

Beans (Snap)

Cultivars

Contact Manitoba Agriculture and Food's Vegetable Specialist for variety recommendations.

Seed Treatment

Seed treatment is recommended for seed decay and seedling blight damping off. See fungicide section in the *Guide to Vegetable Crop Protection 2003* for control recommendations.

Seeding and Spacing

Place seeds about 1 1/2 to 2 inch (3.8 to 5 cm) deep. Space rows 24 to 38 inches (60 to 96 cm) apart, according to equipment available. A population of six to eight plants/ft (20 to 26 plants/m) in the row is desirable. Use 60 to 80 lb/acre seed. Beans germinate best between 15° to 29°C. Temperatures below 15°C may produce seed decay which can reduce stand.

Note: Dark coloured seeds have better cold soil emergence.

Fertilizer

Refer to Tables 1 through 9 for this crop. For general recommendations in the absence of a soil test, refer to Table 10 in the fertility section.

Beans are very sensitive to boron toxicity and should not be grown the year after boron has been

applied to previous crops such as cole crops, celery or rutabaga.

Manganese deficiency may be a problem on beans, especially on soils with pH values above 6.5. Correct the deficiency as soon as detected with a foliar manganese spray. Soil application is not recommended for manganese because of the large amounts required.

Irrigation

Moisture requirements are most critical from the bud stage to harvest. The crop requires 1 to 1-1/2 inch (2.5 to 3.8 cm) moisture/week during this period for maximum yields.

Pest Management

Diseases

Pythium Damping-Off and Phytophthora Root Rot

Use fungicide-treated seed to minimize damping off. Rotate beans with non-leguminous crops and ensure good drainage in the field. Root rots are most likely to occur during periods of warm, wet weather.

Anthracnose and Bacterial Blight

Western U.S. is the best source of anthracnose

and blight-free seed. Rotate fields away from all types of beans and peas for at least three years.

Viruses: Common Mosaic, Bean Yellow Mosaic and Cucumber Mosaic

These viruses are spread by aphids. Common mosaic is also seed-borne. Yellow mosaic overwinters in forage legumes and sweet clover. Avoid planting beans adjacent to hayfields.

Control of aphids will not usually prevent the spread of these viruses. Resistant varieties are the best means of control. Consult with your seed supplier for a list of suitable varieties.

Sclerotinia White Mold, Botrytis Grey Mold

Well-drained soils with good air circulation are less susceptible to these diseases. Avoid rotations with other susceptible crops including potatoes, tomatoes, lettuce and cabbage. Favourable conditions for disease development include cool temperatures and continuous soil wetness for 6 – 10 days prior to bloom.

All sprays must penetrate the crop canopy and contact blossom petals. Use of drop nozzles, overhead nozzles and high pressure nozzles give the best results. Applications made after bloom are not effective. If wet weather persists, a second spray during bloom will be beneficial.

Alternaria Pod Spot

Alternaria pod spot causes rust-coloured flecks on mature pods. It tends to be more prevalent during late summer. Yellow wax beans and some varieties of green beans such as Strike are very susceptible.

Insects

Seedcorn Maggot, Wireworm and Seed Decay

Plant seed no deeper than 1.5 inch (4 cm) to promote rapid germination. Fresh manure and rotting

organic matter attract seedcorn maggot flies in the early spring. Incorporate manure promptly to discourage egg-laying. Wireworms are most likely to be a problem for the first two years following sod.

Leafhoppers

Leafhoppers generally spend the early part of the season in hay fields. They will migrate into beans at first cut. Feeding damage (hopperburn) is often confused with drought stress. Plants are most susceptible to leafhopper damage prior to bloom. Low levels of hopper feeding on emerging seedlings can have a severe impact on yield.

Keep a close eye on beans located close to hay fields. A spray is warranted if there are more than two adults per foot of row at the seedling stage. For later growth stages, the threshold is five adults per foot of row.

Aphids and Spider Mite

If crop monitoring indicates, spray with a recommended pesticide

Tarnished Plant Bug

This pest may damage flowers and fruit leading to flower abortion and/or pin-point lesions on leaves.

Weeds

Competition from weeds can reduce yield and also make harvesting more difficult. For recommended herbicides refer to the *Guide to Vegetable Crop Protection 2003*.