milkoscans (of different capacity), and fosomatics to determine the somatic cell count. Five laboratories and all the others where milk analysis for the needs of Slovene dairies and milk payments are carried out, belong to the network of sample exchange. The laboratory of the Dairy Institute at Biotechnical Faculty, Zootechnical Department is regarded as the reference laboratory. It is in charge of sample exchange with other reference laboratories in Europe (France, Germany, Denmark) and adjusts its measurements according to the International organization INTERLAB. The other laboratories in Slovenia adjust their measurements with the reference laboratory in Rodica (Biotechnical Faculty).

Computer programs for production control, herdbook keeping, and selection are written in CLIPPER. Since the beginning of this year a new information program is in use for cattle production, written in ORACLE. All seven district departments are equipped with PCs (386, 486, Pentium) joined in local networks. Similarly, but with stronger computers are equipped also both central institutions (Agricultural Institute of Slovenia, and Zootechnical Department, Biotechnical Faculty), where data processing and breeding value calculation is carried out. Here too, the computers are joined to the local network. Regional centers, laboratories for milk analysis, and both central institutions communicate by means of internet and e-mail. From district departments, data is sent daily, weekly or monthly to the central database at the Agricultural Institute of Slovenia, where data are processed and the results printed out. Feedback information from the central database are regularly sent by e-mail back to the local base at regional centers and to the laboratories.

Computer development and data processing

Modern computer links offer new opportunities, so that data and recording results, registration and movement of animals, as well as the results of various tests will be collected only at the central database, while places of data input will be on different levels (breeders, recording persons, laboratories, regional centres, slaughtering houses, inspection offices, etc.).

Modern computer equipment, often present on the farms of advanced breeders, offers the opportunity of recording results to be received directly from the central database at the Agricultural Institute of Slovenia, by e-mail. On the internet the access to data on daily breeding value prediction for cows and sires is available. A team of experts at the Biotechnical Faculty, Zootechnical Department is responsible for breeding value predictions for milk yield and fertility traits. Lately, they are engaged in the development of a system, which will enable daily data collection of milk quantity per cow from milking parlour, equipped with lactocorders. These data will be a strong support in the introduction of AT, or B control. Based on these data it will be possible to observe the curve of milk flow for each cow separately, and constantly follow the oscillation in milk yield of separate cows. In those herds, where the animals are equipped with transporters and have automatic feeders, we shall be able to monitor the concentrate intake of separate dairy cow within the milk recording system. This means that by means of modern computer technique and the necessary information programmes it will be possible to inspect the concentrate intake and all the other manifestations in the herd (oestrus, health problems, diseases, temperature, climate, interval between morning and evening milkings, etc.). In return, breeders will get the processed results immediately after data processing and observations of daily happenings in the herd by e-mail, together with our recommendations and warnings, which will help breeders to improve farm management. Between the breeders and professional services the links for daily information transmission, and changes in the herd will have to be established.

Scope of recording services

Milk recording in Slovenia has a number of tasks in various fields. Milk recording results and prints help breeders to manage herds and farms to a great extent. It is very important that milk recording results are accurate and available to breeders as soon as possible (in two to three days after the recording). Breeders are helped to solve the problems in the herds by experts from selection, advisory and veterinary insemination services. Selection is managed by the help of selection service experts. Recording results and all the other information obtained by our service are very helpful to all expert services that are included in the production of quality milk, as well as the production of quality breeding animals.

Milk recording is of great importance also for the selection services. In Slovenia 200 000 cows and 20 000 heifers are inseminated every year. Last year, 90 % cows and heifers (198 314 animals in total) were inseminated, and 10 % of cows and heifers were mating (natural mating mainly in the herds of suckler cows). 74 000 cows, representing 55 % of all dairy cows is included in milk recording. About 600 cows are bull dams, which is less than 1 % of recorded cows. Prospective bull dams are selected and registered as mothers of future bulls on the basis of calculated breeding values and measured physical traits and exterior estimates. Bull dams are inseminated by semen of the best bulls of certain breed (domestic or imported).

Furthermore, milk recording is important from the national point of view. Data are often used also by other institutions and organizations such as the Ministry of Agriculture, Forestry and Food, Agricultural and Forestry Chamber of Slovenia, Veterinary Office, Breeders' Associations, Slovene dairies, meat processing industry, and Statistical Office of the Republic of Slovenia. Our milk recording results and breeding value calculations are also important for ICAR and INTERBULL. Our results are regularly sent to Paris and Uppsala for the international comparison.

