



Small-Scale Dry Bean Production

by

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**Black River Beans/River Moon Farm
Craftsbury Common, Vermont**



From an account on Abenaki agriculture along the Saco River in Maine:

**“Amongst this corn, they plant in each hillock,
Brazillian beans which come up of different colors.”**

– *French explorer Samuel Champlain in
Les Voyages de Sieur de Champlain, 1613*

General Planting Guidelines

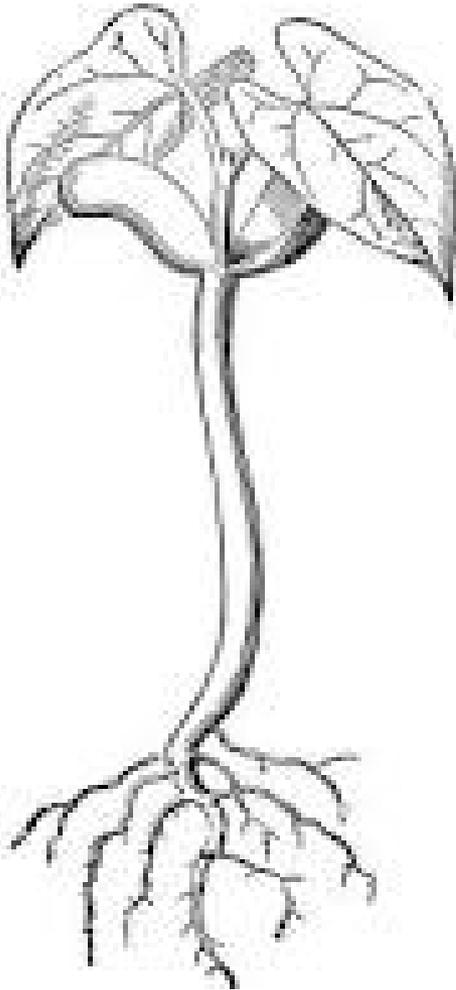


- Plant in Well-Drained Soil
- Soil Temperature (50 deg. +)
Generally Early – Mid June
- Good, Clean Seed
- Planting Depth = 1 ½ - 2 in.
- 4-6 Seeds per Foot
- Varying Models on Row Spacing from 15-30 in.
Equipment and Cultivation Methods can drive the spacing decision.

Bean Varieties Grown in Vermont

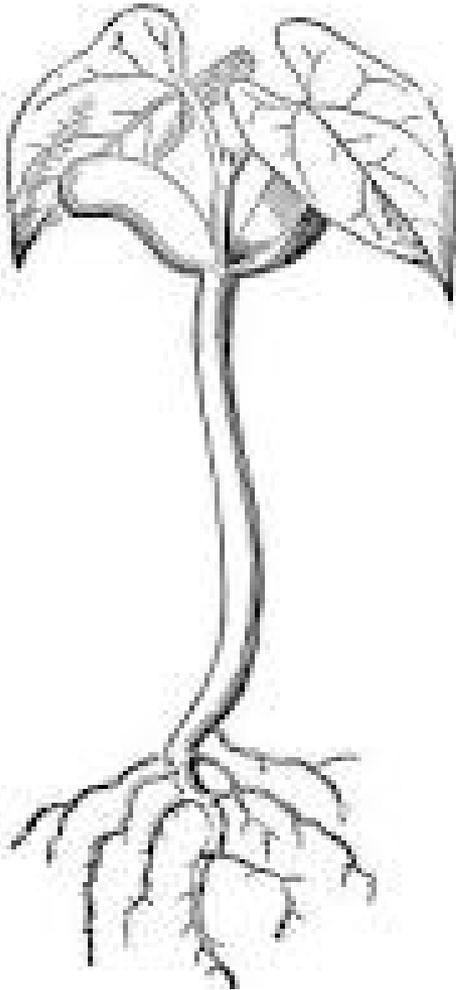
- Black Turtle
- Vt. Cranberry
- Jacob's Cattle
- Yellow-Eye
- Soldier
- Marfax
- Cannellini
- Calypso
- Pinto
- Kidney
- Small Red
- Hutterite

Fertility



- Beans, like all legumes, are Nitrogen-Fixers but.....
 - Soil deficient in nitrogen-fixing bacteria will limit plant's ability to convert N for growth
 - 20-50% of N used by plant is supplied by nitrogen-fixing nodules on plant's roots
 - Nitrogen fixation from nodules does not contribute to plant's N needs until 3-4 weeks
- **SO THE REST OF THE NITROGEN COMES FROM ADDED FERTILITY SOURCES**

Starter Fertilizer



In organic production:

