De Tolakker
Organic dairy farm at the Faculty of Veterinary Medicine in Utrecht, The Netherlands

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Abstract

'De Tolakker' is the educational research farm of the Faculty of Veterinary Medicine from the Utrecht University in the Netherlands with separate stables for dairy cows, pigs and sheep. The dairy farm of the Tolakker is an organic farm and the concepts of organic farming are structurally integrated in its farm management. Within the European Union, organic farming is bound to strict regulations on for example roughage production, housing, grazing management, nutrition, animal reproduction and veterinary drug use. The integration of the organic programme with the educational function of the research offers students the opportunity to understand the differences between organic and conventional farms. Apart from this, the dairy farm of the Tolakker plays an important role in the education of veterinary students on farm animal (health) management by means of practicals, the "adoption cow concept" and rotational training. In this paper, special attention is finally paid to legislative rules concerning veterinary drug use on organic farms. Organic farming requires a restricted and responsible application of antibiotics on dairy farms, but transparency and efficiency in veterinary drug use are also of great concern for conventional dairy farms. Therefore, a project on the transparent and efficient use of veterinary drugs on dairy farms has been initiated by joint action of various organizations involved in the dairy sector in the Netherlands. The dairy farm of the Tolakker is also actively participating in this project.

Introduction

'De Tolakker' is the educational research farm of the Faculty of Veterinary Medicine from the Utrecht University in the Netherlands. The farm has separate stables for dairy cows, pigs and sheep, where veterinary students are educated on farm related topics. In this way, the students have the opportunity to learn about the diverse aspects involved in farm animal (health) management in a practical environment. Additionally, the farm offers various possibilities for students and staff to perform veterinary or zootechnical research. This paper will only focus on the organic dairy farm of the Tolakker. The aim of this paper is to provide insight in the consequences of Dutch legislation on organic farming for the university dairy farm and the role of the farm in the education of veterinary students. Additionally, special attention will be paid to a project in which both organic and conventional Dutch farms participate to improve the transparency and efficiency of veterinary drug use.

Dairy farm overview

The dairy farm of De Tolakker is an organic farm with approximately 70 dairy cows and an average milk production of 8674 kg (with 4.16% fat and 3.39% protein) per cow per year. The herd consists mainly of Holstein Friesian cows, although some crossbreeding is applied with Brown Swiss, Norwegian Red Cattle and Montbéliarde. The crossbred cows will be used for further crossbreeding with these same breeds. The dairy farm employers have chosen for crossbreeding in an attempt to improve the longevity of the cows due to the heterosis effect. The crossbreeding also fits within the general idea of organic farming that it is more important to optimize milk production rather than to maximize it. Additionally, students get the opportunity to "meet" different cow breeds and evaluate the effects of crossbreeding on cow performance and health. At the Tolakker, cows are milked three times a day by employers (morning and afternoon) and veterinary students (evening) in a 2 x 6 herring bone milking parlour. The lactating cows are housed in a free-stall with slatted rubber floors and cubicles with a thick layer of sawdust as bedding. The slatted floors are cleaned by an automatic manure scraper. The dry cows, heifers and

calves are housed in a free-stall on a thick layer of straw, which is freshly distributed daily by an automatic straw chopper.

Organic farming

Legislative rules

Environment, sustainability and animal welfare and health play central roles in the philosophy of organic farming. These concepts of organic farming are structurally integrated within the management of the dairy farm at the Tolakker. Examples of this are the re-use of rinse water from the milking machine, re-use of the heat released from the pre-cooler of the milk tank and the production of compost from cow manure. The indication “organic” is officially protected by the European Union by means of legislative rules for the production and turnover of organic farm products. The essence of this rules concern the methods of organic production and the labelling of the organic products. Organic farms are inspected at least once a year to ensure they abide by their legal requirements, so they can market their products as organic and earn the right to carry the organic farming logo. In the Netherlands, SKAL is the name of organisation in charge of these inspections. The legislative rules involved in organic farming also have profound effects on the management of the dairy university farm. The all-organic dairy program of the Tolakker was preceded by a transition phase from conventional to organic farming of approximately 12 months, during which the farm was already under supervision of the SKAL.

Roughage production

Only organic seeds will be used at the dairy farm for the cultivation of grass and forage crops. Additionally, no artificial manure and insecticides are applied at the organic dairy farm. Straw and manure from the stable are composted and distributed over the land. A clover seed mixture is sowed between the grasses to improve the nitrogen supply.

Housing

Important aspects of the housing of the dairy cows at an organic farm are sufficient daylight, ventilation and enough space per animal to allow natural behaviour, which is set at a minimum of 6 m^2 per dairy cow. At the organic farm at the Tolakker, there is at least one cubicle and one feeding place at the feeding rack available for each dairy cow. Each cow should have the availability of a clean lying place with enough natural litter to lie down in a comfortable way. In economic farming, it is prohibited to keep cows in tie stalls.

