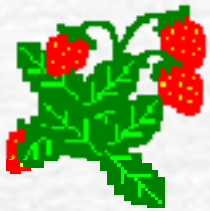
Commercial Strawberry Production

Growing Small Fruits and Rhubarb for Wine Production

4-24-03

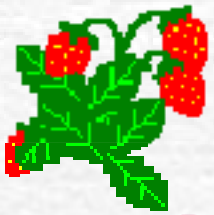
Strawberry

- Herbaceous perennial
- Abundant runners
- Extremely shallow root system
- Irrigation is a requirement



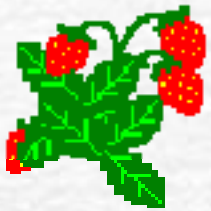
Site

- Well-drained
- High organic matter level
- Full sun
- Do not use a site previously in sod
- Should not follow such crops as tomatoes, peppers, and egg plant
- Protection from the wind
- Avoid low sites



Planting

- 18-24 inches apart
- Rows 3-4 feet apart
- 5,400 plants per acre
- Plant early in the spring
- Remove flower blossoms first year

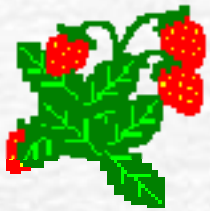


June Bearing

- Entire crop in late June
- Similar yields to everbearing

Everbearing

- Harvest in late June or early July
- 2nd crop in late summer



Junebearing/Day-neutral

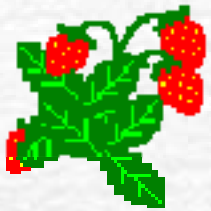
- Junebearing produce in June/July
- Day-neutral produce from June to frost
- June bearing initiate buds on short days (12 hours)
- Day-neutral initiate buds on any day length
- Junebearing usually overwinter well
- Day-neutral typically is an annual

Day-Neutral/Raised Beds

- Day-neutrals can be put on raised beds to get quicker warming and earlier crops

Insect

- Tarnished plant bug
  - Produce small fruit (nubbins)
  - Nymphs fed on the flowers
  - Most damage occurs when fruit is green
  - Control by removing debris and weeds around strawberries
  - Check plants twice a week before bloom for insects
  - One nymph per plant
  - Early bud to flowering



Tarnished plant bug

Adult

Nymph

Damage

Tarnished Plant bug

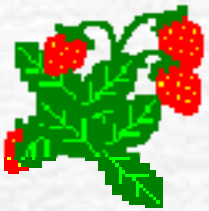
- Treat when first spring blossom buds appear, repeat after heavy rain until first fruit set
- Lannate insecticide

Strawberry Root weevil and Red Spider Mite

- Malathion,kelthane(spider mites)
- Same schedule as TPB

Mulch

- 4 inches of clean mulch
- Apply when plants are hardened
  - Temperatures of 20 degrees
  - Soil surface frozen
- Remove mulch April 20-May 15
  - Leave on as long as possible
  - Remove when plants began to grow
- Check mulch during season to make sure it is secure
- Move mulch between rows

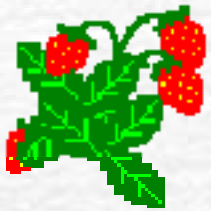


Day-Neutral Mulch

- For day-neutral apply a 1 to 2 inch mulch shortly after planting to keep berries clean, conserve water and help control weeds
- Plastic mulches can be used to conserve moisture in the summer
- Black plastic recommended to warm soil but may be too hot during the summer

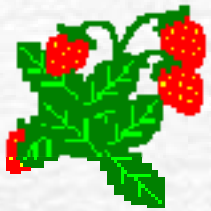
Harvest

- Will produce 6,000-8,000 pounds
- Fruit size declines with age
- Yield declines in 3-5 years
- Harvest early in the day



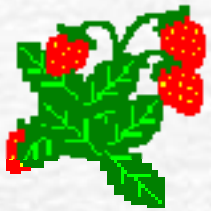
Weeds

- Control weeds prior to planting
- Strawberries not competitive
- Most common reason for failure in strawberries is weed control
- Poast and Select available for grass control



