

Insect Pests of Beans & Peas in New England

Alan Eaton

University of New Hampshire Cooperative Extension
252 Spaulding Hall, UNH, Durham NH 03824

My comments here are heavily influenced by my experiences in New Hampshire, but I've included information from southern New England as well. To me, the main message is that insect problems aren't common here on beans and peas. I have listed them in order of significance:

Potato leafhopper is a sporadic pest. It doesn't overwinter in New England. It re-invades New England every summer, by being blown in from the south. We usually find our first ones (adults of course) in June, sometimes July. They are yellow-green in color, and quickly fly when disturbed. In most situations, any yellow-green leafhopper you find on beans in summer is probably this one. You can confirm identification by the fact that the leafhoppers have a series of white lines on and just behind the top of the head. You'll need slight magnification to see this. This insect has piercing-sucking mouthparts, and it injects toxic saliva when it feeds. Leaves that have been attacked quickly turn yellow at the edges. The yellow spreads and eventually the leaf edges die.

In some years this is a problem, but others it is a no-show in New Hampshire. I've never seen damage on peas, but I have on bean, cantaloupe, potato, eggplant, alfalfa, basil, raspberry, apple, and dahlia. If they number more than one per leaflet on bean (yes, you should count), it may be helpful to apply an insecticide. The New England Vegetable Pest Management Guide lists insecticides. The most important area to hit is the **UNDERSIDES** of the leaves.

Seed corn maggot is a sporadic pest problem. It is worst in cool, wet springs, on soils with heavy application of manure. The flies lay eggs in early spring, and the maggots tunnel into the seeds of bean, peas, corn and squash (occasionally others). If soil temperatures are warm, the plants quickly emerge and have little damage. If temperatures are cool, the maggots beat the plants and kill many germinating seeds. The best defense is to select soils that warm up early for early planted crops, and avoid heavy application of manure on fields for early planting. If you could control the weather, that would help.

Corn earworm Earworm can be a pest of beans when earworm moths are abundant, and there are young fruit. The larvae feed on the fruit, not the leaves. They can also hit soybean and tomato. This is an occasional problem in late July or August. Except in highly unusual situations where the soil doesn't freeze, earworms don't survive New England winters. They re-invade from the south, at times that are difficult to predict. There are traps that will help you tell if they are a problem on your farm. I can't find published thresholds for New England states, but south of us, typical thresholds are 20 to 30 earworm moths per night in a plastic mesh corn earworm trap. **Fall armyworm** also sometimes damages beans, when populations are high. It feeds on foliage as well as the fruit.

Mexican bean beetle is a significant pest farther south, but here it is mainly a backyard problem. It is uncommon, and many growers don't recognize it when I show specimens. The insects overwinter as adults, protected by leaf litter or similar debris. They might appear in your beans as early as June. (No, not on peas.) Adults are yellow to coppery brown, with 16 black spots on their backs. They are members of the ladybug family. The soft-bodied yellow spiny

larvae are distinctive, and they skeletonize the leaves, just as the adults do. Rotation helps keep them under control. If defoliation exceeds 10% during podding (or 20% pre bloom), you might consider applying a pesticide. Really look at the leaves — 20% loss of leaf area is a lot, but that really is the suggested threshold here. The plants can often withstand more injury than the farmers.

Aphids seem to be listed in lots of pesticide guides, but I don't really see them as problems here on peas and beans. If you are too "trigger happy" with pesticides, you can create aphid problems, by killing off the aphid predators and parasites.

Others Asiatic garden beetle larvae have been seen attacking peas (roots) in CT and VT. They are typical white grubs; soft bodied, C-shaped whitish larvae with obvious legs. Adults of this insect feed on the foliage (of many things) at night. Larvae of gray hairstreak butterfly sometimes damage peas. The velvety, green caterpillars chew leaves and bore into the fruit. They are more of a curiosity than a problem. Green cloverworm also feeds on foliage of bean and pea. The caterpillars are abundant in soybean fields in the south, but I've never seen them here on bean or pea. Springtails were a problem for some southern New England bean growers this year (2003). With so much rain in June, springtail numbers were really high, especially on silty soils. European corn borer sometimes bores through stems and fruit of bean. This seems more likely the farther south you travel. Twospotted spider mites occasionally cause problems on beans, but I have seen this only in a greenhouse situation. Tarnished plant bug is listed in the New England Vegetable Pest Management Guide, but I have never seen a problem from TPB on beans or peas. Apparently problems are most likely on lima bean. Buds and young, developing fruit are most likely targets. Nymphs do more injury than adults.

Pesticides:

Please rely on the current New England Vegetable Management Guide. Old versions are outdated! As I write this, the new (2004-5) version is not available, but it should be by the time you read this in the meeting proceedings. Since pesticide labels are constantly being changed, amended or withdrawn, your pest management specialists from Cooperative Extension will help keep you apprized of updates and changes. You can look at most agricultural pesticide labels online at the crop data management system website <http://www.cdms.net> A few pesticide companies do not belong to the sponsoring group, so their products are missing. If you look at labels online, remember that there can be more than one current label (with different pests) for a particular formulation of pesticide, so you may need to check several before finding what you wanted to know. Sometimes this happens because products with the same active ingredient were developed by rival companies, but are now owned by the same company.

Beans and peas are not mega-bucks commodities in the US, so there are fewer pesticides registered for these crops, compared to cotton, corn, citrus and apples. Some recent additions and/or expansions of info in the 2002-3 New England Vegetable Management Guide are:

Organic growers: Surround is listed to **suppress** leafhopper and Mexican bean beetle numbers. Even coverage is essential with surround. Entrust (OMRI certified) has the same active ingredient as Spintor. It is listed for European corn borer, corn earworm, and armyworms (Yes, I'd interpret that to include fall armyworm). There are several formulations of *Bacillus thuringiensis* that have very broadly worded labels that include peas and beans. Dipel and Deliver are just two examples. You'll see earworm, European corn borer, and possibly fall armyworm listed, among other caterpillars. In my experience, earworm is one of the tougher

ones to kill with *Bt* products.

Non-organic products: Baythroid 2E is listed for some insects on **dry** peas. (Anyone grow those?) Mustang 1.5E is registered for beans and peas. Target pests include aphids, European corn borer, corn earworm, and Mexican bean beetle. Provado 1.6F is listed on both beans and peas, for leafhoppers and aphids. Spintor 2SC is listed on beans and peas for the same insects as Entrust (ECB, CEW, armyworms). Warrior w/Zeon technology is listed for both beans and peas. Pests listed on the label include aphids, corn earworm, fall armyworm, European corn borer, green cloverworm, Mexican bean beetle and leafhoppers.

There are many insect growth regulators on the market, and sooner or later some will be registered for insects of beans and peas. Remember that they are effective on the immature stages only, so if adults are causing your problem, IGR's won't be good alternatives.

I hope this review is helpful. Beans and peas aren't very heavily hit by insects in New England, so don't go overboard with spraying (or scouting!).

Alan Eaton October 2003