Grazing

At organic farms, cows should have the possibility to graze on pasture as frequent as possible, although the weather and soil conditions and the heath of the animals must be taken into account. The minimum obligatory number of grazing days had been set at 150 in the Netherlands. The maximum number of animals that organic farmers are allowed to keep is 2 per hectare for dairy cattle, 3.3 per hectare for female young stock of 1 -2 years and 5 per hectare for calves up to one year.

Nutrition

A minimum of 60% of the diet of the cows have to consist of roughage at organic farms. Only organic ingredients can be implemented within the diet. There are also requirements about the energy, dry matter and fibre content of the concentrated feeds. By products as for example corn cob mix, beet pulp, brewery grains and grass pellets are also counted as concentrated feeds. Calves have to be fed with milk or milk replacers up to a minimum age of 3 months. The milk fed can be whole fresh milk or organic milk replacer.

Reproduction

Dairy cows in oestrus will be bred using artificial insemination applied by the dairy farm employers of the Tolakker. According to the legislative rules for organic farms in the Netherlands, reproduction of dairy cows has to be achieved by “natural methods”. Artificial insemination is allowed as an exception of this rule, but other methods of reproduction as embryo

transplantation are prohibited. For safety reasons, no bulls are kept at the Tolakker; consequently, no natural breeding does not occur at the farm.

Education and training

The dairy farm at the Tolakker offers students the opportunity to understand the differences between the organic university research farm and the mostly conventional farms that the students will further visit during their study. Apart from this, all farms of the Tolakker actively participate in the study programme of Veterinary Medicine. In the first year of the study of veterinary medicine the students attend several practical on animal handling at the Tolakker. Also, all students once have to participate in the milking process at the dairy farm. In following study years, several practical on housing, climate management and animal adaptation take place at the experimental research farm. Furthermore, all pregnant cows at the dairy farm are "adopted" by small groups of three students. These students will monitor their cow throughout the dry period and early lactation (a.o. by rectal exploration of the reproductive tract) and attend and if necessary assist in the calving process. Additionally, examination and treatment of diseased cows and fresh cows in the first ten days after calving is done by rotational students under supervision of the dairy farm employers and in close contact with the veterinarian. Finally, all data from the dairy farm (e.g. test day milk data, data on diseases and treatments, reproductive data) are utilized for educational purposes at various stages of the study.

Veterinary drug use

Application on organic farms

Preventive use of regular veterinary drugs and antibiotics are prohibited at organic farms, as well as the use of growth-promoters, milk production stimulating agents and reproductive hormones. As an exception, hormonal therapy is allowed for individual cows when there is a clear veterinary indication for such a treatment. The legislative rules for organic farming state that withdrawal periods for meat and milk of regular veterinary drugs have to be twice as long as on conventional dairy farms. Also, each individual animal

on the farm is only allowed to be treated with three veterinary treatments per year, including intramammary antibiotic treatment at drying-off but excluding vaccinations, anti-parasitic treatment and obligatory treatments. As a consequence the maximum number of allowed treatments, cows that do not recover well from a disorder or cows with frequent health problems tend to be culled earlier on a organic farm than on a conventional farm. For example, a cow with chronic mastitis problems that still has a high somatic cell count after two antibiotic treatments will not be treated any further. Additionally, not all cows will be dried off with intramammary injectors with antibiotics; this decision will be based upon the milk production, somatic cell count and disease history of that individual cow. Finally, the uses of all veterinary drugs have to be accurately registered according to the legislative rules. However, a precise and adequate documentation of all occurring diseases and treatments is not only important for the EKO-label; it is also of particular importance for support of the educational role of the dairy farm.

Project "Transparent and efficient use of veterinary drugs"

To support the tracking and tracing of veterinary drug use, several organizations involved in the dairy sector in the Netherlands cooperated to initiate a project with the duration of two years on the transparency and efficiency of veterinary drugs. Six veterinary practices joined this project, each with a selected "study group" of approximately 10 Dutch dairy farmers. The dairy farm of the Tolakker also actively participates in this project. Tracking and tracing of veterinary drug use is not the only objective set for this project. Other objectives are to improve the registration and utilization of data on animal health and veterinary treatments and to prevent or restrict antibiotic resistance. On the other hand, this project is also meant to eventually simplify drug registration on the farm and to make dairy farmers more aware of responsible drug use. When all veterinary treatments on the farm are efficiently registered, the resulting information can be utilized to optimize health management and to stimulate a careful use of veterinary drugs. Also, the application of veterinary treatments on the farm will be more transparent for external advisors or organizations, which will aid in the quality control of meat and milk. Dairy farmers that participate in the project will use treatment

protocols based on the farm specific experiences and keep an extensive but uniform register of all diseases and veterinary treatments on their farm. This uniformity is important to make all participating farms comparable with each other. The following items have to be registered for each treated animal:

- Disease/disorder, for which the animal is treated
- Identification & Registration number of the animal
- Registration number of the veterinary drug
- Batch number of the veterinary drug
- Withdrawal period
- Duration of treatment
- Dose of veterinary drug

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The non-reviewed case study titled: De Tolakker, Organic dairy farm at the Faculty of Veterinary Medicine in Utrecht, The Netherlands adds 2068 words.

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Biography of the author

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