

Flea Beetles: A New Introduced Pest in Niger Crop

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SUMMARY

Flea beetles (*Phyllotreta* spp.) are serious outbreak in Niger crops. This is the became a more destructive and gregariously from Niger crop. Ancient attack a variously Solanaceae and Brassicaceae plants but presently attack a Niger crop. It's very bad news for a researchers, scientists and Niger farmers.

INTRODUCTION

Flea beetles (*Phyllotreta* spp.) are common pests throughout the Pacific Northwest states of Idaho, Oregon, and Washington but found in JNKVV, Jabalpur, MP PC, Unit sesame and niger field. The attack plants in the families Brassicaceae (e.g., broccoli, kale, cabbage, collards) and Solanaceae (e.g., potatoes, tomatoes, eggplant, peppers) but presently heavy attack in niger crop. The adult and larval stages have chewing mouthparts. Flea beetle feeding damage can sometimes lead to total crop loss and gregarious type feeding. Flea beetles are highly mobile, which makes control difficult. This publication describes the new introduction insect of flea beetles with the crop of niger. The three most common flea beetle species commonly found in the Pacific Northwest are the flea beetle (*Phyllotreta* spp.) on niger, the tuber flea beetle (*Epitrix tuberis*) on potato tubers and foliage, and the western potato flea beetle (*E. subcrinata*) on solanaceous crops. Crucifer flea beetle adults are shiny metallic blueblack while both the tuber flea beetle and western potato flea beetle can be dark metallic brown, black, or bronze. The tuber flea beetle appears dull black in bright light, whereas the western potato flea beetle tends to have a more bronze appearance. The tuber flea beetle and western potato flea beetle are so similar in appearance that only a microscopic inspection of reproductive parts can be used to definitively distinguish between the two species. Although the adults of all three flea beetles species are small (1/15 to 1/6 inch long), their enlarged hind legs allow them to jump great distances. Additionally, flea beetles are strong fliers, moving into crop fields from neighboring fields and weedy borders. The adults actively search for emerging host plants using visual as well as chemical olfactory (smell) cues.

Economic Importance: It causes severe damage to buds and tender shoots. The damage may extend from 11 to 31 %.

Marks of Identification: Adults: Small (4 to 5 mm long) shining flea beetle with metallic bronze colour and 6 dark spots on the elytra. Grub: Small, dirty white.

Host Plants: Specific to grapevine, pangara tree, broccoli, kale, cabbage, collards, potatoes, tomatoes, eggplant, peppers and recently recorded in niger crop.

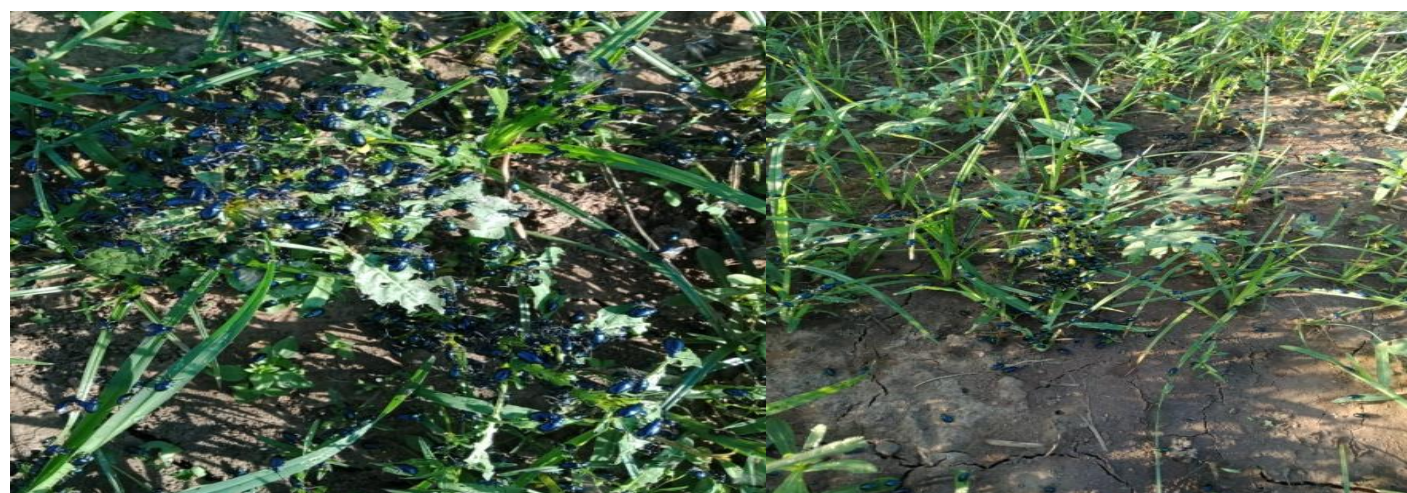
Nature of Damage: Adult feed voraciously on sprouting buds and tender shoots soon after pruning. Buds dry up and do not develop. Beetle also feed on mature leaves giving shot hole appearance. Grubs feed on roots but do not cause severe damage.



