

**MANAGEMENT RECOMMENDATIONS AND CONSIDERATIONS:
VOLUNTARY OPP ERADICATION TRIAL, MINNESOTA (updated January 2017)**

Please note that this document reflects what we have learned to date but is a work in progress and therefore subject to revision. The trial began in October 2013 and is funded through October 2017, after which we will prepare a final report.

ABBREVIATED GLOSSARY (trial specific):

- **PARENT FLOCK:** Ewes and rams 12 months and older; may be either OPPV 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 OPPV negative post-weaning, but prior to 12 months of age. This group will be segregated, and tested every 4 to 6 months to confirm continuing test-negative status.
- **ERADICATION STRATEGY:** Simply stated, Test-Negative Replacements will be *permanently segregated* from the Parent Flock after weaning and tested every 4 to 6 months to confirm continuing test-negative status, thereby creating the base for a 100% test-negative flock.

BLOOD TESTING FOR OPP ANTIBODIES:

Once OPPV 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 of the trial.

- 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 standards of the World Organization for Animal Health (OIE). Elitest is now available to any U.S. flock and the U of M lab continues to waive out-of-state surcharges for all OPP testing.
- It’s not necessary to test every animal to determine OPPV status of the Parent Flock. The following table shows the number of animals 12 months of age and older that needs 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.

<30 (TEST ALL)	80 (42)		180 (50)	450 (55)
30 (26)	90 (43)		200 (51)	500 (56)
40 (31)	100 (43)	FLOCK SIZE	250 (53)	600 (56)
50 (35)	120 (47)	(SAMPLE SIZE)	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 OPPV infection at the flock level.

- It has been observed that if lambs are weaned at 8 months of age from OPPV infected ewes, some lambs will still have colostral/milk anti-OPPV antibodies remaining in their serum at 12 months of age. Therefore, earlier weaning at 6-8 weeks of age is advised while flock is undergoing eradication, and waiting to test until 3-4 months post weaning is recommended.
- Potential replacements of high value, if test-positive at less than 9 months of age, can be held in isolation and retested in 6-8 weeks to eliminate the possibility of 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 with a minimum 4-6 week interval.
- If an animal older than 9-10 months of age tests positive and later tests negative, it is likely that human error at the producer or veterinarian level is responsible, rather than a seroconverted animal suddenly becoming test-negative. In such a case, it may be wise to retest the animals whose blood was collected just prior to, and after, that of the newly test-negative animal.

- While OPPV *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.

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

NO COMMINGLING OF TEST-POSITIVES WITH TEST-NEGATIVE REPLACEMENTS:

A far more important issue with housed animals than with those kept on pasture or in outside lots without barn access.

- 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 one 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 OPPV and other infectious disease transmission when giving injections, a fresh needle should always be used for each animal.
- Due to the unstable nature of OPPV 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 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.

INTRODUCING NEW PURCHASES AND / OR ANIMALS RETURNING FROM EXHIBITION:

- Ideally, all animals coming into the flock, whether newly purchased or returning from a show, will be isolated until at least two consecutive negative tests have been achieved with a minimum 4-6 week interval. Do not share equipment at shows, always transport your own animals, and be alert to the risk of contact transmission. Purchase only from flocks of equal or greater status whenever possible, or test pre-purchase if flock status is unknown.

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 Group 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.