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PERMETHRIN TEST RESULTS FOR SHELTER ISLAND DEER ANNOUNCED
26 Out of 29 Shelter Island Deer Reveal No Trace of Permethrin

The New York State Department of Environmental Conservation (DEC), working in conjunction with Cornell University, Cornell Cooperative Extension of Suffolk County, and the Cornell University Animal Health Diagnostic Center Laboratory today announced the findings of the 2009 permethrin sampling of deer involved with the New York State 4-Poster™ Tick Management Technology Study. The results announced are from the second year of a three-year study.

In 2009, permethrin tickicide residue was not detected in the tissue of any of the 13 deer sampled at the Shelter Island treatment site, nor any of the six deer sampled at the North Haven control site where no 4 Poster™ Deer Treatment devices are deployed.

Cornell tested 29 Shelter Island deer during the first two years of a three-year study of 4-Poster™ tick management technology. Of those deer collected at the Shelter Island treatment site in 2008 and 2009, 26 out of 29 did not reveal any trace of permethrin in muscle and organ samples tested by the lab. As expected by the study's scientist, none of the ten deer collected at the North Haven control site in 2008 and 2009 revealed any trace of permethrin in muscle and organ samples.

The lab results from the 2009 samples supports the DEC and Cornell hypothesis that the three positive detections in neck muscle collected during 2008 are the result of cross-contamination that occurred during sample collection and handling. Permethrin residue may have been transferred to the neck muscle samples from the outer hide when the neck hide was being cut away for sampling. Sampling procedures were changed in 2009 to include skinning the deer prior to taking muscle samples to better replicate how hunters would handle deer, which should also reduce the likelihood of accidental residue transfer from hide to meat.

About the Tick Management Technology Study:
A multi-year research project is being conducted on Shelter Island to determine whether the USDA-patented device known as the 4-Poster™ Deer Treatment Device can reduce the population of blacklegged (deer) ticks and lone star ticks without causing unreasonable adverse effects on the environment. These species of ticks can transmit diseases to humans including Lyme disease, babesiosis and ehrlichiosis. Further details about this critically important public health and environmental quality research can be found at the following website: http://wildlifecontrol.info/TickStudy/Pages/default.aspx.

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In total, 60 4-Poster™ bait stations are deployed on Shelter Island. The devices are put out from mid-March until mid-December when they are taken in at the conclusion of the tick season. The devices were first deployed on the island in 2008.

The 4-Poster™ device is a bait station that applies the insecticide permethrin to deer when they feed. As a deer feeds on the bait (corn kernels) at a 4-Poster™ station, the animal's neck, head and ears brush against the rollers of the device which are coated with an oily liquid containing permethrin. The permethrin then kills ticks on the deer.

Aside from its use on the 4-Poster™ device, permethrin is widely used as an insecticide on numerous food/feed crops, livestock and livestock housing, buildings, indoor and outdoor residential spaces, pets and for community-based mosquito control. In addition certain products containing permethrin can be sprayed onto clothing, but not directly on skin. Permethrin impregnated clothing is also available to hunters and hikers.

Collection of Deer Samples in 2008 and 2009:

Prior to the hunting season in September 2008, DEC and Cornell University staff harvested three deer from Shelter Island as a preliminary step to measure permethrin levels on their hide and in their neck muscle and liver. These deer were taken from an area where 4-Poster™ devices were deployed and used by deer since spring 2008. No permethrin was detected on the hide, or in the neck muscle or liver.

During the hunting season in October and November 2008, 13 deer were harvested from Shelter Island, and four from North Haven. Eight of the deer from Shelter Island were verified as using 4-Poster™ devices through photo documentation during camera surveys. Verification of 4-Poster™ device use was suggested by the presence of corn in the stomach of an additional two deer, and no evidence of 4-Poster™ device use was available for the three other deer. Samples of hide, neck muscle and liver tissue were collected from each of these deer and analyzed.

During the 2008 hunting season collections, permethrin residue was detected in neck muscle of three of the 13 Shelter Island deer tested during the hunting season. The New York State Department of Health characterized the concentrations as presenting a very low to negligible health risk from permethrin residues when consuming the venison. No detectable levels of permethrin residue were detected in any liver samples collected during the 2008 survey.

Testing of tissue samples in 2008 focused on the neck muscle and liver. The 2009 study continued to test the neck and liver, but added the hindquarter muscle to provide scientists with additional information needed to further address the question of whether permethrin was present in underlying tissue. Three of the deer were collected prior to the 2009 hunting season during July and August, and 10 were collected during the 2009 hunting season in October, November and December. Permethrin residue was detected on the hide of all 13 of these animals, but none was detected in the neck muscle, liver or hindquarter muscle.

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None of the ten deer harvested from North Haven in 2008 and 2009 contained any traces of permethrin residue in their neck, hindquarter muscle or liver; however, eight of the ten North Haven control site deer did contain traces of permethrin on their hide. This may have been the result of their coming into contact with vegetation treated for tick control by conventional broadcast spraying of relatively large volumes of permethrin-based tickicide to yard areas in that control site.

DEC and Cornell will continue to work with Cornell to sample deer for the presence of permethrin residue on hide and in meat.

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