Flea Beetle Feed on Niger Crop Leaves



Flea Beetle Feed on Niger Crops in Seedling & Vegetative Stages



Flea Beetle Gregariously Feed on Weeds in Niger Field

Life History: Eggs: In crevices of vines and under bark or in soil. Incubation periods: 4-8 days. Larva: larval periods 35-45 days. Pupa: Pupation in soil, 6-8 cm deep in earthen cells, pupal periods: 7-10 days. Life cycle completed in about two months. C.O.: Adult beetles hibernate under the bark from Nov. to March. S.O.: Pests is very destructive to fresh flush after pruning.

Parasites and predators:

A native parasitoid wasp, *Microctonus vittatae*, is found throughout the Pacific Northwest and can kill adult crucifer flea beetles, although the rate of parasitization is low. Generalist predators such as lacewing larvae (*Chrysopa* spp.), big eyed bugs (*Geocoris* spp.), and damsel bugs (*Nabis* spp.) have also been known to feed on adult stages of flea beetles. Grow flowering plants such as anise, dill, chamomile, marigold, or clover around the host plants to enhance floral resources and encourage the native parasitic wasp and other generalist predators.

Entomopathogenic nematodes:

Entomopathogenic nematodes are soil-dwelling parasitic worms that kill insects. Entomopathogenic nematodes in the families Steinernematidae and Heterorhabditidae can attack the larval stage of flea beetles. Furthermore, the nematode species *Steinernema carpocapsae* has been demonstrated to decrease damage caused by flea beetle larvae in potatoes.

Fungal pathogens:

Beauveria bassiana is a fungus commonly found in many soils, and it causes a disease in insects known as white muscadine that has been shown to reduce flea beetle populations. When insects come into contact with *B. bassiana* fungal spores, either by sprayed droplets or exposure to a treated surface, the spores attach to the insect, germinate, and penetrate the insect's body. The fungus releases toxins that liquefy the insides of the insect, creating a food source for the fungus and subsequently killing the insect. The *B. bassiana* strains GHA and ATCC 74040 are effective at controlling flea beetles, and some formulations are organically approved and can be purchased commercially. It is most effective to apply *B. bassiana* in the evenings because sunlight can kill these spores.

Management Practices: Remove the affected seedlings, proper thinning and spray with 0.05% profenopsos or 0.05% chlorpyrifos or 0.2% carbaryl 50 WP/ 0.05% dimethoate or dusting methyl parathion 2%. The first spraying immediately in seedling stages.

CONCLUSION

Flea beetles are recently outbreak in niger crop. This insect is impact of climatic changes or global warming a major problems in outbreak of insect pests in agriculture farming or agriculture precision farming. So, proper maintenance a niger crop and proper spraying to control flea beetle in niger crop.

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