

University of Delaware Cooperative Extension, Rutgers Cooperative Extension

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PROCESSING LIMA BEAN IPM FIELD GUIDE

Season Prior to Planting Lima Beans:

1. If field has exhibited areas of poor growth obtain soil sample and submit to lab for analysis for nematodes. Collect soil & roots from the edges of the affected areas from a minimum of 10 sites. Combine for a composite sample. Protect sample from high temperatures or freezing temperatures.

Pre-planting Decisions

1. Use a combination of cultural practices to reduce problems from seed corn maggot. (292)*
 - Plow down cover crops 3 – 4 weeks before planting.
 - Completely bury cover crops or previous crop residues to reduce adult fly attraction to rotting organic matter.
 - Reduce use of heavy manure applications and let manure age before incorporation.
 - Use a set of drag chains behind the planter during seeding to reduce the moisture gradient.
2. Use approved soil systemic insecticide at planting if a combination of factors favoring seed corn maggot exists. (292*)
3. Rotate fields with non-legume crops and plow under crop residue to avoid root rot. (292)
4. Select varieties with disease resistance to strains A, B, C, and D for downy mildew control. Use western grown seed and rotate to allow 2 years between bean plantings for control of Anthracnose. (292, 1487)
5. Fertilize and lime according to soil test recommendations. (1584)
6. Use the information obtained from previous season’s weed scouting to select recommended control strategies. (292)

Emergence to Third Trifoliolate

Pest	Damaging & Monitored Stage	Sampling		Threshold	Notes
		Method	Frequency		
Seed Corn Maggot	larva	Examine 10 seeds in various locations for feeding injury. Determine severity of infestation. Record % stand reduction, average plant population. OR Visually scout 100 foot samples & determine % stand.	A week after planting or at plant emergence	Rescue efforts ineffective. 50% stand reduction usually indicates need to replant.	Seedcorn maggot feeding seldom results in detectable aboveground symptoms. If it is necessary to replant, incorporate insecticide prior to planting.
Cutworms (604, 858)	larval	Scout along field edges, near weedy areas or in low lying areas looking for several cut off, wilting or missing plants. Dig around these areas sifting soil. Cutworms hide during the day.	Weekly	None established	If treatment is required, direct sprays at base of plants where cutworms are actively feeding. Increase water to 30 gals/A. Spray between midnight & 5 a.m. Clean up the weedy areas that are preferred egg laying sites. (292)

Emergence to Third Trifoliolate, continued

Pest	Damaging & Monitored Stage	Sampling		Threshold	Notes
		Method	Frequency		
Spider Mites (140)	adult immature	Sample along field borders. Examine 10 leaves in 5-10 locations throughout the field. Look for white stippling near the base of leaves. Count # of live mites/leaf.	Weekly from early July through early August	When white stippling is first noticed & ≥ 20 mites/leaflet.	Rainfall & high humidity help reduce mite development & survival. Rain does not suppress heavy populations under high temperatures.
Mexican Bean Beetle (141, 5)	adult larval	Begin at plant emergence along field margins next to overwintering sites. Record % of stand reduction, estimate % defoliation, count # beetles/ plant	Weekly	Before first trifoliolate: ≥ 6 beetles/row foot + $\leq 75\%$ stand reduction. First to third trifoliolate: ≥ 2 beetles/plant + 20% defoliation	

Prebloom Stage: Third Trifoliolate to Pre-Bud

Pest	Damaging Stage	Monitored Stage	Sampling		Threshold	Notes
			Method	Frequency		
Potato Leafhopper (10, 140)	adult nymph	adult nymph	Use standard 15 inch sweep net, 10 sweeps in 10 locations	weekly	≥ 5 adult + nymph leafhoppers/sweep	Sampling: Calculate # leafhoppers per sweep.
Mexican Bean Beetle (141, 5)	adult larval	adult larval egg	Estimate % defoliation to nearest 10% on 5 plants in 5 - 10 locations. Determine predominant life stage	weekly	$\geq 20\%$ defoliation	Treatment: Wait until hatch or adult emergence when eggs and pupae are present. (292)
Bean Aphid (141)	all	all	Sample 5 terminals in 5 -10 locations. Count # terminals with ≥ 5 aphids per terminal. Check for beneficial insects. (1390)	weekly	$\geq 50\%$ of terminals with ≥ 5 aphids/terminal + aphids found throughout field with few beneficial species.	Aphids are generally found on the lower leaf surfaces and terminal buds.
Green Cloverworm (140)	larval	larval	10 sweeps in 10 locations. Count # larvae per sweep	weekly	$\geq 20\%$ defoliation + ≥ 15 larvae per sweep	Use a standard 15-inch sweep net.

Bud Stage to Harvest

Pest	Damaging Stage	Monitored Stage	Sampling		Threshold	Notes
			Method	Frequency		
Mexican Bean Beetle (5, 141)	adult larval	adult larval egg	Estimate % defoliation on 5 plants in 5-10 locations. Determine predominant life stage.	Weekly	>10% defoliation during podding + potential for further defoliation (increasing population)(292)	Wait until hatch or adult emergence when eggs & pupae are present. (292)
Stinkbug Lygus Bug (381, 68)	adult nymph	adult nymph	Take 10 sweeps in 10 locations throughout the field.	Weekly	>15 adults + nymphs per 50 sweeps	Sampling: should be done in early morning or late afternoon when insects are most active.
Corn Earworm (CEW) (141)	larval	adult larval	Use a 3-ft. drop cloth between 2 rows & shake plants. Sample 10 locations. Count larvae, estimate average larval size.	2X/wk.	≥ 1 larva per 6 ft. of row For more detailed thresholds, consult MD/DE Vegetable Scouting Guide.	CEW more likely to be a problem in June & July planted limas. Treatment: When possible, delay until 1/3 of the larval population has reached 1/2 inch in size. Treating too early will eliminate natural controls & may result in additional sprays.
Fall Armyworm (FAW) (114)	larval	larval	Sample as for Corn Earworm	2X/wk.	Treat when larvae reach 0.5 inch or longer.	FAW more likely to be a problem in June & July planted limas. Treating too early will eliminate natural controls & may result in additional sprays.

Disease	Sampling	Frequency	Threshold	Notes
Bacterial Brown Spot (168)	Scout 5 plants in 5-10 locations. Look for reddish-brown irregular shaped spots on leaves.	Weekly	Presence	Fixed copper is of some value in reducing spread where incidence is low. Troublesome in irrigated fields. (292)
Downy Mildew (168)	Scout fields that are not rotated and planted to susceptible varieties (those lacking resistance to strains A, B, C, and D). Look for white downy mold on pod under humid conditions.	Weekly	Presence	Conditions favorable for disease development: >1.2 inches rain/7 days + average daily temperatures < 78°F (25.6°C). Periods of fog or heavy dew lower amount of rainfall necessary for infection. If a period of 90°F occurs, the cycle is broken and an additional 7 day period with the above weather conditions is necessary to start infection. (292)

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***Bolded numbers in parenthesis indicate sources of additional information found in the Mid-Atlantic IPM Database by this special reference number.**

Scouting procedures, thresholds, and crop management recommendations have been compiled from a number of sources and may not be valid for all areas within the Mid-Atlantic Region. They are meant to be used as guidelines. As such, they should be validated on small acreages before relying on them. No guarantee of their validity, success, or failure to perform in the field is implied or expressed. Consult your local Cooperative Extension Agent for additional information or assistance.