

ted,  
place  
one

# UNIVERSITY OF KENTUCKY

COLLEGE OF AGRICULTURE

Extension Division

THOMAS P. COOPER, Dean and Director

---

CIRCULAR NO. 109

(SECOND EDITION)

---

FLEA BEETLES OF TOBACCO AND POTATO.

---

By

H. GARMAN

Lexington, Ky.

October, 1922

---

Published in connection with the agricultural extension work carried on by co-operation of the College of Agriculture, University of Kentucky, with the U. S. Department of Agriculture and distributed in furtherance of the work provided for in the Act of Congress of May 8, 1914.

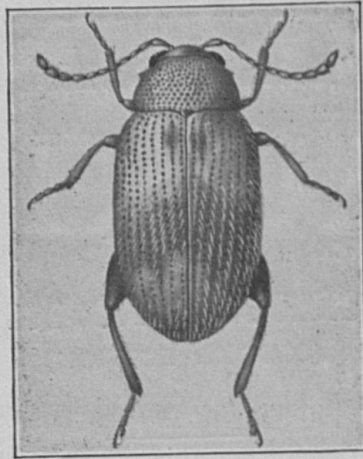


Fig. 1. The Tobacco Flea Beetle (*Epitrix parvula*).

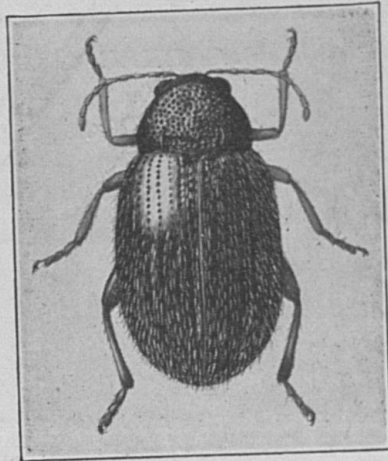


Fig. 2. The Southern Potato Flea Beetle (*E. fuscula*).

S  
bacco  
plant  
sists  
eased  
often  
whol  
are s  
obser  
serv  
mon  
Flea  
brov  
the  
wee  
legs  
per  
seve  
  
the  
wh  
abc  
toe  
not  
W  
is  
—  
ser  
he

## CIRCULAR NO. 109

### Flea Beetles of Tobacco and Potato.

By H. GARMAN.

Small jumping beetles are very destructive to young tobacco plants while in the beds and for some time after the plants have been transplanted to the fields. The mischief consists in gnawing small areas from the leaves, producing a diseased appearance sometimes mistaken for rust, the gnawings often taking the form of irregularly scattered round holes, whole leaves being finally riddled and destroyed. The insects are so small and leap so quickly or drop to the ground when observed, that they are difficult to capture and often escape observation as the cause of the injury. The species most commonly found in tobacco beds has been given the name Tobacco Flea Beetle\*. It is about a twentieth of an inch in length, brown in general color, with a rather broad, black band across the middle of the back. It places its eggs in the soil among weeds and its young, a whitish grub with three pairs of jointed legs, feeds upon the roots of these plants. The whole life period of the insect is completed in about thirty days, and several broods may develop in a season.

The insect attacking potatoes\*\* in Kentucky is larger than the tobacco flea beetle and is entirely black, its body being somewhat thickly clothed with hairs. The adult beetle measures about one-twelfth inch in length. It riddles the leaves of potatoes much as does the brown species attacking tobacco, but does not confine its injuries to young plants nor to the lower leaves. Whole plants are often so badly gnawed by it that the growth is checked and the yield of potatoes reduced. It attacks egg-

\**Epitrix parvula*.

\*\**Epitrix fuscula*. The name *E. cucumeris* is applied to an insect observed on potatoes at the North, but the species has not been observed here as a serious pest.

plants also, and is so generally present on these plants as to have received the name Egg-Plant Flea Beetle in some parts of the country. Its life-history is similar to that of the tobacco flea beetle, but has not been very carefully worked out. The gnawings of the insect are generally accompanied by a deadening of the leaves about the holes, giving the plants a rusty appearance, not always recognized as the work of this pest.

Both flea beetles can be destroyed by applying poisons to the leaves. In the case of both plants treatment should begin early, and since the injury is more or less severe every season it is well to spray before the beetles are observed. Arsenate of lead may be used with perfect safety at this time, 1 1/2 pounds of the powder in 40 gallons of water, and may be applied with a watering can, or better with a knapsack, bucket, or barrel sprayer. One or two applications are sufficient for tobacco, though it may be advisable some seasons to spray the young plants in the field. Paris green can also be used, 1/4 pound in 40 gallons of water, adding to prevent its burning action, a pound of freshly slaked lime.

The beetles come into beds from lurking places among weeds outside, hence keeping the cloth covers over the beds as much as possible affords some protection. Clearing away weeds, grasses and rubbish about the beds is also advisable.

An excellent general purpose spray for potatoes is Bordeaux mixture and arsenate of lead\*, using 4 pounds of blue stone, 4 pounds of lime, 40 gallons of water and 1 1/2 pounds of arsenate of lead powder. Beginning when the plants are young and spraying with this combined spray every ten days will show a decided increase in the yield of potatoes by preventing the injuries of both flea beetles and potato beetles. It is not a perfect remedy for early blight, but protects from this ailment also as well as any preparation at present known.

\*Arsenate of lime may be used in the same proportion as arsenate of lead. Brands of this poison that do no harm to the leaves are now on the market. It is quicker in its action than arsenate of lead and somewhat cheaper. Applied as a dust it may be mixed, one part to nine with hydrated lime. Arsenate of lead is used as a dust without adding lime.