



Inspection Report

V A POLYTECHNIC INSTITUTE & STATE UNIVERSITY
300 TURNER STREET N.W., SUITE 4120
BLACKSBURG, VA 24061

Customer ID: **492**
Certificate: **52-R-0012**
Site: 001
VIRGINIA TECH
Type: ROUTINE INSPECTION
Date: 29-JUN-2021

2.31(d)(1)(ii)

Institutional Animal Care and Use Committee (IACUC).

The alternative searches conducted for protocols, 19-106, 20-086, and 20-100 do not address alternatives for the procedures that may cause more than momentary or slight pain or distress to the animals. Protocol 19-106 involves infecting animals with a virus and watching progression of the disease. The alternative search methods do not address the disease. Protocol 20-086 and 20-100 involve invasive surgical procedures which are not addressed in the alternative search methods.

Considering alternatives in a research study for painful or distressful procedures is important to minimize animal discomfort and unnecessary procedures in animal subjects.

Correct by the IACUC determining that the PI has considered alternatives to procedures that may cause more than momentary or slight pain or distress to the animals on protocols 19-106, 20-086, and 20-100 and all future protocols.

Correct by: September 1, 2021

2.31(e)(3)

Institutional Animal Care and Use Committee (IACUC).

Protocol 20-100 does not contain a complete description of the proposed use of the animals in the study. An adverse event reported on February 18th, 2021 indicated four out of six animals unexpectedly died during procedures. The PI

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attempted to troubleshoot the problem and made several manipulations to the study procedures. These manipulations were not included in the IACUC approved protocol. Additionally, the approved protocol states “We have included twelve extra animals for procedural development,” but these “developments” are not defined.

A complete description of the proposed use of the animals in the protocol is necessary for the IACUC to review all activities involving animals to ensure they are in accordance with animal welfare regulations.

Correct by updating Protocol 20-100 to include a complete description of the proposed use of the animals in the study.

Correct by September 1, 2021

2.38(f)(1) Direct

Miscellaneous.

*On June 29, 2021 at approximately 11:30 am the inspectors looked at the dairy cows comprising the veterinary teaching herd. One black and white overweight cow (Ear Tag #5483) was noted lying sternal very close to the fence/gate leading to the covered student palpation stalls. The rest of the cows were located down the hill near the hay and water sources. Natural shade and shelter areas (trees) for the cows were available but were far away from the cows and located down a hill, across parts of two pastures and up another hill. Cow #5483 had a respiratory rate of 88 breaths per minute (normal 10-30) and was exhibiting flaring of the nostrils. The dairy caretaker went into the enclosure to get her to stand up. She stood with her neck extended breathing heavily, nostrils flaring. Her respiratory rate at this time was 100 breaths per minute. The caretaker opened the gate and she along with the other cows went under the covered palpation stalls where they had access to shade, food, and water. The temperature was 82 degrees with 63 percent humidity. A large animal veterinarian was contacted. He examined the cow at 3:45pm and diagnosed her with heat stress due to high humidity, being overweight and warm temperature. The access to shade appeared to improve her condition enough (respiratory rate 60, heart rate 84, and body temperature 101.2 according to records) that she was able to be returned to her pasture that day.

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Animals subjected to combinations of excessive temperature, humidity, and time, taking into consideration such factors as health status and body condition issues, can present a threat to an animal's health and well-being. The cows need to be housed and handled in a manner to avoid causing overheating, stress, and unnecessary discomfort.

*The IACUC meeting minutes from the March 18, 2021 meeting include a discussion about an adverse event that occurred on Feb. 4, 2021. The Principal Investigator did not report the event to the IACUC until February 18th. The IACUC conducted a review of the event. On Feb. 4, 2021 the Principal Investigator (PI) and lab staff on protocol 20-100 used six Gottingen pigs in a study involving traumatic brain injuries. The first pig used died during the procedure and blood was noted on the intubation tube. The staff made positioning changes for the second pig who also died with "more blood" noted. The PI team continued to troubleshoot and make changes to the study procedures. In total only two of the six pigs used survived. At no point during the six procedures was the attending veterinarian notified of the adverse events occurring. The continued study manipulations and handling of the pigs after the initial unexpected death led to potentially preventable deaths and pain (surviving pigs). The two pigs that did survive exhibited abnormal neurological signs. Following anesthetic recovery, a veterinarian's assessment of these signs included ataxia (incoordination), weakness in all four limbs and mild/moderate mental depression. One pig was noted trembling. The veterinarian prescribed pain medication for both pigs.

**Handling of all animals shall be done as expeditiously and carefully as possible in a manner that does not cause trauma, overheating, excessive cooling, behavioral stress, physical harm or unnecessary discomfort.

Correct by 7/15/21.

3.125(a)

Facilities, general.

The swine housing facilities need repair. Identified were large cracks in the concrete flooring, a large crack running down a cinderblock wall, several pieces of metal protruding into pens, and rusting and disintegrating metal surfaces. In the

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Grower 3 barn, pens 1, 2, 7, and 8 have slatted concrete floors reinforced with rebar that have large areas of concrete missing with exposed rebar supports. The areas are large enough for a pig to accidentally trap their hoof/foot. Three pens in Grower 3 had pieces of sharp metal extending into the pens which could potentially injure an animal. Additionally, several areas of metal near the bottom of the pen rails have significant rust to the point where the metal is disintegrating. In the barn housing the pregnant sows there is a cinderblock wall between two pens with a large crack running the entire height of the wall.

Structurally unsound facilities can put animals at a high risk of traumatic injury and lead to pain and distress.

Correct by ensuring facilities are maintained in good repair and structurally sound to protect the animals from injury.

Correct by: 9/1/2021

3.127(a)

Facilities, outdoor.

Seven sheep and five beef cow pastures do not provide shade by either natural or artificial means. In one sheep pasture an electrical power line casts a thin line of shade and the sheep were seen seeking shade in the narrow path. The sheep herd and beef herd are both used to provide animals for veterinary teaching labs.

Animals without the capability to protect themselves from direct sunlight are more likely to suffer from overheating and discomfort.

Correct by providing sufficient shade by natural or artificial means to allow the sheep and beef herds to protect themselves from direct sunlight.

Correct by: September 1, 2021

3.127(c)

Facilities, outdoor.

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The sheep barn has a large pool of water approximately 5' x 6' in size and 3" deep located outside in the NE corner of the sheep barn. As you walk down the east corridor of the barn, the pool is visible through an opening in the wall to the left, and sheep pens are located on the right. The pool of water contains a large amount of floating hay, straw, and other unidentifiable debris. Water insects are present throughout the pool in significant numbers. According to a sheep barn employee the pool of water has been present for at least 6 months.

Standing water can provide a breeding site for pests which can increase the risk for disease transmission.

Correct by ensuring a suitable method is provided for rapidly eliminating excess water.

Correct by October 1, 2021

This inspection and exit interview were conducted with the IACUC Representative and other facility representatives.

Additional Inspectors:

Rachel Perez-Baum, VETERINARY MEDICAL OFFICER

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Species Inspected

Cust No	Cert No	Site	Site Name	Inspection
492	52-R-0012	001	VIRGINIA TECH	29-JUN-2021

Count	Scientific Name	Common Name
000076	<i>Bos taurus</i>	CATTLE / COW / OX / WATUSI
000300	<i>Ovis aries aries</i>	SHEEP INCLUDING ALL DOMESTIC BREEDS
000021	<i>Equus caballus</i>	DOMESTIC HORSE
000354	<i>Sus scrofa domestica</i>	DOMESTIC PIG / POTBELLY PIG / MICRO PIG
000751	Total	