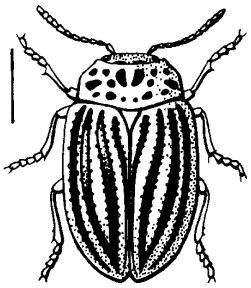
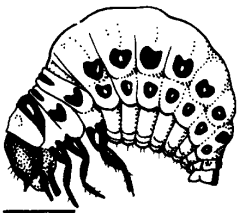
COLORADO POTATO BEETLE Coleoptera: Chrysomelidae

Lepitinotarsa decemlineata

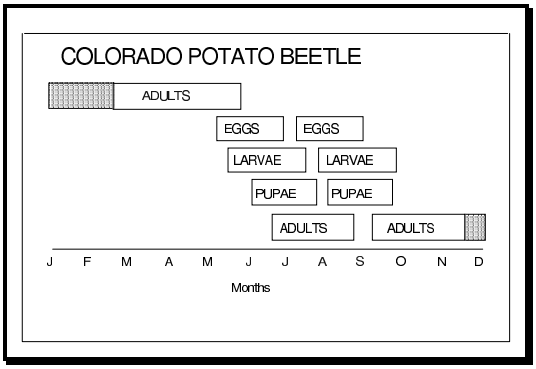
DESCRIPTION

Adults are oval, strongly convex beetles with hard wing covers marked with black and yellow stripes running lengthwise along their back. They are about 12 mm long and 6 mm wide. **Larvae** are dark red when young, but become orange as they near maturity. They have two conspicuous rows of black spots along the sides of the body and are about the same size as the adults when mature. **Eggs** are bright orange-yellow and are deposited in clusters on the undersides of potato leaves.





(after USDA Bull. 1371)



ECONOMIC IMPORTANCE

The Colorado potato beetle is one of the most widespread and destructive potato insects in the world. Until recently, Colorado potato beetle has not been as serious in the northwest, primarily because infestations were controlled with insecticides used to control other potato pests. Now, however, it is among the most serious potato pests in the west. Adults and larvae feed on the foliage and will consume nearly all the leaves in heavy infestations. This pest also spreads several potato diseases, including brown rot, spindle tuber, and bacterial ring rot.

DISTRUBTION AND LIFE HISTORY

The Colorado potato beetle occurs throughout the United States and Canada. This pests overwinters as an adult in the soil (25 to 30 cm deep) in diapause, and emerges in late April and May to lay eggs. Adults lay orange-yellow eggs in masses of 10 to 30 on the undersides of the leaves. Eggs hatch in seven to 10 days and the larvae begin feeding on the undersides of the leaves. Larvae mature in two to three weeks, drop to the soil and enter cracks to pupate. Adults emerge in 5 to 10 days, mate, and deposit eggs as before. Larvae of the second generation mature and pupate in the soil. Adults from this generation form the overwintering stage in the soil.

MANAGEMENT AND CONTROL

Some insecticides used to control other potato pests feeding on foliage also may control Colorado potato beetle. However, the Colorado potato beetle has become resistant to most registered insecticides in the northeastern U. S. and will likely become resistant in the west as well. Insecticides applied early in the spring may reduce damage caused by larvae of the first generation, and if properly timed may help reduce the likelihood of a heavy infestation during the second generation. However, in the future, the availability of registered insecticides to control Colorado potato beetle may be limited and other management tactics will have to used. Several predators may be important in reducing eggs and small larvae, i. e., spiders, *Perillus bioculatus* (a predacious pentatomid), and a tachnid parasite, *Doryphorophaga doryphorae*. Also, the use of transgenic potatoes that produce a toxin (delta-endotoxin from *Bacillus thuringiensis* subsp. *tenebrionis*) is an important alternative tactic for the management of Colorado potato beetle adults.