
Situation of milk recording in Poland

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Milk and beef production play a very important role in Polish agriculture. The whole cattle population is seven million heads and about half of them (3.5 million) are cows. These 3.5 million cows are kept in 1.3 million herds and 90% of these farms are private. An average private farm has 7.9 ha and less than three cows. The average Polish cow produces 3 325 kg milk (1997).

Farmers in Poland keep mostly dairy and dual purpose cattle. Beef cattle are kept in some beef herds and additionally, beef bull semen is used for commercial crossbreeding. The main race in Poland is black & white (90% of the whole cow population). In Poland in the past, this race was used for dual purposes. For some time it has been improved as a dairy cattle through crossbreeding with the Holstein. The second race is red & white (5% of population) which is used for dual purposes and dairy cattle. The rest of the races (Polish Red, Simmental and Jersey) make up less than 5% of the cow population and are kept rather regionally.

The number of cows dropped dramatically in Poland in the early 1990s (Table 1) due to liquidation and bankruptcy of the big State farms due to both social and financial reasons. Additionally, small private farms have also stopped cattle production due to small milk production profitability. During the last years, it could be seen that the cow population has been rather stable although a permanent small decrease is expected in the future. We expect that the increasing requirements for milk quality will be very difficult to fulfil for the small farms and therefore, these farms will stop milk production.

Presently, the Central Animal Breeding Office (CABO) through its branches (seventeen Regional Animal Breeding Offices with Milk Laboratories and nine Regional Insemination Stations) is responsible for milk and animal recording, herd book keeping, insemination, breeding data processing and breeding value estimation. It controls issues related to breeding dairy and beef cattle, pigs, poultry, fur animals and bees. CABO is the Governmental institution, which is 50% self-financed. According to the

new Breeding Law, CABO will change in the near future. Probably, regional insemination stations will be first restructured and then privatised and breeder associations will be responsible for herd book keeping.

CABO has represented Poland in ICAR and INTERBULL since 1994 when Poland joined these organisations.

Milk Recording (MR)

In the situation where herds are so small like in Poland, it is very difficult to run milk recording. However, even when the number of cows in the whole population decreases, the number of cows under milk recording increased in 1997 (Table 1). Unfortunately, the 364 000 cows under milk recording were only 10.6% of the whole cow population.

Table 1. Polish dairy cattle population.

Year	Cows Population		Cows under MR average performance				
	Total	under MR	Milk	Fat	Fat	Protein	Protein
	[million]	[thousands]	kg	kg	%	kg	%
1980	6.0	1058.5	3 279	129	3.92	-	-
1990	4.9	620.0	4 131	167	4.04	-	-
1995	3.6	342.0	4 287	173	4.03	140	3.26
1997	3.5	364.3	4 600	189	4.09	149	3.26

Also in 1998, the number of cows whose performance was evaluated increased to 383 000 by the end of June.

Cows were evaluated in 22 000 herds. In most of the herds (68%) had ten or less cows and in 25% of herds there were less than five cows. The average herd size under milk recording is seventeen cows but about 8% of herds have more than 150 cows.

Table 1 shows that during the last few years the average milk yield, as well as fat and protein yield, from cows under milk recording has increased constantly although milk production in different races has been on different levels (Table 2). Different milk yield could be observed in different races and also between cows of the same race. About one third of the black and white cows produce less than 4000 kg of milk per year.

Table 2. Performance of Polish dairy cattle under milk recording (1997).

Race	Milk kg	Fat kg	Fat %	Protein kg	Protein %
Black & white	4 610	189	4.11	149	3.24
Red & white	4 659	188	4.03	153	3.29
Polish Red	3 285	140	4.26	110	3.35
Simmental	3 658	145	3.95	123	3.36

Until the end of 1996, cows were evaluated using only the A4 methods. From 1997, we have started evaluation using methods A8 and AT4 because the costs are less than those of method A4. Additionally, farmers from big farms, who would like to receive results about cows performance every month, are interested in a method where technicians organise less work during a milking, so the AT4 method, where technicians come onto the farm for only one milking per month, fits very well. In 1997, we started evaluation using method A8 and in 1998, method AT4 was started as well. The method A8 used mostly in the herds under milk recording, has recently been started. The method AT4 is used mostly in herds larger than fifty cows. In June 1998, about 82%, 12% and 6% of cows were evaluated using methods A4, A8 and AT4 respectively.