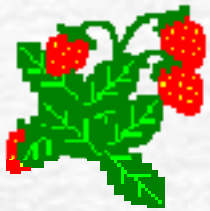
Labor

- Penn State budget
  - $5,000 for harvest labor (probably high)



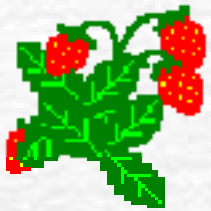
Labor Requirements/acre

- Land Preparation: 4 hours
- Establishment: 64 hours
- Production: 58 hours
- Harvest: $5,000



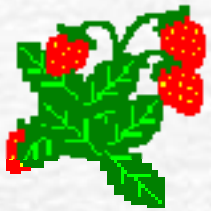
Planting System

- Matted-row system
- Allow runners to form a matt 15-18 inches wide
- Keep plants 4-6 apart
- Strawberries can be their own worst weed



Matted Row System

- Easier weed control
- Easier harvest
- Less fruit rot
- Fewer foliage diseases
- Most common for commercial producers



Variety Choice

- Variety choice should depend on:
  - Hardiness
  - Disease resistance
  - Consumer acceptance
  - Grower must determine what variety is best for there conditions

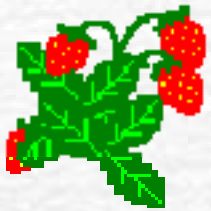
Varieties

- Cultivar Selection:
  - Those that are listed as disease resistant to red stele, verticillium wilt, and fruit rot, such as the following:

- Cavandish - Earliglow - Lateglow -Tristar - Glooscap
- Primetime - Redchief -Tribute - Dakota

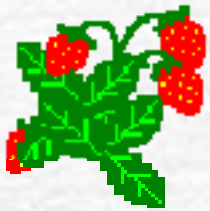
Diseases

- Viral diseases
  - New, clean plants
  - Varieties that are resistant
  - Symptoms
    - Dwarfing, mottling, curling, chlorosis
  - Spread by aphids and leafhoppers



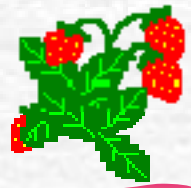
Diseases

- Verticillium wilt
  - Grow varieties that are resistant
  - Buy healthy plants
  - Be careful with rotation



Diseases

- Leaf spot, leaf scorch, leaf blight, and powdery mildew
  - Not common
- Gray mold rot
  - Keep berries dry, and keep from touching soil and dead plant material
- Fungicide treatments every 7-10 days

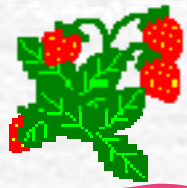


Fertilizer Needs

- Strawberries like slightly acid soils
- Green manure crops and well rotted manures are good to be used the season before planting
- Fertilize Junebearing 40-80 pound of N first year and successive years

Fertilizer Needs

- Junebearing should receive 100, 50, and 0 Phosphates on low, medium and high phosphorus testing soils
- 200, 100, and 0 Potash on low, medium, and high testing soils
- Soil Test—Top six inches NPK



Irrigation

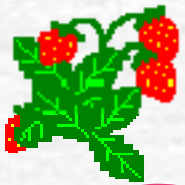
- Shallow root system and inefficient at taking up moisture
  - 75% of roots in top 3 inches
  - 90% of roots in top 6 inches
- Maintain good moisture until freeze-up
- Strawberries are susceptible to water with high saline levels

Day-Neutral Fertilizer Needs

- Fertilize day-neutral 60-150 pounds of N first year and successive years
- Day-neutral should receive 100, 50, and 25 Phosphates on low, medium and high phosphorus testing soils
- 200, 100, and 0 Potash on low, medium, and high testing soils
- Day-neutral sometimes will take more on high test soils

Harvest

- Pick in the morning
- Picking should not include berries with white on
- Store preferably in 32-35 degrees



Critters

- Birds
- Deer

Rudy Radke
NDSU Extension Service &
HVIC Task Force
4838 Rocking Horse Circle
Fargo, ND 58104-6049
701-356-0222
rradke@ndsuext.nodak.edu

HVIC
TASK FORCE

NDSU Extension