Standard Operating Procedure

Human Approach Test (HAT) – Bedded Pack

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Description/objective

The Human Approach Test (HAT) evaluates animals' behavioural responses to the progressive approach and proximity of an unfamiliar human in a controlled setting. It assesses animals' acceptance of human presence within their comfort zone, approach–avoidance tendencies, fearfulness and human affinity. This test is adaptable to various environments and all age classes. *The test procedure described in this SOP is performed in a bedded pack environment and is designed to test a single animal.*

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Terminology

Unfamiliar Human	A person who is unknown to the test animals and has never had close contact with them. This individual should wear clothing that is clearly distinguishable from the uniforms or coveralls routinely worn by farm staff. Ideally, the observer should wear a hooded coverall that maintains a recognizable human silhouette while ensuring that the face remains fully visible.

Requirements

✓ **Personnel (n = 2):**

Personnel	Number	Role
Testing assistant	1	Unfamiliar human responsible for performing the standardized approach sequence.
Camera manager	1	Responsible for managing the camera operation (i.e., installing the cameras, validating the views, and starting/stopping the recording). Document the sequence of animals tested and ensure that no individual is missed or tested twice.

✓ **Materials Needed:**

- Coverall for unfamiliar human
- Personal Protective Equipment (PPE)
- Data sheet/ethogram
- Pen/pencil
- Stopwatch
- Whiteboard
- Dry erased marker
- List of test animals in each pen
- Communication device (e.g., handsfree earphone or walkie-talkie)
- Camera(s)
- Power source for camera(s) (i.e., extension cords, power bank with AC outlet)

General information

- **Location:** The familiar enclosure must meet criteria that ensure both animal safety and appropriate test conditions. It must be familiar to the animals (i.e., a pen or enclosure in which they are routinely housed, either temporarily or for prolonged periods). The enclosure must be enclosed by gates with an open surface area, and the floor must be non-slippery (e.g., covered with rubber mats or bedding material) to ensure secure footing and reduce the risk of injury. It must also be large enough to allow the free movement of all animals being tested.

- **Lighting and noise conditions:** The test environment must be sufficiently and uniformly illuminated to ensure a clear video recording of the animals. To perform a reliable and reproducible test all potential distractions must be avoided, as such the presence of non-essential personnel and any unnecessary noise during testing are strictly prohibited.

- **Camera positioning:** Position the camera so that it provides full coverage of all areas where human-animal interactions may occur. Ensure the camera remains fixed throughout the recording and that clearly visible fixed reference points are included within the field of view to enable accurate measurements and analysis at a later stage.

- **Test order preparation:** Animals housed in neighbouring pens should not be tested consecutively in order to preserve the novelty of the test. Therefore, a predetermined testing schedule should be established and followed**.**

- **Animal preparation**: Individuals within each group should be familiarized with one another prior to testing. In addition, a reliable identification method should be implemented to ensure that individual cows can be accurately identified from video recordings.

- **Distance calibration**: In order to calculate the distance between the animal and the human from the videos, measured markers are required. The locations of the cameras and other fixed landmarks (e.g., gates, posts, etc.) within the enclosure should be measured and recorded as reference points.

Procedure

1. A camera manager sets up the cameras and records the measurements of the various markers (e.g., distance between cameras, distance from each camera to the ground, lengths of gates and posts, and distances between fixed landmarks) within the selected test pen at least 30 minutes before testing to allow the animals to familiarize themselves with the equipment.

2. Following the 30 minutes acclimation period, a camera manager initiates recording for all cameras and verifies that the field of view for each camera is correctly aligned to ensure full coverage of the test area surface.

3. A camera manager writes on the whiteboard the information that will allow to identify the video (Pen ID, test being conducted, date and time) and displays it in all camera views. While doing so, the camera manager verifies that the animals are awake and alert; if any animals are asleep, they should be gently encouraged to wake up. Animals are not required to be standing for the test to proceed.

NOTE: The testing assistant must not have had any previous contact with the animals and cannot assist the camera observer with the steps mentioned above.

4. Once the camera manager exits the testing enclosure, the testing assistant enters the pen calmly, maintaining a natural posture and avoiding direct eye contact. The testing assistant randomly selects an animal and moves to a position approximately 3–4 m from the chosen animal, identifies the animal, and communicates its ID to the camera manager , who records the ID to maintain a log of tested animals and ensure that all eligible animals are assessed only once.

    - If the focal animal is not looking at the testing assistant, the testing assistant should gently capture its attention by softly clapping or snapping their fingers to redirect the animal's focus.

5. Once the animal's is focused on the testing assistant, the testing assistant walks directly towards the animal at the steady, slow peace (0.5 m/s) with arms relaxed.

    - **If the animal initiates a clear response** (i.e., approach or retreat), the testing assistant stops immediately and remains stationary without adjusting body orientation for 2–3 seconds, then calmly turns away and exits the interaction zone and returning to a distance of 3-4 m away from the animal maintaining neutral posture.

    - **If the animal neither retreats nor approaches** (i.e., remains stationary) and the testing assistant has reached a distance at which physical contact is possible, the testing assistant may attempt a single brief touch to the animal's head before turning away and exiting the interaction zone and returning to a distance of 3-4 m away from the animal maintaining neutral posture.

NOTE: If the focal animal displays aggressive behaviours (e.g., butting or charging), the camera manager should declare “STOP TEST” and the testing assistant should exit the pen rapidly. A 10-minute settling period should be provided before resuming the test with the same animal. If the animal continues to display aggressive behaviours upon retesting, the camera manager should declare “END TEST” for that individual. Testing of the remaining animals in the group may continue after a 10-minute settling period. This procedure helps confirm that the response is consistent rather than a random or situational reaction. If aggressive behaviour recurs repeatedly or multiple animals become agitated, testing should be terminated for the entire group.

6. The testing assistant moves to the next focal animal and stand in a neutral position 3-4 m away then the testing assistant communicates the animal Id to the camera manager and repeats step 5.

7. Each animal shall be tested a total of three times. Following the initial test, two additional tests shall be conducted, with a minimum interval of 5 minutes between successive tests on the same animal.

Safety Note

All personnel should stand with proper distance from test animal to stay safe and not distract them. All personnel should remain calm and avoid sudden movements to prevent startling the animals.

AI ASSISTANCE DISCLOSURE

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CREDIT AUTHORSHIP CONTRIBUTION STATEMENT

WELL-E Authorship Governance policy, adapted from the Contributor Roles Taxonomy (CRediT) proposed by Brand et al. (2015).

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