

# #070

## Effect of migration time on population dynamics and damage potential of cabbage stem flea beetle (*Psylliodes chrysocephala* L.)

ADDRESS

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This study aimed to evaluate the influence of different migration periods and beetle densities of *P. chrysocephala* on its damage potential in winter oilseed rape. To simulate different migration periods and beetle densities a field net cage experiment was carried out in which different densities (7, 13 and 20 beetles/m<sup>2</sup>; male:female 1:1) at three different dates (begin of September until begin of October) were released to net cages in 2015, 2016 and 2017 in a winter oilseed rape field in Braunschweig, Germany.

The number of larvae per plant was assessed at different dates from each cage until spring. Early beetle release resulted in significantly higher number of larvae in autumn and with significant differences between the years. Release at the end of September / begin of October only generated low larval infestation at the 1st sampling. Until early spring the number of larvae increased significantly in 2015/16 thus beetles seem to have laid eggs until early spring because of mild winter temperatures, whereas the number of larvae in 2016/17 and 2017/18 only slightly increased during winter.

High numbers of larvae in autumn significantly influenced the architecture and growth of plants. The main stem was damaged which caused a high rate of bushy plants. Winter losses of plants only occurred in 2017/18. Yield analyses in 2015/16 and 2016/17 only showed in 2016/17 in treatments with 20 and 13 beetles and release at begin of September a significant reduction.

The data indicate that the temperature especially during September is very important for the damage potential of *P. chrysocephala* in the middle of Germany. Early migration and high temperatures during September cause high numbers of larvae at early growing stages which weakens the plant during winter. Late larval infestation after cold winter periods did not show any influence on plant growth parameters and yields. Similar results were obtained with manipulating natural beetle migration near Göttingen.

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