In Slovenia milk recording service is performed as a public service based on concession, which is granted by the Ministry of Agriculture, Forestry and Food. For the completed tasks, the mentioned Ministry ensures budgetary funds for as much as 95 % of the total costs. It also carries out the zootechnical inspection and supervision of the performed production control. Cattle Breeding Service of Slovenia is in charge of the working program preparations and the whole organization of milk recording system. It consists of the central service (Agricultural Institute of Slovenia, and Biotechnical Faculty, Zootechnical Department), and seven regional centers (Murska Sobota, Ptuj, Celje, Kranj, Ljubljana, Novo mesto and Nova Gorica), founded by the Agricultural and Forestry Chamber of Slovenia.

At present, almost all milk recording costs (95 %) are covered by the government. Breeders finance only the costs for somatic cell count analysis of a separate dairy cow. In Slovenia 236 recording persons and 20 supervisors are employed, responsible for milk recording and selection, partly also for cattle identification and registration, for performance test, herdbook supervision, as well as twelve professionals working on data processing at the Agricultural Institute of Slovenia, and milk recording system development at the Zootechnical Department.

The average cost of milk recording per cow is 217 kg of milk a year, calculated on the base of the average purchase price of milk, which is at the moment 65 SIT. The costs are financed by the government. In Table 8 the costs for the basic milk recording, super control and data processing

Organization and financing of milk recording today and in the future

Table 8. Number of recorded cows and milk recording costs in SIT for the year 2002.

Regional centers	Number of recorded cows	Basic milk recording costs/cow	Costs of super control/cow	Data processing costs*	Total costs of recording/cow
Murska					
Sobota	10 300	12 472	1 123	950	14 545
Ptuj	14 400	12 363	1 113	950	14 426
Celje	12 578	12 472	1 123	950	14 545
Kranj	8 200	9 741	877	950	11 568
Ljubljana	15 200	11 406	1 027	950	13 383
Nova					
Gorica	6 305	13 907	1 253	950	16 110
Novo mesto	7 017	12 507	1 127	950	14 584
Total	74 000	12 055	1 086	950	14 091

**Data processing costs are the same throughout Slovenia and is carried out at the Agricultural Institute of Slovenia.*

for the year 2002 are demonstrated. Of the total milk recording costs, 85.6 % is meant for the basic recording (recording persons' salaries, traveling and material expenses, milk analysis fees). Further 7.7 % are the costs for super control and the official supervisors, which are responsible for the undisturbed field work in separate regional centers (work costs, traveling and material expenses, milk analysis fees for super control). Data processing costs for central database at the Agricultural Institute of Slovenia, represent 6.7 % of the total milk recording expenses, where work costs, maintenance of computer equipment and information system, and material expenses (prints, postage) are included.

Due to the increased interest of Slovene breeders to have other traits determined and measured, such as somatic cell count, contents of urea in milk, their interest for additional prints within milk recording services, they will have to pay part of the costs themselves. Governmental funds can not be expected to rise for this reason in the future. Therefore, a rationalization program is in preparation, as well as the reorganization of public service tasks in agriculture. Thus, financial resources will have to be rationally used for milk recording, herdbook keeping, for selection, and for improved efficiency at almost the same financial support. Serious consideration has already been started in connection with the introduction of AT and A4 method, both approved by ICAR, and the reduction of laboratories for determination of milk traits and milk quality analysis (in future, only one or two laboratories will perform the necessary work).

In future A4 method is expected to be used only in the bull dams herds (350 herds) and in herds with the outstandingly good milk yield. A4 reference method will therefore be used in about 500 herds with 15 000 dairy cows. This kind of recording would require 25 recording persons and two supervisors. In these herds only 5 % super controls will be needed. So, a minimum of 25 super controls would be performed annual; one per each supervisor.

AT method should then be applied in all the other herds with at least five dairy cows – also on large scale farming enterprises, which is 7 000 farms, supplying their milk to dairies and therefore in need of the milk recording results to observe milk quality and somatic cell count, as well as milk content of each dairy cow (milk fat and protein content, both the criterion for milk price determination). In such a way milk recording would be done for 60 000 cows. To accomplish this work, we would need 150 recording persons (each recording person would perform recording on 50 farms), and 14 supervisors. In herds where AT method will be used, super control will be carried out in 10 % of herds. This means that each year supervisors would perform 700 super controls. In spite of the substantial structure changes, we still have a number of small farms, having only 1 to 4 dairy cows and supplying their milk to dairies. There are still about 6 000 such breeders, having 20 000 cows in total. In the future the number of these farms is expected to reduce. Many of these breeders will stop dairy cow production. Yet at the moment they still get a certain minimal income from milk, and additional payment for the production of breeding cattle, therefore they wish to be included to milk recording system. They can observe milk content and milk quality, and the information on purchasing of breeding cattle). This is the reason why we considered the introduction of B4 method as most suitable for the smallholders, also from the financial point of view. To avoid the possible tailoring of the results, at least three yearly recordings according to A4 method should be necessary and done by the official supervisor. Three recordings would at the same time be three super controls. For this type of recording 60 recording persons and four supervisors would be required. Thus, 1 500 recordings (25 %) would be performed on these farms by the official recording person.

