THE RISKS OF DISEASE PERCEPTION ON ORGANIC AND SMALL CONVENTIONAL DAIRY FARMS

The rate of disease as reported by dairy farmers in a recent study[1] may be influenced not only by various management factors, such as housing and nutrition, but also by the farmer's *perception* of disease. The study evaluated farmers' definitions and detection methods for selected diseases on organic and similarly-sized conventional farms across the U.S. Overall, results showed perception to be associated with the rate of farmer identified and recorded cases of disease. For example, increased rates of disease were linked to farmers who had a more sensitive definition of that particular disease or a more proactive routine for detection.

Specifically, perception of disease was positively associated with the rate of clinical mastitis and ketosis. Farmers who listed abnormalities in the milk (or udder) as one of the three primary symptoms used to screen potentially ill cows indicated they perceived mastitis as an important health concern on their farm. Farmers who routinely experience many cases of mastitis may perceive mastitis as problematic[2], or those who perceive mastitis as important may identify more mastitis cases[3]. Similarly, farmers who had a more sensitive definition of ketosis recorded increased rates of ketosis. Including decreased milk production as part of the definition was also associated with a four-fold increase in rate of ketosis in conventional herds and a decrease in organic herds. However, this interaction may be due to the difficulty of identifying decreased milk production in herds where cows have lower baseline milk yields.

PRIMARY SYMPTOMS USED BY FARMERS TO SCREEN FOR POTENTIALLY SICK COWS (% OF FARMERS)

PRIMARY SYMPTOMS	OVERALL	ORGANIC	CONVENTIONAL GRAZERS	CONVENTIONAL NON-GRAZERS	P VALUE
Abnormal manure	14	13	13	16	0.871
Abnormal milk or swollen udder	13	14	3	17	0.113
Cold ears	9	9	11	6	0.623
Cow is lame or moves slowly	33	33	39	27	0.415
Decreased feed intake	73	70	86	72	0.148
Decreased milk yield	38	32	47	48	0.031
Depressed attitude or behavior	63	65	69	56	0.351
Other method*	22	25	8	22	0.088
Suspect increased body temperature	20	19	14	27	0.273

*Other methods included uterine discharge, poor hair coat, loss of body condition, difficulty breathing, etc.

The farmer's understanding and identification of diseases also influenced rate of disease. Farmers who did not perceive ketosis or pneumonia to occur on their farm or those who could not define ketosis or pneumonia accordingly were 20 times more likely to record zero cases of each disease during the data collection period. A farmer may perceive a disease to not occur on the farm because the disease is truly not present or because he or she lacks an understanding of the disease necessary for identification. Routine examination of postpartum cows for mastitis and ketosis was associated with increased rates of clinical mastitis and ketosis, respectively. As the main goal of routine examination of postpartum cows is early detection and treatment of disease[4], it may be intuitive that these examinations would also result in increased identification of mastitis and ketosis.

It is difficult to determine how the definition and perception of disease by farmers influence the incidence and detection of disease on the farm. Organic and conventional farmers have different options available for treating most diseases, which may also influence disease perception. It is possible that the availability of effective treatments and previous experience with alternative treatments influence a farmer's perception about disease control. The use of farmer identified and recorded diseases in the study also reflected the reality that few farmers utilize veterinarians for primary diagnoses of common diseases of dairy cows. Of farmers that reported the selected diseases, no farmers utilized veterinarians to diagnose clinical mastitis, and only 2%, 10% and 11% of farmers utilized veterinarians to diagnose calf pneumonia, pneumonia in adult cows and ketosis, respectively.

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