Martin-Gatton
College of Agriculture, Food and Environment
Cooperative Extension Service

Plant Pathology Fact Sheet **PPFS-VG-42**

Cultural Calendar for Commercial Production of Beans

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Introduction

Integrated pest management (IPM) includes the combination of biological, cultural, physical, and chemical tools in efforts to manage diseases and pests while minimizing risks associated with pesticides. Cultural practices are an integral part of an IPM program and should be incorporated into all commercial systems whether large or small, conventional or organic. This publication provides recommended practices at approximate growth stages and / or production periods. However, these timelines are approximate and may require adjustment for particular conditions. Growers who encounter situations that may not align with suggestions here should contact their county Extension office for assistance. Extension offices can also provide updated pest management recommendations. This cultural guide serves as a supplement to published spray guides and scouting guides.

Green beans in field production.

Beans in Field Production

Time of Year[1]	Growth Stage	Target Organism	Cultural Management
March-April	**Field preparation**	**Plant health**	Assure good drainage; Raise beds; Install drip irrigation; Deep till when soils are warm; Avoid tilling wet soils.
		Diseases	Avoid planting related crops in the same field for at least 3 years; Use wide spacing for air circulation; Use mulch to reduce soil contact.
		Insects • Cutworms	Prepare soil and eliminate weed hosts two to three weeks prior to transplanting.

[1] The growth stage indicated typically occurs during this time of year; however, this may vary from year to year depending on environmental conditions.

Beans in Field Production

Time of Year[1]	Growth Stage	Target Organism	Cultural Management
March-April *(cont'd)*	**Field preparation** *(cont'd)*	**Weeds**	Created a stale seed bed through use of solarization, application of silage mat, or burndown herbicide; Plant a cover crop such as buckwheat to suppress early season weeds; Use organic or plastic mulch under plants; For no-till systems, terminate and till-in cover crops before planting; Plant through residue.
		Wildlife	Manage weeds to reduce rodent habitats; Scout for voles and treat as needed; Check and repair wildlife exclosures; Attract predators; Install raptor perches; Protect predators like coyotes; Remove any brush piles or weedy/woody cover near cultivation areas; Manage weeds around electric fences to prevent grounding.
May-June	**Direct seeding**	**Diseases** • Anthracnose • Pythium root rot • Rhizoctonia root rot	Plant resistant cultivars; Plant certified seed or opt for fungicide treated seed when possible; Bleach treat saved seed; Avoid planting related crops in the same field for at least 3 years; Plant into warm soils; Avoid planting in excessively wet soils; Use wide spacing for air circulation; Maintain good drainage; Remove and destroy diseased plants.
		Insects • Black cutworm • Seedcorn maggot • White grubs • Snails and slugs • Wireworms	Avoid planting into areas previously in sod or grasses; Plant when soil temperatures promote rapid germination and seedling growth; Prepare soil at least two weeks before planting. Scout for slugs and snails under clods and debris.
		Weeds	Use organic or plastic mulch under plants; Control weeds between rows with cultivation or mowing; For no-till systems, terminate and till-in cover crops before planting and plant through residue.
		Wildlife	Manage weeds to reduce rodent habitats; Scout for voles and treat as needed; Check and repair wildlife exclosures; Attract predators; Install raptor perches; Protect predators like coyotes; Manage weeds around electric fences to prevent grounding.
June	**Vegetative growth**	**Diseases** • Angular leaf spot • Bacterial brown spot • Pythium cottony blight • Pythium root rot	Remove infected plants and plant tissues; Do not compost diseased material; Manage weeds; Trellis plants (if applicable) to increase air circulation; Use mulch to reduce soil contact; Clean and sanitize tools and equipment after use.
		• Viruses	Manage insect vectors.
		Insects • Bean leaf beetle • Grasshoppers • Japanese beetle • Mexican bean beetle • Potato leafhopper • Spider mites	Protect plants with row covers; Monitor insect pests weekly by checking undersides of leaves and buds and determine need for control based on scouting results; Keep records.

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Beans in Field Production

Time of Year[1]	Growth Stage	Target Organism	Cultural Management
June *(cont'd)*	**Vegetative growth** *(cont'd)*	**Weeds**	Control weeds with cultivation and/or low mowing between rows; Teff can be used as a cover crop between rows.
		Wildlife	Check exclosures frequently and repair as needed; Mow grass and/or remove brush piles and grassy areas near cultivated sites to reduce rodent habitat; Manage weeds around electric fences to prevent grounding.
July-October	**Flowering & fruiting**	**Plant health**	Irrigate to prevent drought stress.
		Diseases • Angular leaf spot • Ashy stem blight • Cercospora leaf spot • Common bacterial blight • Phyllosticta leaf spot • Rhizoctonia web blight • Southern blight	Remove infected pods and diseased plant tissues; Do not compost diseased material; Manage weeds; Use mulch to reduce soil contact; Clean and sanitize tools and equipment after use.
		• Viruses	Manage insect vectors (Bean leaf beetle, winged aphids).
		Insects • Bean leaf beetle • Stink bugs • Grasshoppers • Japanese beetle • Mexican bean beetle • Potato leafhopper • Spider mites	Protect small plants with row covers by resetting row covers and closing ends; Monitor insects pests weekly, checking undersides of leaves (Mexican bean beetle) and determine need for control based on scouting results; Hand pick and remove individual insects when populations are low; Keep records.
		Weeds	Control weeds with cultivation and/or low mowing between rows.
		Wildlife	Check exclosures frequently and repair as needed; Mow grass and/or remove brush piles and grassy areas near cultivated sites to reduce rodent habitat; Manage weeds around electric fences to prevent grounding.
October	**End of season**	**Diseases** • Angular leaf spot • Anthracnose • Ashy stem blight • Bacterial brown spot • Cercospora leaf spot • Common bacterial blight • Phyllosticta leaf spot • Pythium cottony blight • Rhizoctonia web blight • Southern blight • Viruses	Gather all remaining plants and plant tissues and destroy; Do not compost diseased material; Deep till to encourage decomposition; Do not save seed from infected fruit; Clean and sanitize tools and equipment; Clean and sanitize stakes, irrigation lines, and weed mats or discard those that cannot be sanitized.
		Weeds	Plant a cover crop to suppress winter annuals and early spring weeds (timing may vary).

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Time of Year[1]	Growth Stage	Target Organism	Cultural Management
October *(cont'd)*	**End of season** ***(cont'd)***	**Wildlife**	Check future cultivation locations for rodent presence; Treat voles where needed at this time; Promote deer hunting on the property if deer are overpopulated/causing damage, focus on adult female deer removal and donate meat to Hunters for the Hungry if needed; Remove raptor perches temporarily if any rodenticides are used and replace perches four weeks after treatment ends; If raccoons, squirrels, or groundhogs are causing issues, encourage hunting or trapping on the property to lower populations, continue this effort through the fall and early winter as currently those hunting and trapping seasons are open well into mid-winter.

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Additional Resources

Additional information can be found at the following University of Kentucky websites

- Department of Horticulture https://horticulture.ca.uky.edu/
- Department of Entomology https://entomology.ca.uky.edu/
- Department of Forestry https://forestry.ca.uky.edu/
- Department of Plant Pathology https://plantpathology.ca.uky.edu/extension/publications

These resources can be found on the Department of Plant Pathology website

- IPM Scouting Guide for Common Problems of Legume Vegetables in Kentucky (ID-227)
- Vegetable Production Guide for Commercial Growers (ID-36)
- Southeastern U.S. Vegetable Crop Handbook (SEVEW)

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