

Breeding in organic farming: different strategies, different demands.

W.J. Nauta, H. Saatkamp, T. Baars and D. Roep

Abstract – Due to regulations organic farming is subjected to a different regime than conventional farming. This results in different environments for animals. The question is whether one overall breeding goal is sufficient to cover all different demands of organic farmers. A survey among 132 Dutch organic dairy farmers revealed that 55% of the farmers are specialized in milk production and 45% is running a multi-functional farm. The specialized milk production farms were significantly more intensive in farming compared to the multifunctional farms. Farmers from both strategies were also asked to value different breeding aspects of animals. In general farmers valued different aspects more or less the same: they wanted a robust, long living cow, with good udder health and fertility. However, farmers wanted to achieve this goal in many different ways. From farmers specialized in milk production, 29% used pure bred Holstein cows while 51 % chose for cross breeding with more robust breeds. Also 57% of the multi-functional farms chose for cross breeding, but another 30% chose for native Dutch breeds. These differences in the use and crossing of different breeds questions the overall breeding goal. It is important to know why farmers opt for different breeds, pure or crossing. We developed some hypothesis on this, to stimulate further discussion and research ¹

INTRODUCTION

Due to regulations organic farming is subjected to a different regime than conventional farming. This results in a different environment for the animals (Nauta et al, 2006a). The often debated question then is, if organic farming needs a breed of her own, a breed adapted to the organic regime. Organic farming is however far from homogeneous. By their principles organic farming, such as low external input, is more dependent on the local agro-ecological system. Organic farming is also more multifunctional in nature: i.e. serving multiple goals and combining different activities at a farm (e.g. cheese making, nature development, human care). Research has revealed different strategies in organic farming (Padel, 2000; Verhoog et al., 2003). These different strategies also result in different circumstances and as one can argue, different functional needs with respect to their animals. So the question raised in this article, based on a survey among organic farmers, is whether one overall breeding goal is sufficient to cover all different demands of organic farmers, or if institutional breeding somehow

has to cope with differences in strategies and demands.

In the survey two opposing strategies most reflected their farm (income) strategy were introduced: (1) specialisation in producing milk (to be processed elsewhere) as dominant source of income (economy of scale is prevailing here), or combining multiple activities at farm level as different sources of income (where economy of scope is prevailing) (Ventura and Milone, 2004).

MATERIALS AND METHODS

In a short, exploring survey organic dairy farmers were asked about their main farming strategy, farm characteristics, breeding goal, prevalence for different production, conformation and functionality traits of animals and the breed or cross breed they wanted to go on with in the future.

For farming strategy they could choose between:

- (1) Specialisation in milk production as dominant income strategy ('Specialized Milk farms')
- (2) Combining multiple income generating activities as income strategy ('Multi-functional farms')

RESULTS

More than half (55 %) of the 132 responding farms were Milk farms. The other 45 percent of the farms was multi-functional. Clear differences were found between the characteristics of these to farms strategies (see Table 1). Specialized milk farms did have a significantly higher milk yield per cow and more kg milk per ha. The cows got significantly more kg concentrates per year and were mainly housed in free stalls with cubicles. Multifunctional farms did have lower productions per cow and housed the cows for 40% in deep litter stalls and still 10% did have a tie-stall.

Table 1: Characteristics of specialized milk and multifunctional farms

	Specialized Milk farming N=74	Multi-functional farming N=58
	Mean (sd.)	Mean (sd.)
% bio-dynamic	7	22
Total farm area (ha)	52 (22)	51 (29)
Quota (tons)	380 (154)	282 (164)
% nature grass	0.14 (0.18)	0.19 (0.23)
No. Milking cows	58 (21)	48 (25)
Milk per ha (kg)	7656 (2540)	5737 (2147)
LSU/ ha	1.6 (0.38)	1.6 (0.49)
% Holstein blood in herd	75 (28)	37 (31)
Replacement (%)	35 (10)	33 (11)
Concentrates/cow /yr (kg)	1232 (376)	973 (395)
Average prod./cow (kg)	6634 (1306)	5820 (959)
Housing:		
Free stall/cubicles(%)	76	50

Surprisingly, the breeding goal and preferred characteristics of the animals were very similar for all farms. Farmers wanted a weight of about 43 % for functional traits in the breeding goal, 32% for pro-

Nauta, W.J., Louis Bolk Institute, Department of Animal Husbandry, Hoofdstraat 24, NL-3972 LA Driebergen

Hollandseweg 1, NL-6706 KN, Wageningen.