Every milk sample is evaluated for fat and protein content. Presently, somatic cell counts (SCC) are evaluated only in four laboratories. Nevertheless, breeders from other regions could receive information about SCC as well if they request.

Our main reference milk laboratory (CLOM), which prepares standards for other laboratories from our laboratory network, is a member of CECALIAT. CECALIAT is an international organisation where milk testing laboratories could develop communication and collaboration between members for improved circulation of analytical information and which establishes an international accuracy system to improve accuracy worldwide. At least four times a year CLOM participates in an interlaboratory proficiency study and obtains good results. Last year CLOM received accreditation of the Comité Français d'Accreditation for reference milk testing methods.

Methods

Identification and registration

The system for identification and registration of breeding cattle has existed in Poland for more than twenty years. Every cow under milk recording receives a unique lifetime number, which is used for milk recording, herd books and insemination. Female calves born on the farm under milk recording, receive the twelve digit number within one or two months from birth. Similar unique lifetime numbers, but which contain only nine digits, are received by the breeding bulls, namely, bulls which are included in breeding programmes as offspring of mothers and fathers of bulls. The same kind of number is received by imported bulls or bulls whose semen is used for insemination in Poland.

From the beginning of 1999, every calf born on the farm under milk recording will receive a unique lifetime number within one or two months from birth. It will depend on the method used for herd evaluation (A4, AT4 or A8).

Also for twenty years, all herds where cows have been under milk recording, have received a unique number. Even when farmers decided to stop the cow evaluation, this herd number was still attached to the herd. All information about animal and herd numbers are kept in one central database.

Presently, animal numbers given by CABO are sometimes used by veterinarians. According to the new Veterinarian Law, veterinarians will be responsible for the national system of cattle identification and registration (I&R) in the future, but there are still no executive rules for this. We hope that the new I&R system will be useful for breeding conditions (for example the number should be unique for at least three cow generations) and we should also be able to introduce it as well. Otherwise, we will have to keep additional identification systems for cattle breeding.

Information system

CABO has its own information system for cattle breeding which covers all activities: milk and animal recording, herd books, insemination and breeding value. This system was started twenty years ago and is still being improved. CABO does not have its own computer centre but cooperates with the private company (ZETO Olsztyn) which runs the system. CABO together with this company tries to improve the system and solve the most important problems step by step.

In the information system pedigree data, data connected with milk recording, conformation traits' evaluation and insemination are collected. The latter ones could be used for fertility evaluation. The data connected with functional traits such as calving, reducing calf mortality, milking speed and temperament will be collected as from 1999. Data on the breeding value for milk traits are also included in the information system. More

time and especially more money are needed to include results of breeding value for conformation traits, which in the new version were evaluated for the first time this year.

Last year, according to great interest in the improvement of received information and in acceleration of the data feedback, CABO started consultations for the implementation of two projects. The first one, called "MALWA", was prepared for breeders who have five to twenty cows in the herd. The main goal of this project was to obtain information on test results, helpful for herd management, as fast as possible (5-7 days). This project included changes in the organisation of data flow for milk recording and insemination, starting a daily data processing, cooperation with organisations connected with agriculture (veterinary services, advisory centres, dairy plants and voivodship offices). The second project, called "OBORA", was prepared for breeders who have bigger herds where a computer is needed for good management. The main aim of this project was to prepare software and its implementation which would be helpful in optimal herd managing and optimal breeding at farm level.

The "MALWA" project was implemented in the Warsaw Region this year. For its implementation throughout the whole country, as well as for software preparation in the "OBORA" project, more time and money is needed than we could spend this year.

One of CABO's main goals is to receive the ICAR Special Stamp. We hope that during this year and next year, changes in our organisation will be completed and we will find solutions for some organisational and technical problems (for example milk balance legalisation), and during the next year, we will be able to apply for the Stamp.

Poland would also like to join the international bull evaluation made by INTERBULL. Probably this autumn, after changes in the method of genetic bull evaluation, the first results will be sent to Uppsala.

Future activities
