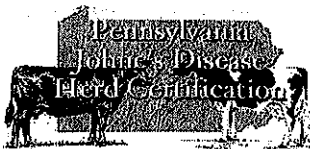


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## JOHNE'S POOLED FECAL TESTING AVAILABLE AT PADLS-HARRISBURG

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Starting November 15th 2008, Pennsylvania Veterinary Laboratory has officially begun offering **pooled fecal testing** for Johne's Disease diagnosis in cattle. The test has been in use for some time in the PA research herds and is now being made available to reduce testing costs, and for combining organism based testing with other testing strategies to provide cost effective choices.

For pooled testing, 5 fecal samples are combined at the laboratory. The resulting sample is then tested with an organism detection test. If a pool is identified as positive, individual samples in that pool are then cultured to identify which of the animal samples are positive. The laboratory has chosen to use 5 samples for creating a pool due to nation-wide consensus on that pool size, and to minimize loss of sensitivity due to the sample dilution effect.

### **Recommendations for Use of Pooled Fecal Testing**

- ▶ For screening herds of unknown status in the program. Other less costly alternative for these herds is to use environmental culture or ELISA testing.
- ▶ For screening negative herds or low prevalence herds (or with no clinical disease)

Pooled fecal testing has been shown to be a useful method for identifying the vast majority of animals in a herd that are shedding *Mycobacterium avium* ssp *paratuberculosis* (MAP). While it is very good at finding the moderate and high shedders (Sensitivity: 95-100%), it does miss some low shedders - our studies and others have shown that the estimated sensitivity of pooled testing for finding low shedders is approximately 40-60%. However, pooled fecal testing can substantially reduce the laboratory testing costs when used in low prevalence herds. ***Therefore this methodology is best used in herds that have demonstrated a low prevalence of infection, or have previously been "test-negative."*** When it is used in high prevalence herds, the costs escalate quickly since a higher proportion of pools end up testing positive and a large number of individual animal samples require culturing.

### **How do I submit samples for pooling?**

Individual animal fecal samples are collected and submitted exactly the same as for individual animal testing, using the same forms (AAI-11) and procedures.

However, the paperwork should be clearly marked requesting "**pooled fecal testing**" and official program participation should also be clearly indicated in order to receive the discount.

Pools are prepared at the lab by carefully weighing out the individual samples for testing. In most situations, resubmission of samples will not be necessary for individual animal testing when a pool is found to be positive. To save costs, clients can follow strategic sampling, by collecting

samples from animals that are more likely to be positive first (usually, the older animals) followed by other animals (including young heifers) or vice a versa. Lab follows submission order sequence to create pools e.g 1-5, 6-10 etc. If less number of pools is opened, the client will incur a smaller testing cost.

### What will it cost?

The following fees will apply for program and non-program testing.

Johne's test	Program herd	Non-program herd
Pooled fecal culture/PCR	\$20.00	\$20.00
Fecal culture of positive pool samples	\$4.00 (ie. \$20.00 per pool)	\$17.00 (ie. \$85.00 per pool)
Fecal culture (individual animal )	\$12.00	\$17.00
Serum ELISA	\$2.00	\$4.50 (\$3.25 if >30)
PCR	\$20.00	\$20.00
Environmental culture	\$5.00	\$17.00

### Do, I need to schedule testing?

It is important to schedule testing by calling the lab at 717-787-8808 whenever more than 25 individual animal samples are to be tested!

### When will I get my results?

The pooled testing involves setting up tests twice on the same samples (PCR and then culture for PCR positive pool samples). In most cases, unless we inform you otherwise, the results for negative pools will be available within 8-10 days. Results for positive pools and individual animal results within a positive pool will be notified ordinarily with a turn-around time of 8-9 wks.

### Why does the pool result show a positive result but individual sample analysis for the positive pool shows all samples to be negative for Johne's?

This sometimes happens because the laboratory utilizes the more sensitive PCR test upfront for screening the pools and uses the gold standard, culture assay, for confirming the positives. The PCR test used in the screening shows presence of MAP DNA but does not show if the organism is living or dead. The distribution of organisms within a fecal sample can also result in this discrepancy. Taking these factors into account, to resolve the discrepancies, we may sometimes recommend resubmission of samples if we suspect loss of living organisms during transit/ storage. From a herd management perspective, it always is useful to monitor animals that show positive pool results but are negative on individual culture until they are found to be negative by repeat testing.

### I have questions about how to use and interpret fecal pooling in my client's herd. Who can I call/email??

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