Baars, T., University of Kassel, Department biodynamic agriculture, Nordbahnhofstrasse 1a, D-37213 Witzenhausen

Roep, D., Rural Sociology Group, Wageningen University, Hollandseweg 1, NL-6706 KN, Wageningen.

duction traits and 25 for conformation traits. For production traits, the main focus was on a long productive life, a good milk yield per lactation and high milk compound (protein and fat). The most important functional traits were fertility and udder health. For conformation the conformation of the udder and quality of legs were most important (results not shown).

Despite of a similar breeding goal, big differences were found between the breeds and cross breeds used between the strategies (see Fig. 1). Forty-six percent of the specialized milk farms used Holstein cows as a bases and one half of these farms wanted to go on with pure bred Holstein. The other half started to cross breed their Holstein cows with breeds like Browns Swiss, Montbéliarde and Maas-Rijn-IJssel cattle.

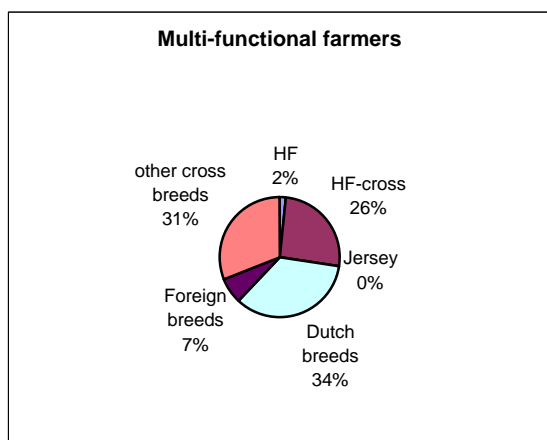
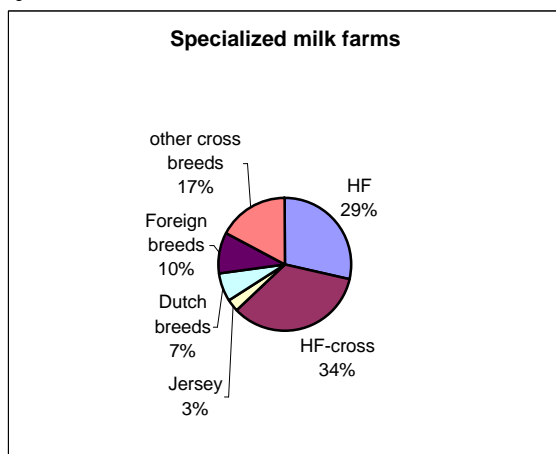


Figure 1: Distribution of breeds and crossbreeds at specialized milk and multifunctional farms

Only 2% of the multi-functional farms wanted Hosteins. Thirty-four percent of the multifunctional farms wanted native Dutch breeds like Maas-Rijn-IJssel, Groninger White face cattle and Dutch Friesians (FH). Also farmers started crossbreeding their Holstein and MRIJ cows (other) with stronger breeds comparable with their specialized milk farming farmers.

Overall there were 18 different Holstein (two- and three-way) cross breeds combinations chosen for the future by 42 farms. For cross breeding MRIJ there were 6 different combinations chosen at 10 farms.

DISCUSSION

The overall breeding goal for a strong and long living cow is probably a reaction on bad experiences with Holstein cows. In the period 1999-2000 many organic dairy farmers complained about the durability of Holstein cows (which they mainly had) under

organic conditions (Nauta et al., 2001). With the choice for new breeds and crossbreeds the farmers probably try to get stronger cows (due to heterosis) which need less care but give a good milk yield

It can be questioned why farmers choose for foreign or native breeds. Nowadays there are 7 foreign breeds available which are actively supplied by different companies in the Netherlands. Also breeds like the Groninger white face become more popular by the public. This surely has stimulated the choices for such breeds or crossbreeds. But there is no information available on the special suitability of these breeds for organic farming. Decisions are based on the fact that these breeds have stronger claws, better fertility etc. But research should be carried out on the overall suitability of these breeds and especially the cross breeds.

The choice for Dutch native breeds might be an indication that for this farmers breeding has a 'second dimension': the preference and saving of this breeds. This is more accepted in organic farming and organic farming might open the doors for such initiatives (Darnhofer, 2005). Native breeds might give a better recognition of organic production, especially for multifunctional farms, which do not need high milk production but have strong connections with consumers and society (Nauta et al., 2006b)

CONCLUSION

Farmers are active searching for the best type of cow for their farms. The difference in the use and crossing of different breeds questions the overall breeding goal. Other aspects of breeding become important in organic farming, like the breed it self.

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