

Organic Agriculture
On - Farm Research
Project : Flea Beetle
Control on Brassica
(Raddishes)

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Introduction and Background Information

Over the past three years flea beetle infestation on brassica plants have been a problem in the CSA garden at Falls Brook Centre. They were a severe problem on brassica in a salad green mix. The lettuces were undamaged but the brassica were rendered practically useless as a salad green.

Transplanting plants which have out grown the seedling stage was tried. Their leaves by this time were larger, tougher being unpalatable to the tiny flea beetle - or at least to most of them. A homemade flea beetle deterrent solution was applied to affected plants with varying results. Some brassica in the CSA garden out grew flea beetle damage ~~but~~ but others, salad greens, were greatly compromised.

~~Given~~ Given the history of flea beetle infestations on brassica in a mixed-vegetable garden, it seemed fitting to do a research project on a method of controlling these pests.

Brief Introduction on Flea Beetles:

Flea beetles belong to the subfamily Alicinae of leaf beetles. Their life cycle begins in early spring when overwintering adults emerge. They commence to feeding on young plants including weeds such as plantain, wild radish and other mustard family plants. They lay eggs at the base of host plants. Larvae ^{emerge} in a week to feed on small roots - no significant damage. They feed for two - three weeks then pupate. Adults emerge in two - three weeks.

Flea Beetles may produce one to four generations per year. The crucifer and cabbage flea beetle are common in this region. The crucifer flea beetle is an introduced species.

(Purpose of the On-Farm Research Project.

The purpose of the project is to determine the extent of damage flea beetles make on brassica plants, radishes in particular; and to find an effective method of control using organically acceptable means.

Methods and Materials

The research project took place in the CSA garden at Falls Brook centre, ^{in Knowles} ^{dit}. Three ~~bed~~ raised beds were prepared each approximately twenty-four feet long. Each bed was divided into three sections approximately eight feet long. The width of each bed was three feet respectively. Radishes were seeded two rows per bed to a total of six rows of radishes. They were planted on ^{June} ~~July~~ 7. Two treatment and one control section were chosen randomly. Reemay was laid, July 8, on one section per bed. Another section was designated for a garlic/cayenne pepper spray treatment. A final section was reserved for a control (no treatment).

The see-may cover was left on the plants for the duration of project. The garlic/cayen pepper spray was applied two to three times a day, usually morning and mid-day - weather permitting. The control was left with no treatment.

Yellow sticky traps, made for house plants, were stuck in the soil next to seedlings. Three to each row in garlic/cayen pepper spray treatment section were placed.

The purpose of the sticky traps was to monitor flea beetle populations ~~in~~ near seedlings.

Data was collected by observation, note taking and digital camera.

The yellow sticky traps, caught a significant number of flea beetles, unfortunately

they also trapped other insects such as small wasps and butterflies. They simply indicated that flea beetles were in an abundance.

Radishes under ree-may cover had small flea beetle damage, where as the plants in the garlic/cayen pepper treatment section and the plants in the control section showed significant flea beetle damage. Plants in all three sections grew sporadically - maturing at different rates. However the ree-may plants seem to be lusher and bigger than the others.

Weights of plants varied 19 grams for a ree-may plant selected, 17 grams (thereabouts) for the plants from the other two sections.

Results and Discussion

The results of the research project were inconclusive. Each section showed varying degrees of flea beetle damage on radish seedlings. The seedlings beneath the ree-may cover had the least amount of damage. The garlic/cayen pepper spray treatment section had ~~the~~ normal flea beetle damage. This is the same with the control section. The garlic/cayen pepper spray seemed not to deter them; they simply hopped away.

In my research I have come across some interesting methods of controlling flea beetles. They are organic or "natural" methods. Most of them are basic common sense methods using what is handy (organically) and of improving soil quality, i.e. removing

Plant debris ~~and~~ ⁱⁿ fall, light cultivation at seedling stage, mulching with straw or compost, etc. Another method ~~is~~ involves companion planting with mint as a deterrent - perhaps the strong odor or fumes from the oil in the plant deters them? Another method is to place bruised elder berry leaves over seedlings - again perhaps a chemical in the leaves deters them. Row cover and setting out plants at a point in growth that flea beetle damage would be insignificant seem more practical and useful ways of limiting damage to acceptable plants.

At the end of the day the radishes in all sections of research project did grow flea beetle damage.

Conclusion

At the end of the project the radish plants under the see-may had less flea beetle damage than the ones in the garlic/cayenne pepper spray treatment section. The plants in the control section had normal flea beetle damage. The see-may cover showed to be the best means of controlling flea beetles on brassica. If brassica plants are seeded soon after adults emerge from overwintering, and the seeded beds covered directly upon seeding then the see-may cover should protect seedlings through the first tender stages, the adult would not have a host plant next which it lays its eggs. - arresting, hopefully, a generation. It would also allow seedling a head start to maturity.

References

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↑ Should include the date that you looked up the site + year the

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