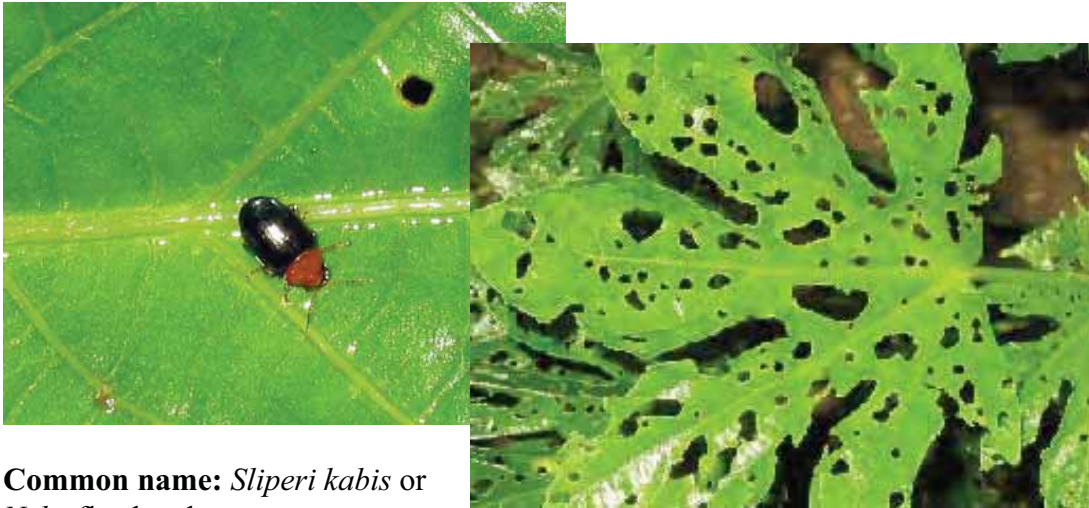


## Extension Fact Sheet 22: *Sliperi kabis* Flea Beetle



**Common name:** *Sliperi kabis* or Neka flea beetle

**Scientific name:** *Nisotra basselae*

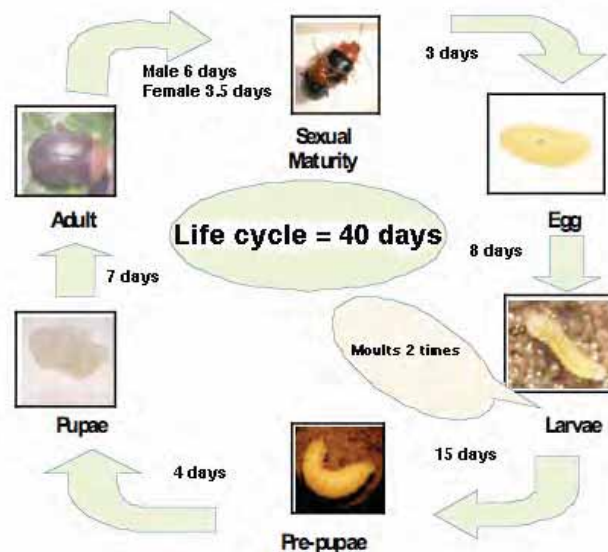
**Hosts:** *Sliperi kabis* (*Abelmoschus manihot*), possibly *Hibiscus tilaceous* (under lab conditions, but not seen in the field); not on *Sida*, nor the garden hibiscus, *Hibiscus rosa-sinensis*.

### Damage

Adult beetles feed on leaves creating many, small (5 mm diameter) holes (photo, right). The damage is so severe that in many places in Solomon Islands people have stopped growing *sliperi kabis*. The larvae feed on small roots, especially the tiny root hairs. Whether this affects the growth of the plant is unknown.

### Biology and Life Cycle

Eggs are laid singly or in small batches just below the surface of the soil. They hatch after 8-9 days. The larvae remain in the soil for 12-18 days, feeding on small roots. They moult twice before they pupate. After pupating for 4-6 days, adults emerge from the soil. Males emerge first, taking 6-8 days to become sexually mature; females take 3-5 days. The adults disperse by walking, jumping and flying. They may drop to the ground if disturbed.



The number of generations per year is unknown. Research into the biology of the beetle is being done in Solomon Islands.

## **Detection and inspection**

Look for small holes in the leaves and the presence of beetles. The adult beetles are about 4 mm long and can be found on both sides of the leaves. The head and part of the section below are orange/brown (photo, left). The wing cases are black. The beetles are less obvious during the hotter times of the day, when they move under the leaves.

## **Management**

### **Quarantine:**

Temotu, and Rennell and Bellona Provinces are free from of the beetle. Therefore, no leaves of *sliperi kabis* or other parts of the plants should be taken there. Extension services should constantly remind people of this, with messages on the radio.

### **Natural enemies:**

Parasites of the adults include nematode worms and mites. The adults do not seem to be affected by the presence of the fire ant, *Wasmannia auropunctata*. *Nisotra* may be toxic to visual predators, like birds and lizards.

### **Cultural control:**

There are a number of possibilities:

- Plants grown under shade may have fewer beetles; however, too much shade gives poor plant growth;
- Thick mulches of straw, grass or other organic materials (several centimetres thick) may prevent female beetles from laying eggs at the base of the stems;
- There is some evidence that planting in clover reduces infestations;
- Plant *sliperi kabis* far from plants infested with the beetle; the beetles do not fly long distances;
- Plant more *sliperi kabis* in the wet season when beetle numbers are lower;
- Hand pick the beetles when infestations have just started; this will delay beetle populations reaching damaging numbers later;
- Cultivate the soil at the base of the plants to expose eggs, larvae and pupae to the sun and predators.

### **Chemical control:**

- Orthene (acephate) is often used in Solomon Islands; other insecticides, such as synthetic pyrethroids are likely to be effective and safer to use.
- Lambda cyhalothrin and permethrin are available in Honiara. Before these chemicals are used, farmers should read the instructions on their safe use.
- A variety of *Derris*, brought many years ago from Papua New Guinea, is effective as a spray. It contains rotenone, an insecticide. Plants are being multiplied by MAL and KGA for evaluation by growers. Contact those organisations for plants to test.