The Gnatwork
Intended use of resource / data

Open access resources and data provided by The Gnatwork should be used for the intended purpose only, as specified below.

Title of resource

Truck Trapping Protocol

Authored by

Sanders, C.J., Gubbins, S., Mellor, P.S., Barber, J., Golding, N., Harrup, L.E. and Carpenter, S.T. (2012). Investigation of diel activity of *Culicoides* biting midges (Diptera: Ceratopogonidae) in the United Kingdom by using a vehicle-mounted trap. *J Med Entomol*, 49(3): 757-65.

DOI

DOI: 10.1603/ME11259

Description

Truck trapping is a means of catching insects, including *Culicoides* biting midges using a vehicle-mounted net that is driven along a defined 'run' of track. Truck trapping is effective throughout the day and is not affected by some of the trapping bias that light, suction and baited traps are limited by. This method sheet describes its safe use in the field environment.

Intended use

Scientific research use and training purposes.

Restrictions on use

Content is not to be redistributed in the public domain (e.g. presentation, lecture, online or in publications).

Resource history

N/A

Truck Trapping Protocol

If using this protocol, please cite:

Sanders, C.J., Gubbins, S., Mellor, P.S., Barber, J., Golding, N., Harrup, L.E. and Carpenter, S.T. (2012). Investigation of diel activity of *Culicoides* biting midges (Diptera: Ceratopogonidae) in the United Kingdom by using a vehicle-mounted trap. *J Med Entomol*, 49(3): 757-65.

A. Introduction

Truck trapping is a means of catching insects, including *Culicoides* biting midges using a vehicle-mounted net that is driven along a defined 'run' of track. Truck trapping is effective throughout the day and is not affected by some of the trapping bias that light, suction and baited traps are limited by. This method sheet describes its safe use in the field environment.

B. Materials required

Equipment:

- Truck trap: net aperture 1.5 x 0.5 m, use Dyce *et al.* (1972).
- Trap net: very fine cotton mesh
- 2 x 'sock': closed end collecting sock, very fine mesh to fit over trap end
- 2 x kill jars: not PVC based plastic, marked 'A' and 'B'
- Plastic storage containers: screw top, 150 - 250 ml volume
- Cardboard pill box: 150 ml volume
- Cotton wool: absorptive
- Pencil and paper
- Cable ties
- Nitrile gloves
- Automatic weather station

Chemicals and reagents:

- Ethanol: for preserving - any grade & make, diluted to 70% with tap water
- Choloroform: for kill jars - any grade & make

Truck trap in operation
Source: Sanders *et al.* (2012)

C. Method

C.1 Select appropriate track for truck trapping runs. Ensure there are no obstacles and other users have been informed. Typical tracks will run passed *Culicoides* breeding sites and fields in which mammalian hosts are kept. Track length should exceed 500 m.

C.2 Mount trap frame (see Dyce *et al.*, 1972) onto vehicle, ensuring roof bars are in locked position.

