



Identifying the sex pheromone of cranberry tipworm (*Dasineura oxycoccana*)

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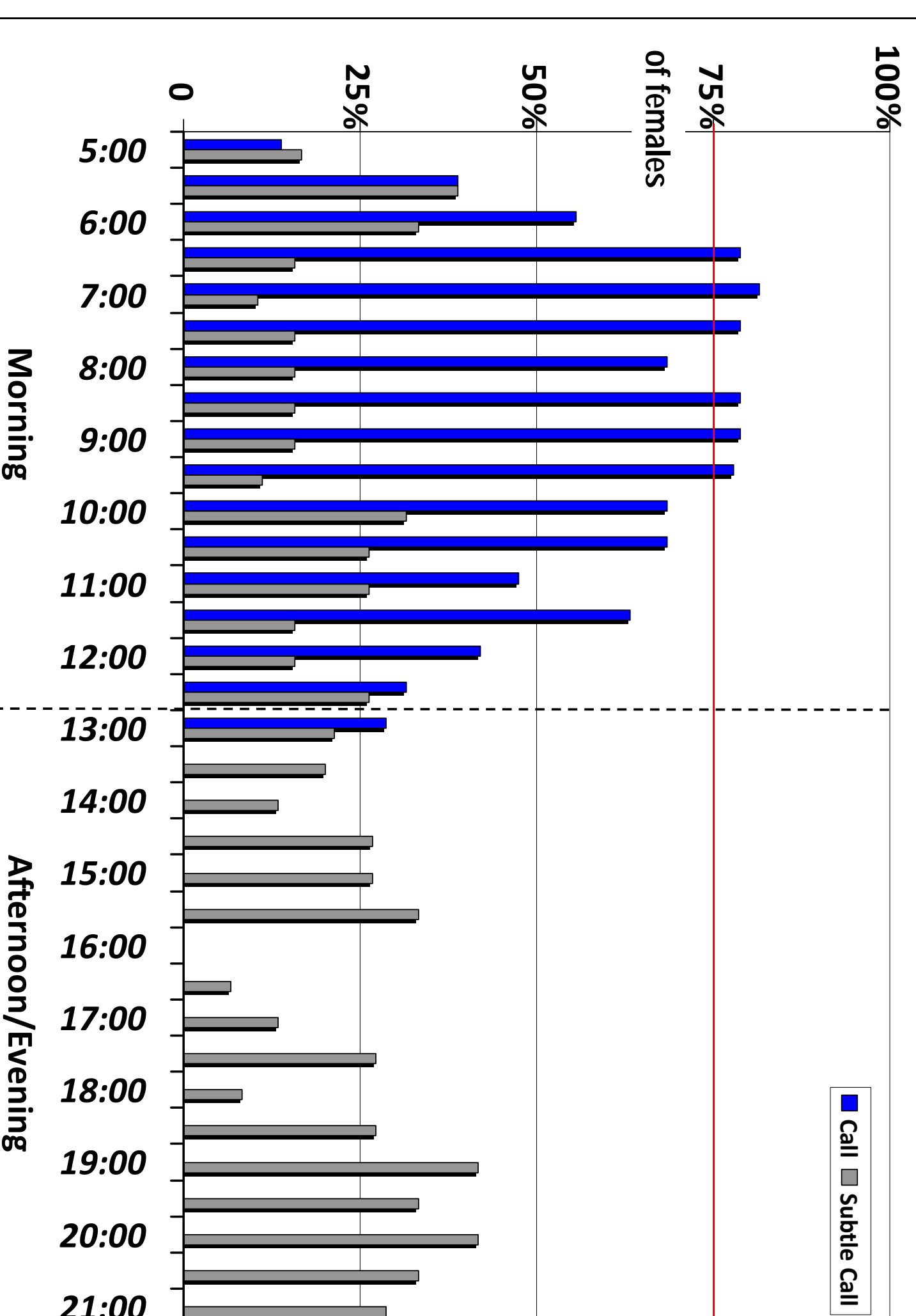


2009



Female tipworms “call” by extending their ovipositor (blue arrow) to release pheromone, which attracts males.

Obvious calling (blue bars) occurred from early morning until noon.

