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Dry Beans Year-Round IPM Program
Annual Checklist

Supplement to UC IPM Pest Management Guidelines: Dry Beans

These practices are recommended for a monitoring-based IPM program that reduces environmental quality problems related to pesticide use. Track your progress through the year using this form.

Water quality becomes impaired when pesticides move off-site and into water. Air quality becomes impaired when volatile organic compounds move into the atmosphere. Each time a pesticide application is considered, review the Pesticide Application Checklist at the bottom of this form for information on how to minimize environmental quality problems. This program covers the major pests of blackeye, common, and lima beans in the Central Valley. Details on carrying out each practice, information on additional pests, and additional copies of this form are available from the UC IPM Pest Management Guidelines: Dry Beans at http://www.ipm.ucdavis.edu/PMG.

✓ Done	**Preplant** **Mitigate pesticide usage to minimize air and water contamination.**
	Survey weeds in the current crop. ▪ Record your results. Manage weeds before planting within and adjacent to the field.
	Select field considering: ▪ Pest history (including current crop): o Weeds o Diseases o Insects o Nematodes ▪ Surrounding crops and vegetation. ▪ Soil conditions and water quality. ▪ Crop rotation.
	Select the cultivar. Consider treated seed for fields with a history of: ▪ Seedling diseases (*Pythium* and *Rhizoctonia* spp.) ▪ Seedcorn maggots ▪ Wireworm
	Calculate nitrogen budget and inoculate seed with appropriate *Rhizobium* bacteria.
	Prepare the field for planting, including laser leveling to correct drainage and runoff problems as needed.

✓ Done	**Planting to stand establishment** **Mitigate pesticide usage to minimize air and water contamination.**
	Consider seed handling and planting techniques that: ▪ Reduce cracking and splitting of seeds. ▪ Ensure appropriate planting depth, maximizing germination rate and reducing risk of seedling diseases.
	Inspect seedlings for damage. Manage if needed according to the PMGs.
	Manage irrigation.
	Survey weeds 4 weeks after planting. ▪ Record results. Cultivate beans to remove weeds, as necessary.
	Calculate nitrogen budget.

✓ Done	**Vegetative growth to flower bud** **Mitigate pesticide usage to minimize air and water contamination.**
	Look for pests or their damage on a weekly basis. Manage if needed according to the PMGs.

✓ Done	**Flower bud through bloom** **Mitigate pesticide usage to minimize air and water contamination.**
	Start sweep net sampling for lygus bugs at the early flower bud stage. ▪ Check fields twice weekly. Record results.
	While sweeping for lygus bugs, look for other pests or damage on a weekly basis. Manage if needed according to PMG.

✓ Done	**Pod fill** **Mitigate pesticide usage to minimize air and water contamination.**
	Continue sweep net sampling for lygus bugs. ▪ Record results. Manage if needed according to PMG.
	Continue looking for pests or their damage on a weekly basis. Manage if needed according to PMG.
	Survey weeds before harvest. ▪ Keep records. Remove nightshade plants if necessary.

✓ Done	**Harvest** **Mitigate pesticide usage to minimize air and water contamination.**
	Adjust combine to reduce mechanical damage and bean loss.
	Exercise care when threshing to ensure moisture content of seed below 15%.

✓ Done	**Postharvest** **Mitigate pesticide usage to minimize air and water contamination.**
	Carry out sanitation practices in the field to reduce the spread of: ▪ Weeds ▪ Diseases ▪ Nematodes ▪ Insects

✓ Done	****Pesticide application checklist**
	When planning for possible pesticide applications in an IPM program, review and complete this checklist to consider practices that minimize environmental and efficacy problems. ✓ Choose a pesticide from the UC IPM Pest Management Guidelines for the target pest considering: ▪ Impact on natural enemies and honeybees. ▪ Potential for water quality problems using the UC IPM WaterTox database (For more information, see http://www.ipm.ucdavis.edu/TOX/simplewatertox.html.) and impact on aquatic invertebrates (For more information, see *Pesticide Choice,* UC ANR Publication 8161, http://anrcatalog.ucdavis.edu/pdf/8161.pdf.). ▪ Chemical mode of action if pesticide resistance is an issue. ✓ Consider water management practices that reduce pesticide movement off-site. (For more information, see UC ANR Publication 8214, *Reducing Runoff from Irrigated Lands: Causes and Management of Runoff from Surface Irrigation in Orchards,* http://anrcatalog.ucdavis.edu/pdf/8214.pdf.) ▪ Choose sprayers and application procedures that keep pesticides on target. ▪ Identify and take special care to protect sensitive areas (for example, waterways or riparian areas) surrounding your application site. ▪ Review and follow label for pesticide handling, storage, and disposal guidelines. ▪ Check and follow restricted entry intervals (REI) and preharvest intervals (PHI). ▪ After an application is made, record application date, product used, rate, and location of application. Follow up to confirm that treatment was effective. ▪ Install an irrigation recirculation or storage and tail water return system. (For more information, see UC ANR Publication 8225, *Reducing Runoff from Irrigated Lands: Tailwater Return Systems,* http://anrcatalog.ucdavis.edu/pdf/8225.pdf. ▪ Limit irrigation to amount required using soil moisture monitoring and evapotranspiration (ET). ▪ Consider vegetative filter strips or ditches. (For more information, see *Vegetative Filter Strips*, UC ANR Publication 8195, http://anrcatalog.ucdavis.edu/pdf/8195.pdf.) ▪ Install sediment traps. ▪ Use polyacrylamide (PAM) tablets in furrows to prevent off-site movement of sediments. ▪ Redesign inlets and outlets into tailwater ditches to reduce erosion. ✓ Consider management practices that reduce air quality problems. ▪ When possible, choose pesticides that are not in emulsifiable concentrate (EC) form which release volatile organic compounds (VOCs). VOCs react with sunlight to form ozone, a major air pollutant.