Harmful insects stunt, defoliate, and kill alfalfa (*Medicago sativa* L.) plants. Forage and seed losses from insects approximate $250 million annually in the USA. More than 100 species have been recorded as injurious. Recent damage and distribution maps for those important in the USA (66) and their descriptions (see Chapter 22 in this book) are available.

Resistant alfalfa cultivars, when available, provide protection from damage where temperatures keep parasites and predators inactive or prevent the application of insecticides. They contribute to the establishment and maintenance of stands and to forage yields and quality. When large acreages are involved, even the slightest resistance expressed as reduced damage or increased tolerance leads to immense savings. However, resistant cultivars are not a panacea for all pest problems (250). They often may be most effective in integrated control systems that combine cultural, chemical, and biological methods. The entire topic of breeding plants for insect control was recently reviewed (202).

No deleterious effects on forage quality have been found in resistant alfalfa cultivars. Chemical constituents important in animal nutrition, such as protein, carotene, and digestible dry matter, were similar for uninfested cultivars that were characterized as either susceptible or resistant to the pea aphid (*Acyrthosiphon pisum* Harris) and the spotted alfalfa aphid (*Theroiaphis maculata* Buckton) (156, 164). Neither digestibility coefficients of the forage nor performance of yearling Holsteins (*Bos taurus* L.) varied significantly when cultivars differing in reaction to the alfalfa weevil (*Hypera postica* Gyllenhal) were compared under weevil infested conditions (9). Also, no toxic compounds were identified in the exudate of glandular-haired *Medicago* spp. that appear to be good sources of resistance to alfalfa insects (335). Total digestibilities and crude