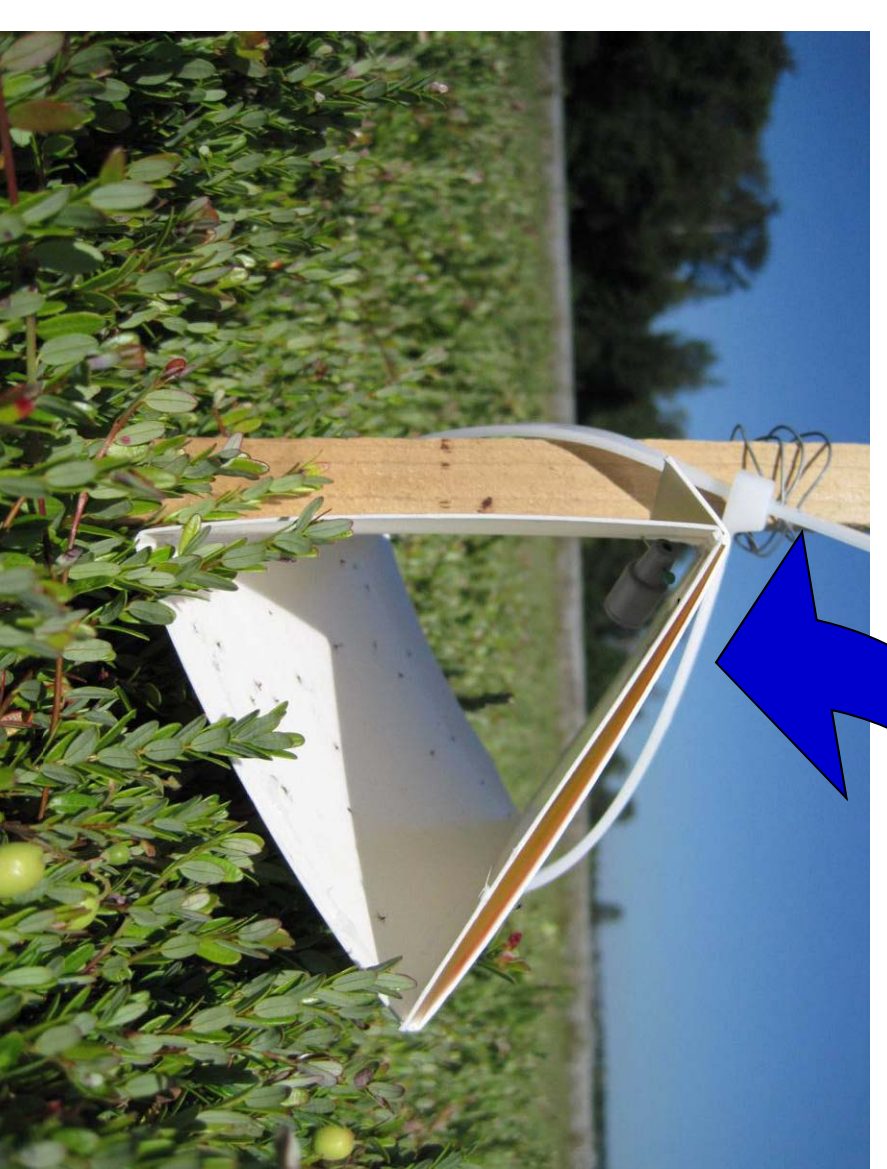


Credits:

Dan Peach; Ringa Kurniawan (UBC/AAFC);
Sneh Mathur (AAFC);
Darsh Banns (grower)

2010

- Ovipositors were placed in hexane to extract pheromone.
- The pheromone extract was analyzed by a combination of gas chromatography and electrophysiology.
- One component in the extract stimulated male tipworm antennae to respond.



Sticky trap baited with 300 µl of synthetic (racemic) pheromone containing a mixture of 4 optical isomers.

