

Ecological detection dogs for wolf scat (*Canis lupus*).

Discrimination and generalization

Scat detection with scent dogs for surveying and monitoring of wildlife is proving to be an efficient method, amongst others to search scat of grey wolves in the field. Research on ecological scent dog training and testing methods is still very scarce. We set up a test to quantify whether a trained ecological search dog previously trained on other odours, could generalize the odour of wolf scat after a short discrimination training phase of only two weeks with only three wolf scat samples. This was tested in an experimental line-up with new wolf scat, dog scat and other distracting odours.

Material and methods

1. Phase 1: first encounter with wolf scat: 5 experienced detection dogs (trained on other species) learned to fixate on European wolf scat samples obtained from zoos, first with one pot, then with one pot and three empty pots. Their reactions upon first contact were observed.
2. Phase 2: two weeks at home: all volunteers continued to train their dogs on the scent discrimination phase with 3 wolf scat samples from 2 zoos and a variety of distracting odours.
3. Phase 3: test day: the dog that had progressed most was tested in a line-up with 8 boxes, 6 repeats & random rotations of distracting odours - dog scat, sheep as to pre scat, chicken scat, stone, lion's mane mushroom, scat from a dog fed on entire rabbit carcasses - blinded to the owner as to presence and position of wolf scat.



Results

Step 1: Imprinting on wolf scat – first contact – learning to fixate

Three of four dogs learned to fixate on wolf scat within 2 hours. All dogs showed an aversive reaction e.g. turning away, lifting a paw while pointing.



Step 2: Training at home with three wolf scat samples

After the training phase at home, a Flatcoated Retriever was selected for the test, the dog that had best progressed at home.



Step 3: Test day: generalization to unknown wolf scat samples?

The generalisation of wolf scat after the brief discrimination training phase with only 3 wolf scat samples, to new unknown wolf scat samples was successful, with high accuracy, sensitivity and specificity.

Mistakes:

- "false positive" (indicating the target as present whereas it was absent): in the negative line-up without any wolf sample, with other distracting odours: the dog fixates at the scat of a carcass fed dog among the other distracting odours, although he neglected this sample when the wolf scat was present.
- "false negative" (indicating the target was absent whereas it was present): in the trial with a very dry wolf faecal sample and the other distracting odours: the dog did not fixate anywhere although he had indicated it correctly in the previous line up.



Conclusions

We share the information on the training results during the **pilot phase** of this project, as we stumbled on a scarcity of quantified information on training methods and results when initiating ecological scent dog training. In a **follow-up** project we will increase the test difficulty. The test results underline the importance of including blank trials in the training, variation in dryness and age of scat and variation in the diet of scat producers.

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