

MANAGEMENT RECOMMENDATIONS AND CONSIDERATIONS: VOLUNTARY OPP ERADICATION TRIAL, MINNESOTA (October 2013 – November 2017)

Below reflects what we've learned to date. Any updates will be posted at: www.bah.state.mn.us (and) www.OPPsociety.org

ABBREVIATED GLOSSARY (trial specific):

- PARENT FLOCK: Ewes and rams 12 months and older; may be either OPP positive or negative. Ewes are managed as a single unit, regardless of pos/neg status, and allowed to birth and raise all lambs to weaning.
- TEST-NEGATIVE REPLACEMENTS: Offspring of the Parent Flock that have been selected for replacements and found to be OPP negative post-weaning. To confirm continuing test-negative status, this group will be segregated and tested every 2 to 3 months until achieving two consecutive 100% negative tests.
- ERADICATION STRATEGY: Simply stated, Test-Negative Replacements will be *permanently segregated* from the Parent Flock after weaning and tested at 2 to 3 month intervals until achieving two consecutive 100% negative tests, thereby creating the base for a 100% test-negative flock.

Adoption of as many of the following management protocols as possible will increase the likelihood of success.

BLOOD TESTING FOR OPP ANTIBODIES:

Once OPP status of the Parent Flock has been determined through the initial test run, future tests will only be needed for potential replacement ewe and ram lambs, and young replacements found to be negative in previous years.

- The U of M Veterinary Diagnostic Laboratory imported the 'Elitest' ELISA at our request in 2013 and we have used this test throughout the trial. While not USDA licensed, it should be noted that this is the only ELISA for OPP that has been validated to World Organization for Animal Health (OIE) standards. Elitest is available to any U.S. flock.
- It's not necessary to test every animal to determine OPP status of the Parent Flock. The following table shows the number of animals 12 months of age and older that need to be randomly sampled and tested in order to be 95% confident of detecting at least one positive animal if 5% or more of the flock is infected.

		FLOCK SIZE		
<30 (TEST ALL)	80 (42)		180 (50)	450 (55)
30 (26)	90 (43)	(SAMPLE SIZE)	200 (51)	500 (56)
40 (31)	100 (43)		250 (53)	600 (56)
50 (35)	120 (47)		300 (54)	700-800 (57)
60 (38)	140 (48)		350 (54)	1000 (57)
70 (40)	160 (49)		400 (55)	2000 (58)

NOTE: Since sampling a truly random subset can present difficulties, producers should, to the degree possible, select for testing ewes that have been in the flock for at least 2 years. Doing so may increase the odds of detecting OPP infection at the flock level.

- It has been observed that if lambs are weaned at 8 months of age from OPP infected ewes, some lambs may still have colostral/milk anti-OPP antibodies remaining in their serum at 12 months of age. Therefore, earlier weaning at 6 to 8 weeks of age is advised while flock is undergoing eradication, and waiting to test until 2 to 3 months post-weaning is recommended.
- Potential replacements of high value, if test-positive at weaning, can be held in isolation and retested in 4 to 6 weeks to reduce the possibility of a false positive test due to passive maternal antibodies. Animals with discrepant results, if not culled, should always remain isolated until at least two consecutive negative tests have been achieved.
- Following *removal date* of any positives (not bleed date), it's best to retest the management group in 2 to 3 months (minimum 7 weeks to avoid missing early infections), preferably before rams go in for breeding or at a time of year when animals are not stressed. Continue testing at 2- to 3-month intervals and promptly removing positives until receiving at least two consecutive 100% negative reports.
- While OPP *transmission* via semen has not been documented, owners, managers and veterinarians utilizing artificial insemination should be aware that the *OPP virus has been detected in semen*. It is recommended that rams being collected for A.I. be tested well in advance of the collection date, and again prior to use of the semen.

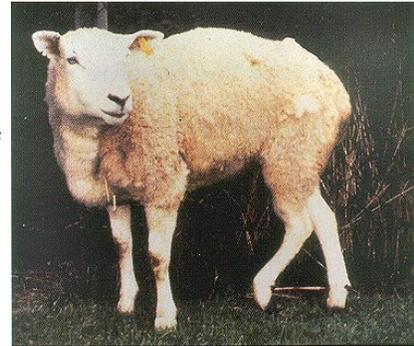
- Strict attention to permanent and easily read identification is crucial to the success of eradication efforts. In flocks running more than a few dozen ewes, serious consideration should be given to electronic ID.



Which ewe is infected with the OPP virus?

The only way to know is to test them!

Infected animals not showing symptoms can still infect others.



NO COMMINGLING OF TEST-POSITIVE AND TEST-NEGATIVE ANIMALS . . . EVER:

- Positive and negative groups may rotate through buildings and pastures. However, it is recommended that test-negative groups always be handled first (chores, etc.) before dealing with any test-positives.
- If young test-negative replacements are confined to the barn during lambing, it's best to lamb them at a time different from the Parent Flock, i.e. either before or after the older ewes.
- Second best would be to designate an upwind section of the barn for young test-negatives, with at least 10' separation between them and the parent flock. As an alternative, consider solid barriers.

NO SHARED FENCE LINES, FEEDERS, WATERERS, ETC:

- Electronet and/or an offset wire (either can be charged by a small portable battery unit) will discourage nose-to-nose contact between test-positive and test-negative animals through fences or dry lot panels.
- MOST IMPORTANT to avoid shared feeders since these result in close nose-to-nose contact.
- There is a significant correlation between needle re-use and OPP seroprevalence as flock size increases. Therefore, to decrease the risk of OPP and other infectious disease transmission when giving injections, a fresh needle should always be used for each animal.
- Due to the unstable nature of the OPP virus in the environment, equipment such as syringes, ear taggers, tattoo pliers and water buckets may be used for both infected and test-negative groups if cleaned and disinfected first.
- Shared waterers are a "depends on" category. The OPP virus is carried in macrophages, e.g. nasal discharge, which typically sinks to the bottom of the tank. Thus, *while still risky*, shared waterers may be OK if you can arrange to avoid nose-to-nose contact at the water source, such as groups drinking out of opposite ends of an oblong tank.

SALVAGING OF TEST-NEGATIVE ANIMALS FROM THE PARENT FLOCK:

- Those with adequate facilities for managing multiple groups over an extended period may wish to reintroduce test-negatives from the Parent Flock at some point in time. This must be done with caution, and only after these older animals have achieved two (preferably three) consecutive negative tests after removal of all positives.

GENETIC SELECTION:

- While some may opt to employ the new DNA testing in their OPP *control* efforts, at this time the OPP Society does not advocate genetic selection as a route to eradication. In summary, *all* breeds are susceptible to infection with the OPP virus, so *all* shepherds need to be aware of this risk and the related need for biosecurity.