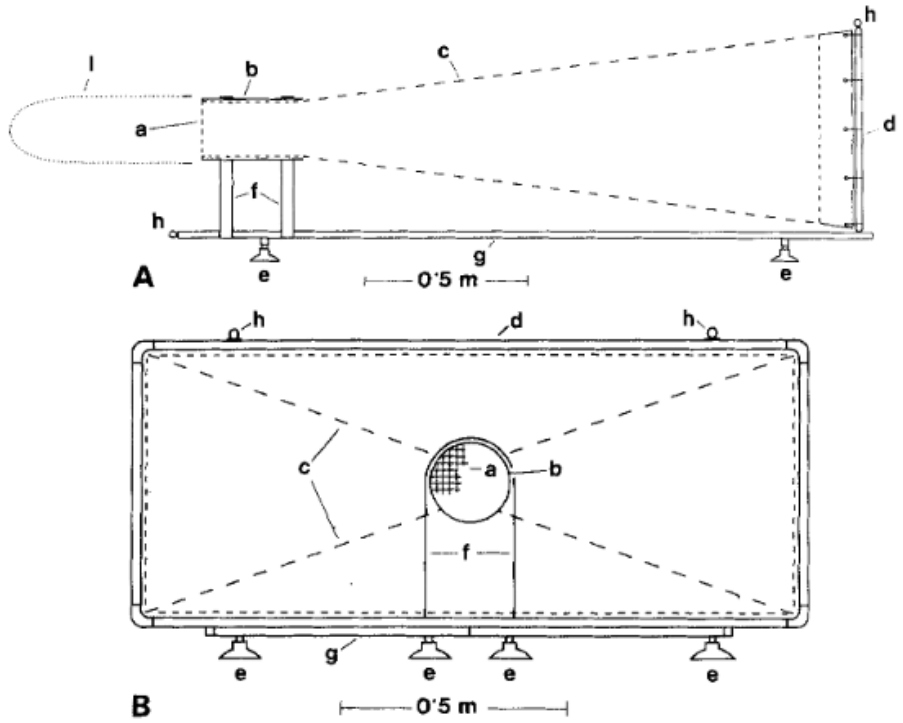

FIG. 2.—truck trap—A, lateral plan; B, front plan: a, metal mesh to exclude large insects. Variable according to size of target group; b, sheet metal sleeve; c, terylene net (13 × 22½ cm) funnel laced to the metal surround in front and fixed to the sheet metal sleeve behind; d, front opening 1.5 × 0.6 m with tube metal surround; e, suction cups which seat on top of motor vehicle; f, metal support struts attached to b and g; g, tube metal "A" frame undercarriage; h, guy rope attachment rings for securing trap to vehicle; l, removable terylene voile bag in which insects aggregate.

Source: Dyce *et al.* (1972)

C.3 Mount netting onto frame using cable ties, securing into funnel shape.

C.4 Place sock on collecting end of trap.

C.5 Using gloves, pour 5 ml of chloroform onto wad of cotton wool and place inside cardboard pill box. Place this box inside a kill jar and screw down lid firmly. Repeat for second kill jar. The trap is now ready to be used.

C.6 Drive at constant speed of 20 mph along track.

C.7 At end of run, stop and quickly get out of truck and secure insects within the collection sock.

C.8 Carefully remove sock from trap and place sock in kill jar 'A' and close the lid.

C.9 Empty trap of remaining insects by shaking netting and place second collection sock on trap for next run.

C.10 A return run back up the track can now be made, repeating from C.5 and using kill jar 'B'.

C.11 In the intervals between runs, remove a sock from the kill jar and place on sheet of white paper. Inside the vehicle, gently shake insects from the sock onto the paper. Tip insects into storage pot and add ethanol as to cover all insects by 10 mm depth. Add paper tag with sample code, date and time of run and direction (NSEW).

C.12 Transport samples back to the laboratory for identification.

C.13 Intervals between runs will be dependent on experimental design. Typically, runs will be completed on an hourly basis (2 runs, there and back, per hour).

C.14 Relevant meteorological data can be downloaded from the automatic weather station at any time after the last run of the session.

D. Results

Results of trap collections should be recorded.

E. Maintenance

Where appropriate, equipment is maintained as specified in the manufacturer's instructions.

F. Troubleshooting

Where trapping in the field the greatest emphasis should be given to safety of the humans and livestock present.

G. References

Sanders, C.J., Gubbins, S., Mellor, P.S., Barber, J., Golding, N., Harrup, L.E. and Carpenter, S.T. (2012). Investigation of diel activity of *Culicoides* biting midges (Diptera: Ceratopogonidae) in the United Kingdom by using a vehicle-mounted trap. *J Med Entomol*, 49(3): 757-65.

Dyce, A.L., Standfast, H.A. and Kay, B.H. (1972). Collection and preparation of biting midges (fam. Ceratopogonidae) and other small diptera for virus isolation. *Austral Entomology*, 11(2): 91-6.