

Purpose:

To investigate whether 45 ° angulations of yellow traps for warning of carrot fly egg-laying gives better catches of carrot flies and a better warning.

Background:

Some years ago studies were carried out in UK to develop the method of carrot fly warning based on catches in the field with yellow sticky traps (*Rosemary H. Collier and S. Finch 1993. Carrot fly and cabbage root fly: improved systems for forecasting attacks.*). Based on studies and field tests, a 45° angling of the yellow sticky traps has been recommended for carrot flies, instead of placing the yellow traps vertically as is has been done traditionally and according to the instruction on the Rebell Orange. The recommendation of angling the traps is now practiced in some parts of some European countries like parts of Sweden and Holland. The manual following the purchased yellow sticky traps from Biocontrol in Switzerland, however, continues to recommend that the traps should be placed vertically in the carrot field. Tests in 2014 in DK showed that the vertical and angled sticky traps caught equal number of carrot flies or maybe a trend toward more carrot flies on the vertical traps. The sticky traps are more selective to carrot flies on the bottom side when angled and carrot flies on the bottom side might be easier to count for at non trained person. Subsequently, a Dutch company has pointed out that the angled traps must be turned, so the top-side is turned towards the sun, so the lower-side lights up when the sun is shining on the plates.

Description:

For testing the effect of angled yellow traps and the effect of the sun, special iron poles were constructed, with adjustable holders so the height of the plates over the canopy could be adjusted as well – see photo. For the traditional vertical traps, iron fence poles for fencing cattle, were used for the test. The test was conducted in five carrot fields for the first generation egg-laying in May-June and in six fields for the second generation egg-laying in August-September. In each field traps were placed with a distance of 10 meters from the fence and 10 meters apart. There were 6 traps per field: three angled and three vertical traps. The angled and vertical traps were placed alternately between each other.

The vertical traps were placed sideways towards the fence.

The angled plates were turned towards south, so the sun would shine on the upper-side and light up on the lower-side.

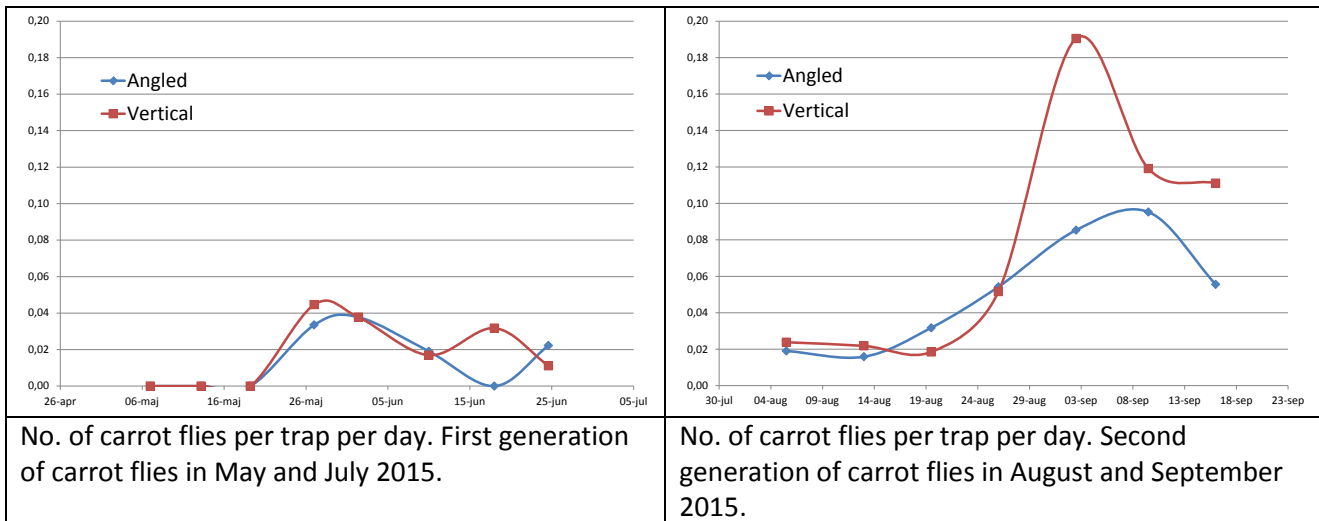
Yellow traps were changed once a week.

Results:

The weather in 2015 during May, June, July and parts of August was colder than normal (colder than 30-year average). For this reason carrot fly activity came late and on very low level all season. When there are only one or two flies on the yellow traps, it's difficult to point out any difference between vertical and angled traps.

Out of all counts from each location and week with carrot flies on the traps, there were more carrot flies on the vertical traps in 48 % of the counts. In 29 % of the counts there were more carrot flies on the angled traps and on the 23 % remaining there were the same number of carrot flies on the angled and the vertical

traps. All in all, the trend both in 2014 and 2015 has been that we caught a bit fewer carrot flies on the angled traps than on the vertical traps – see figure below.



On some locations there are a lot of non-target insects on the yellow traps. Just like last year we have seen that the angled traps also have a lot of non-target insects on the upper side, but hardly any non-target insects on the lower side. At the same time there is hardly any carrot flies on the upper side. Nearly all sit on the underside. This makes it easier to identify and count the carrot flies on the angled traps than on the vertical traps for a non-trained person. This corresponds very well with the experiences from UK, where tests showed 90% reduction of non-target insects on the underside of the yellow sticky traps compared to vertical traps.

Other reports have also shown that surrounding the yellow traps with a coarse meshed green net fence does have the same effect, with no effect on the number of carrot flies caught on the traps. The disadvantage of using the green meshed fence is that it makes changing the yellow traps more laborious. The green meshed fence is rarely used in Denmark in practice.

Conclusions:

Two years test in Denmark with vertical and 45° angled yellow traps for carrot fly egg-laying shows that the vertical and angled sticky traps catch equal number of carrot flies or maybe a trend toward more carrot flies on the vertical traps. The yellow traps are more selective to carrot flies on the underside when angled and carrot flies seem to be easier to count for a non-trained person with angled traps.

LRM and PBK, 14.10.2015



13. maj 2015



20. maj 2015