

Quarantine detector dogs

Pooch power



More than a million containers arrive in Australia each year. We need to make sure their cargo does not include pests, weeds or diseases.

Dogs really are our best friends – and not just that, but also one of our most super-powered quarantine technologies.

The Australian Quarantine and Inspection Service uses working dogs for a very particular job – to sniff out high-risk items brought into the country by travellers or in the mail.

Beagle magic

Dogs that were originally bred for hunting, like beagles, have an exceptional ability to isolate a particular smell from among many. They're also calm and friendly around people.

This combination makes the beagles ideally suited to working with passengers at airports. It means beagles can isolate quarantine risk items from among a range of goods in assorted luggage, but without scaring or disrupting the passengers.



If the dog sniffs a target scent, he sits next to the offending item.

Training a quarantine beagle

1. Trainer places a 'target' smell in a cardboard box and gets beagle to sniff it. Trainer tells beagle to sit. When beagle sits he gets a food reward.
2. Trainer places 'target' box among other boxes that do not contain smells. Trainer gets beagle to sniff each box. When beagle sits next to target box, he gets a food reward.
3. Trainer places target smell inside suitcase instead of box. Trainer also fills suitcase with other things you might find in a traveller's suitcase. Trainer puts this suitcase among others that do not contain target smells, and repeats the sit and reward process.
4. Trainer makes exercise increasingly complex, until dog can always respond to the target smell, regardless of other smells coming from other places.
5. Trainer repeats process with each new target odour.

The team of beagle and handler then moves to the airport terminal at Sydney for additional training under conditions similar to those they can expect in the field.



Detector dog handler Karen King works at the international airport in Perth.

Target smells

Australian quarantine detector dogs are trained to detect:

- fresh fruit and vegetables;
- meat, both fresh and processed, including canned meats;
- fresh plant material;
- eggs;
- birds;
- reptiles;
- seeds; and
- bees.



Dogs working with international mail are also trained to detect dairy products, dried plant material and soil.

Backroom sniffers

Australian Quarantine also employs detector dogs at international mail centres, to detect quarantine risk items in letters and parcels.

As usual, the dogs are looking for material that could introduce pests and diseases to Australia.

But unlike their beagle colleagues, who are working at airports and therefore constantly on show and mixing it with the public (rather like celebrities!), the mail dogs work behind the scenes. So for these dogs manners and image are not quite so important.

For this reason, there are numerous breeds of quarantine dogs working at mail centres, including cattle dogs, spaniels, labradors, sheep dogs, terriers and cross-breeds.

Many of the dogs were on 'death row' in dog pounds and at the RSPCA before being rescued to work for Australian quarantine.



Millie works in Australia's busiest international mail centre in Sydney. Her job is to find quarantine risk items sent from overseas.

Super powers

The average dog has:

- about 220 million scent receptors in its nose, compared with about five million in a human nose;
- about seven square metres membrane in its nose (humans have about half a metre); and
- a sense of smell so sensitive that it can detect, and identify, odours that are so diluted that even the most sensitive of scientific instruments can't measure them.

So to create a specialised quarantine detector dog, we are really just shaping a dog's natural behaviour.

Discussion

How many different fields of work can you think of that employ dogs? For each field, what breed of dog is typically used? Can you think why that breed would be particularly suited for the work? What particular skills does the dog bring to the job?

Activity

Imagine you are a quarantine detector dog. Write a one-page introduction of yourself. Explain how you ended up as a detector dog. Where do you work? Describe a typical day. What do you enjoy about your job? How do you feel about your handler? What is the weirdest thing you've ever found? What has been the highlight of your career to date?

Superpowers! Scientists and engineers are unable to invent a machine that is as sensitive to scents as the average dog's nose.

