

Indices of Animal Health on Selected Irish Organic Dairy Farms

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Introduction

Organic farming is a small but rapidly expanding sector of the agri-food industry, currently accounting for 2 to 3% of agricultural production and food market in the EU. Organic livestock management differs from conventional farming in various aspects including nutritional management, housing and bedding, and disease management. The effects of these differences have not previously been investigated in Irish organic dairy systems. Previously published literature pertaining to other countries suggested little overall change in animal disease incidence following conversion to organic dairy production, but potential problems in the area of dairy cow mastitis (Weller & Bowling, 2000).

Materials and Methods

A prospective animal health monitoring programme was established on the Teagasc (Johnstown Castle) organic dairy farm for two years and on five commercial organic dairy farms throughout Ireland, for one year. All animal health events were recorded on the study farms throughout the study period. Data collected included individual disease incidents, group interventions, and reproductive events. Data were entered into spreadsheet for manipulation and analysis.

The mean organic herd size was 43 cows, with a mean yield of 4300 litres per cow per year. In all, 288 calvings, and 250 cow-years on organic herds were included in the study. The Incidence Rate (IR) of diseases which tend to occur once per lactation, such as hypocalcaemia, were expressed as the number of reported cases per recorded calving during the study period. The IR of diseases with the potential for recurrence within one inter-calving interval, such as mastitis, were expressed as the number of reported cases per mean number of at-risk cows during the period. Significance of the difference in IR of clinical mastitis in cows from herds with straw-bedded housing compared to cows from herds with cubicle-based housing was tested using the Chi-square statistic.

Results and Discussion

There was a high reported incidence of clinical mastitis in the study cows (Table 1). The potential for persistence of a high prevalence of subclinical infections due to the absence of routine dry cow therapy, might provide some explanation for this finding. Another consideration is the preference in organic dairying for straw-bedded housing, previously identified as a risk factor for mastitis in dairy cows (Peeler et al., 2000). In the current study, organic cows in herds with a loose-straw-based winter housing system had a significantly higher incidence of mastitis than

those with cubicle-based winter housing (73.5 and 26.7 cases per 100 cows per year respectively) ($P < 0.001$).

Table 1. Incidence Rate of selected animal health problems in organic cows during the study period.

Condition	Incidence % per year
Mastitis	50.4
Lameness	9.6
Ketosis	0.0
Milk Fever	0.3
Grass Tetany	0.3

While nutritional intake was not directly studied, the low reported incidence of metabolic diseases such as, ketosis, milk fever, and hypomagnesaemic grass tetany, (Table 1) and the high reproductive efficiency of organic study cows (Table 2) would not support any evidence of nutritional deficits in dairy cows yielding moderate levels of milk, managed according to organic standards. This finding is in agreement with previously published organic studies (Reksen et al., 1999)

Table 2. Selected indices of fertility in organic cows during the study period

Index	Value
Days from calving to 1 st service	82.2
% of 1 st services producing a calf	61.6
Days from calving to conception	89.1

Low incidences of calfhoo diseases such as diarrhoea and respiratory disease complex, were also reported. Non-chemotherapeutic prevention of parasitoses in first season grazing stock was only possible with strict adherence to restricted pasture residency. Non-conventional therapy was used in 60% of all animal disease events. Homeopathy was the most frequently used non-conventional therapeutic modality.

Conclusion

This study establishes base-line data on animal health in Irish organic dairy systems. In agreement with previously published literature in other countries, mastitis is the most frequently encountered animal health problem in organic farming

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