Manures and other slow-release nutrient materials provide added fertility

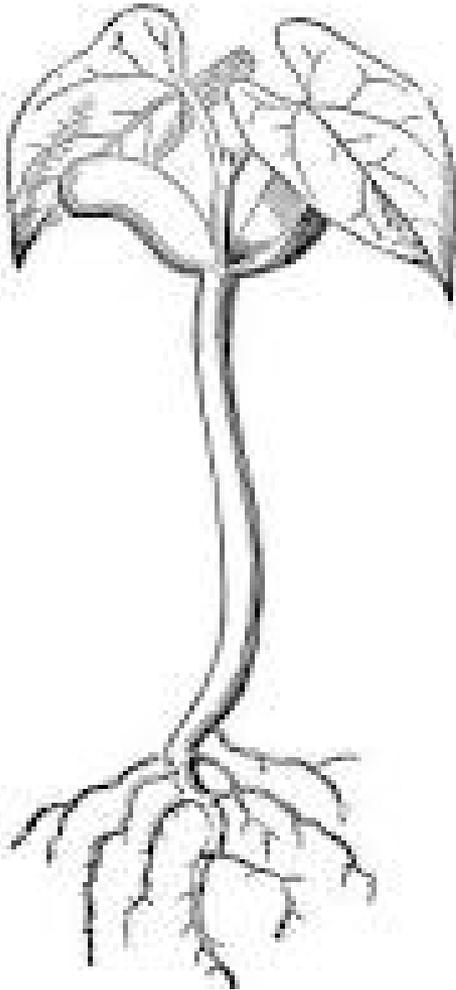
3-5 Tons per Acre

Consider using a small amount of organic starter fertilizer during planting

- 15 LB/Acre N

- Equal to 300 Lbs of 5-4-3 /Acre

Innoculants



Powdered Innoculants the most common form.

Rhizobium phaseoli

Brush sweep can knock off powdery innoculum.



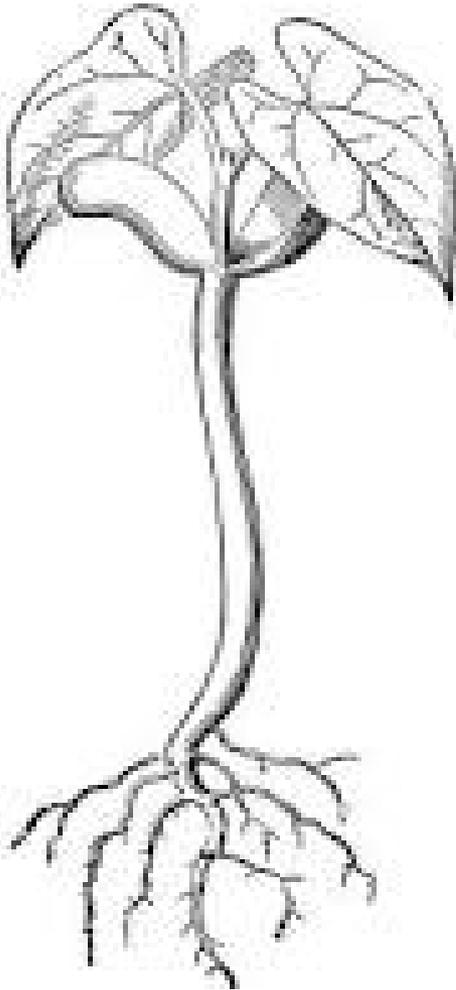
- Slurry sticky solution with 10% Honey, Agave or table sugar and water.



OUR FIRST BEANS !

ALSO, OUR FIRST WEEDS!