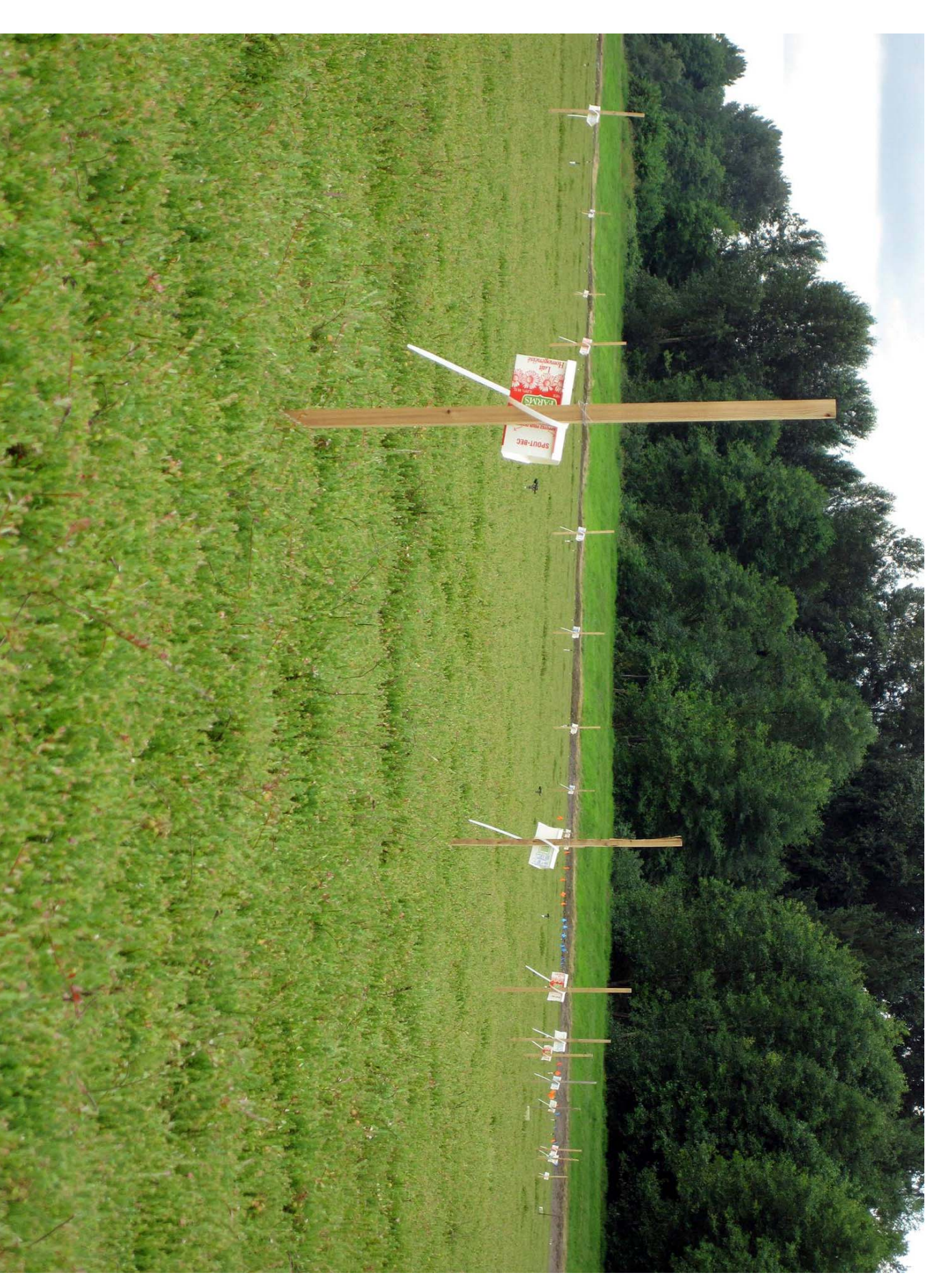
Racemic pheromone attracted 6 times more males than did the hexane control.

Credits:

Dan Peach, Regine Gries,
Grigori Khaskin, Gerhard Gries;
Darsh Banns (grower)

2011

Each of the 4 optical isomers of the pheromone was synthesized and tested on a cranberry farm, at the rate of 100 µg of isomer per trap.



One of the 4 isomers attracted 29 times more males than did the hexane control!

These encouraging results suggest that we have identified the tipworm pheromone.

Credits:

Grigori Khaskin, Regine Gries,
Jessika Iwanski, Gerhard Gries;
Darsh Banns (grower)