Table 1. Parameters monitored by the centrally based dairy performance benchmark program.

Parameter	1/05	12/04	11/03	Qtr. Avg.	Peer Avg.	Herd Goal	Attn. Flag
Latest Milk	75.0	75.5	75.3	75.3	69.8	75.0	
Milk at 28 DIM*	102.1	98.3	88.8	96.4	88.4	95.0	
% RPs**	11.1	16.6	6.5	11.4	5.7	4.0	<<<!
% DAs - Fresh Cows***	1.9	1.2	0.6	1.2	2.4	2.5	
% New Mast	9.4	6.8	3.1	6.4	3.9	5.0	<<<!
% Culled DIM<31	40.0	16.7	25.0	27.2	21.7	33.0	<
SCC for DIM<30****	1970	126	319	805	504	150	<<<!
% of Elig. Bred in period	91.0	89.0	84.0	88.0	87.0	90.0	
Pregnancy Rate	23	22	21	22	17	20	

*Days in milk
**Retained placenta
***Displaced abomasum
****Somatic cell count

Serological Evaluation of Five Unvaccinated Heifers as a Method for Detecting Herds Infected with Bovine Viral Diarrhea Virus

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Introduction

Cattle persistently infected (PI) with bovine viral diarrhea virus (BVDV) are the major reservoir of infection within and between herds. The key to eradicating BVDV is the identification and removal of all PI cattle. This requires testing all cattle within a herd, which is costly and labor-intensive for the producer. It would be desirable to accurately identify herds infected with the virus prior to committing the resources necessary for whole-herd screening. The objective of this study was to determine if the evaluation of BVDV antibody titers in five randomly selected unvaccinated heifers (sentinel heifers) was an accurate way to predict if a herd was infected with the virus.

Materials and Methods

Blood samples were collected from all cattle in 14 Michigan dairy herds. To identify cattle infected with BVDV, virus isolation was performed on all samples using the immunoperoxidase monolayer assay (IPMA). Serum virus neutralizing antibody titers to both type I and type II BVDV were determined on five randomly selected unvaccinated heifers, 6-12 months of age, in each herd. A positive serological evaluation was defined as a herd with at least three of five heifers with BVDV titers ≥1:128 (SN positive) to either type I or type II BVDV. Conversely, a negative serological evaluation was defined as a herd with at least three of five heifers with BVDV titers ≤1:64 (SN negative). The genotype of

all isolated viruses was determined by reverse transcriptase polymarase chain reaction (PCR).

Results and Discussion

Four herds were classified as infected with BVDV based on serological evaluation of five sentinel heifers. Virus was isolated from at least one animal in each of these herds. BVDV was isolated from two herds that were classified as not infected with BVDV by serological evaluation of five sentinel heifers. These data are summarized in the table below. Based on the data, a sensitivity of 66% and a specificity of 100% was obtained when using BVDV titers in five sentinel heifers for predicting the presence of BVDV in a herd. In the BVDV-positive herds, the genotype of the virus isolated corresponded to the type of antibody titers that were highest in the sentinel heifers from that same herd.

The two herds in which BVDV was isolated in spite of a negative serological evaluation were unique cases. In one herd, a single PI was identified that was only 3 months of age and had not had contact with the sentinel group. In the other herd, an age cohort of PI calves (who did not have BVDV titers) was identified, and three of those were randomly selected for serological analysis. To avoid this problem, IPMA can be run in parallel with the serum neutralization test in the sentinel heifers to identify PI cattle in this group.

Table 1. Results of serum neutralizing antibody titers on random heifers vs whole-herd virus isolation by IPMA in 14 Michigan dairy herds.

	Herd IPMA	
	Positive (N=6)	Negative (N=8)
SN positive	4	0
SN negative	2	8

Conclusion

Serological analysis of sentinel heifers 6-12 months of age is a quick, accurate and inexpensive method for identifying herds infected with BVDV prior to whole herd-screening. The sensitivity of this method can be further improved by running IPMA in parallel with virus neutralization to avoid possible false negatives from the inclusion of PI calves in the sentinel group. Moreover, the genotype of the virus infecting the herd can also be determined using this method and may be valuable in developing vaccination protocols.

Jejunal Hemorrhage Syndrome of Dairy Cattle

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Abstract

In recent years veterinary practitioners have begun to report a peracute, segmental hemorrhagic enteritis in mature dairy cattle with increased frequency. Frequently the producer will see no prodromal signs and witness a sudden death, or find an individual that is down and in systemic collapse. Clinical signs include sternal recumbency, sweats, enophthalmia and signs of shock. Ballotment of the standing cow in the lower right abdomen can elicit a pronounced fluid slosh due to the backup of ingesta and fluid behind the occlusive lesion. Signs of abdominal pain include bruxism, vocalization, treading and kicking at the abdomen.

Based on practitioner and producer reports from Northeastern Iowa, Southeastern Minnesota and Southwestern Wisconsin, as well as reports from across the nation during 1999, clinicians at Iowa State University have begun to suspect that Jejunal Hemorrhage Syndrome (JHS) is a potential new emerging disease syn-