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“Column E Explanations” - 2016 USDA Annual Report

Registration Number: 21-R-0124

Customer ID: # 400

Species: Bat

Total Number of Animals: 6

Explanation of procedure(s) producing pain and/or distress: Fourteen hibernating bats were collected from the wild in early winter under an approved protocol, and housed in an artificial hibernating chamber (aka an artificial ‘hibernaculum’) situated within a lab at our institution. This hibernaculum enabled the bats to be maintained at the lower temperatures and higher humidity levels the animals seek out when they hibernate in the wild in their natural hibernacula. The bats collected were a native, non-endangered and non-threatened species that have been negatively impacted by the effects of white nose syndrome (WNS) disease. The animals were part of a study aimed at discovering a treatment that could be administered to the bats that would prevent/limit the growth of the fungus that causes WNS on bats while they hibernate. In the wild, bats that succumb to WNS are typically discovered to have died in the middle of the hibernation period. Dead bats are sometimes observed in natural hibernacula (e.g., caves and abandoned mines) that are still clinging to rock walls – looking very much like the neighboring (live) bats that sometimes survive infection by the WNS fungus. Thus, no experimental procedure was performed on any animal that induced prolonged stress or pain. Any negative health effects the animals experienced was due to a fungal pathogen they had naturally acquired prior to being captured.

Even though the study animals were monitored daily (at a minimum) in the lab, and were remotely visualized with an internal camera system that permitted 24 hrs/7 days per week monitoring, over the 2-month study period, six bats were discovered dead in the artificial hibernaculum that previously did not show obvious symptoms of disease.

Scientific justification for why pain and/or distress could not be relieved: The discovery of the fungal agent that causes WNS has led to follow-up research aimed at determining how the fungus kills bats, or whether a treatment can be found to reduce the fungal load on hibernating animals, or in the environment they hibernate in. The fungus is ubiquitous in the bats’ environment, and all captured study bats were assumed to already have some level of exposure or infection with the WNS fungus (this was verified by culturing swabs from bodies of bats immediately after capture). The fungus does not appear to harm the animals in the warmer months when bats are not hibernating. But during the hibernation period, bats that succumb to WNS in the wild invariably die in the middle of the winter and before spring. Every effort was made to closely monitor animals in the lab so that any animal that came out of hibernation (torpor) and didn’t return, or which appeared ill, could be humanely euthanized. The bats listed in column E of this report died in the artificial hibernaculum but appeared like they were hibernating (hibernating bats do not move around too much) – thus making it impossible to accurately assess their health status, or determine that they were already deceased.