Integrated Weed Management

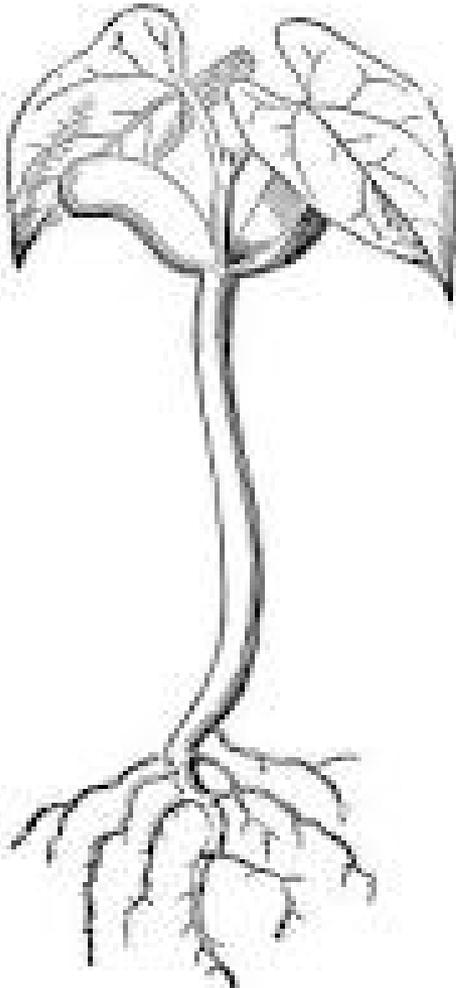


- **Weed Management before Planting** – shallow bed tillage 1-2” to temporarily control annual weeds and leave surface dry to slow down weed seed germination
- **Weed Management after Planting** – At the third to fourth trifoliate leaf stage, cultivate with sweeps, knives, or rolling cultivators
- **Dry bean cultivar and row spacing** are important factors in determining the amount of late-season weed pressure. Goal is to close the canopy while still allowing for good air circulation to dry leaves.

Closing the Canopy



Major Bean Diseases for NE



Cool, Wet Weather Diseases (70 deg)

- Halo Blight (*Pseudomonas phaseolicola*)
- Anthracnose
- White Mold

Warm Wet Weather Diseases (80 deg)

- Common Bean Blight (*Xanthomonas spp.*)
- Fuscous Blight
- Bacterial brown spot, caused by *Pseudomonas syringae* pv. *syringae*, common bacterial blight

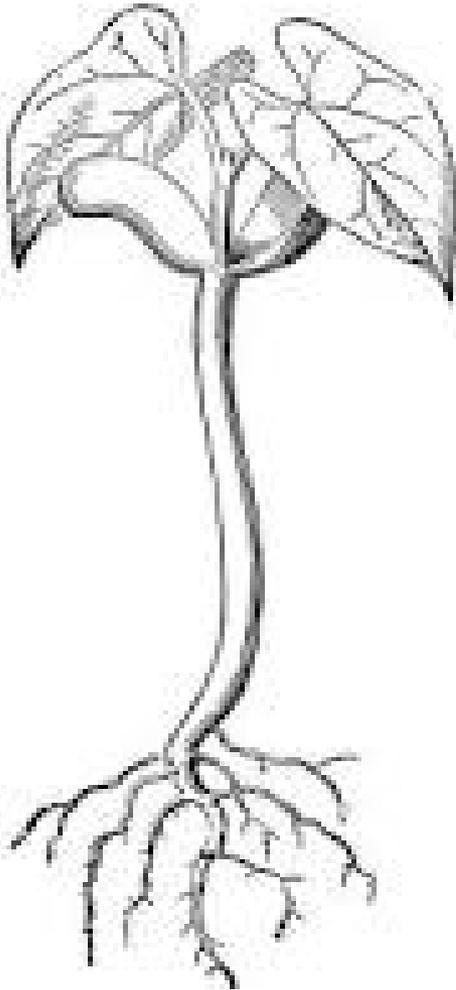
- Excellent Reference:

Handbook of Bean Diseases

by D.J. Hagedorn, D. A. Inglis

<http://learningstore.uwex.edu/assets/pdfs/A3374.PDF>

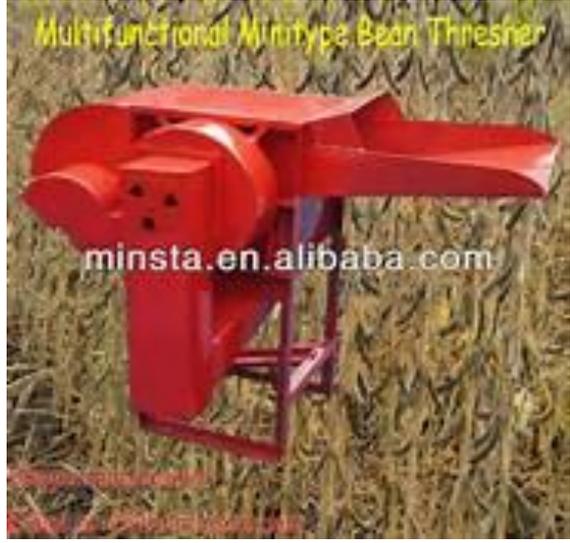
Harvesting



Harvest can begin when:

- Harvest when plants are dry and mature
- Maturity = some of the pods are brown & majority of pods are yellow ~80%
- Do not over dry as bean pods can shatter
- Seed Moisture around 15-18% at harvest (varietal specific)
- Mechanization & Small-Scale Growers

Affordable Threshing Machines...in China, Korea, India but not in US



Can this happen here??

Threshers and Shellers

ALMACO THRESHER



WELBORN ROTO-FINGERS

