EHDV/BTV
Diagnostic and Vaccination Protocols

Sample Submission
EHDV and EHDV/BTV vaccines are made most often with virus strains isolated from deer spleen. The diagnostic laboratory at TVMDL (College Station, TX) has also had success at recovering the viruses from blood (unclotted), allowing the sampling of sick deer before death, eliminating the problem with post-mortem autolysis of tissue and death of the fragile virus.

In sampling dead deer, it is critically important to do whatever can be done to necropsy the deer as soon as possible after death and submit a fist-sized sample of spleen with plenty of ice in an insulated diagnostic shipper box for next-day delivery to the laboratory.

Regarding the time frame for necropsy after death, it is primarily a factor of temperature. In the heat of the summer, the necropsy should be done within 6 hours at the most and less if the deer is in the direct sun. The spleen must be chilled immediately. If there is any delay in submitting the sample, freezing is recommended. Successful isolation of EHDV or BTV from the submitted sample can take 2-4 weeks.

All sample submissions should be accompanied by a completed diagnostic request form. This form is available at www.newportlabs.com or at www.tvmdl.tamu.edu.

Sample submissions can be sent to:
Texas Veterinary Medical Diagnostic Laboratory
College Station Laboratory
P.O. Box Drawer 3040
College Station, TX 77841-3040
888-646-5623

or

Newport Laboratories
1524 Prairie Drive
Worthington, MN 56187

800-220-2522

Vaccine Production
Autogenous EHDV and EHDV/BTV virus vaccines are made using a cell culture system. Unlike most bacterial pathogens, viruses are intracellular and require cells for survival whether in the infected animal or in the laboratory.

After isolation of the virus and confirmation of identity, the virus is transferred to Newport’s USDA-licensed laboratory for vaccine production.

There it is used to infect a cell culture system where the cells are coated onto the walls of plastic roller bottles and the virus is added to the bottles with a liquid media that provides the essential nutrients for viral replication (growth). This process continues until the cell culture is optimally infected and at that time the cultures are used to infect more bottles. The process continues until enough culture is prepared to make the doses of vaccine ordered.
At that time, the growth process is complete and the culture is inactivated (killed). Inactivation is tested and must be total. The culture is then "batched" with an adjuvant (carrier) that binds the antigen and helps stimulate an immune response in the animal after administration. It is bottled and put on USDA-required safety and purity testing. This testing is identical to that required for USDA-licensed generic "commercial" vaccines. Autogenous vaccines are not required to have potency, efficacy, or host-species safety testing required of commercial vaccines, however.

Production of an EHDV or EHDV/BTV autogenous vaccine typically takes approximately twelve weeks.

**Autogenous Biological Regulations**

Autogenous biologicals are restricted-use USDA-licensed products made for and used under the supervision of a veterinarian. The restrictions apply to the length of time a vaccine can be made and where the vaccine can be used.

Regarding the time restriction, a virus or bacterial isolate thought to be the cause of a disease can be used to make an autogenous vaccine or bacterin for fifteen months from the date of isolation from tissue or twelve months from the date of first harvest in vaccine production, whichever comes first. After that date, an additional period of use (for a total of twenty-four months from the date of isolation) may be requested if efficacy has been demonstrated and the disease threat still exists. This request is made on a form provided by Newport Laboratories to the requesting veterinarian.

Autogenous vaccines are restricted to be used only in the herd that the isolate came from unless permission to use in other herds has been approved by the state veterinarian. This is also requested on a form provided by Newport Laboratories to the requesting veterinarian. Both the form requesting an extension in use and the one approving vaccine use in other herds must be kept on file for USDA inspection at Newport’s USDA-licensed production facility.

**Vaccination Schedule**

Regarding vaccination, administer two doses, two-three weeks apart, with a single booster given mid-to-late summer ahead of the primary EHD season. For fawns, administer three doses, two-three weeks apart. The first dose should be given after the first month of life, and then a single booster as with the adults, yearlings, etc., in mid to late summer.

In the following years, all deer should get an annual booster in the spring and another dose in mid to late summer.

Autogenous vaccines are USDA-licensed, but the four-to-six years of extensive studies required by USDA for licensed commercial or "generic" vaccines are not required and have not been done. Therefore, data to support duration of immunity or effectiveness of vaccination of fawns in the face of passive colostral immunity is not available. In that regard, the recommended vaccination schedule may be more than is needed.