For the expanded capacity of the basic milk recording for the entire milk production (95 000 dairy cows) a total of 235 recording persons, of which 25 would be in charge of milk recording on farms where A4 reference method would be used (500 herds and 15 000 dairy cows), 150 recording persons for farms where AT method would be used (7 000 herds and 60 000 dairy cows), and 60 recording persons for smallholders where breeders would be recording on their own according to B4 method (6 000 breeders and 20 000 dairy cows). Here, breeders would take recording once a month, and the official recording person three recordings per year. Three official recordings would also be super control at the same time, performed for the sake of data reliability and verification of the results.

To perform super control in all the 13 500 recorded herds we should need 20 supervisors. They would be in charge of at least 1 225 super controls annually, using A4 reference method. No additional staff would be required for data processing and print outs in spite of work extension. New financial sources would be sought only for the continuous education of recording persons, supervisors, and for milk recording process development, which will have to follow ICAR recommendations and at the same time take the advantage of offered new opportunities by modern computing equipment and well developed information system.

Conclusions

1. Milk recording in Slovenia is at present performed according to A4 reference method.
2. Milk recording costs per recorded cow/year accounts to 14 091 SIT, which means 217 kg milk at the average purchase price of 65 SIT.
3. For the basic recording of dairy cows 236 recording persons are employed, and 20 supervisors, as well as 12 experts for data processing. On the average each recording person works on 26 farms with more or less 314 cows per month.
4. The highest expense represent salaries of recording persons, as well as transportation fees, often higher because of unfavourable distribution and remoteness of farms. Very high are also milk analysis, which are at the moment done in five laboratories, more so because the capacities and the staff in these laboratories are not sufficiently and entirely used.
5. To use the financial resources for milk recording process as rationally as possible (A4 reference method is relatively expensive) with the obligatory increase in the number of recorded cows, as well as more efficient super control system in the regional centers, we are forced to consider the introduction of cheaper, but still accurate recording methods, approved by ICAR.
6. At the Ministry of Agriculture, Forestry and Food an extensive analyses on the present work of professional services is in progress, with the aim to find additional possibilities of rationalization and better work efficiency of super control. Future work will run according to the proposal of the possible fulfillment of expert work in milk recording system in the following variants:
 - A4 method will be used in bull dams herds and in herds with outstandingly high milk yield (500 herds and 15 000 dairy cows).
 - AT method will be used in herds with at least five dairy cows, also on bigger farming enterprises, which supply milk to dairies (7 000 herds and 60 000 dairy cows).
 - B4 method will be used for smallholders with less than 5 dairy cows, who supply their milk to dairies, and who also produce breeding animals (unfavourable regions, elderly farmers). At least three milk recordings, at the same time super controls to check the quality of work and verify data accuracy (6 000 herds and 20 000 dairy cows) will be performed.

7. This way 90 % of dairy cows (95 000), supplying milk to dairies, will be recorded. The expansion will require 235 recording persons and 20 supervisor, as well as twelve experts and technical staff for data processing. This means that with the same financial quota (a possible rise will only cover the inflation), with the participation from breeders up to 10-30 %, and starting with cheaper and rational milk recording methods, we could include additional 21 000 dairy cows to milk recording process. The cost would in such a case be 160 kg milk per dairy cow, at the average price of 65 SIT per kg of milk.
8. Recording in smaller herds is necessary to keep cattle production alive in areas, where unfavourable conditions and geographical layout do not permit production of larger herds. Here, farmers can still produce breeding cattle and thus earn an additional income.
9. Super control in all the herds, regardless the method for the basic milk recording will be performed according to the reference A4 method. Supervisors will have to be specially trained experts, totally independent, yet directly responsible to the Ministry. Agricultural inspections will, in accordance with the new Animal Production Law, implement zootechnical inspection of the tasks more frequently.
10. The new Animal Production Law came into force on 12.2.2002. It brought the complete transfer of EU laws to the Slovene legal system, to legalize all the professional work covering milk recording and selection process.
11. Expanded milk recording work with the same number of recording persons and supervisors will to our expectation increase the quality of recording and selection work, increase the intensity of selection, improve the service to breeders with the provision of monthly milk recording results, to help breeders manage their farms, to improve the quality of market milk production. Additionally, breeders will get the chance to increase the income per each farm because of greater market opportunities for breeding cattle.

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