Hops: Planting and Training

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February, 2014
Climbing bines

- Bine climbs with the aid of “Trichomes”
- In the wild-they climb up companion species
- Commercial production- Requires a trellis system for support
- Typical set-up
  - 18’ tall
  - Plants spaced 3’ x 14’
  - 1000-1200 plants/acre
- Vine wraps around string-clockwise-function of phototropism (light) and thigmotropism (touch)
Hop Production Stages

• Stages of Growth
  — Dormancy
  — Spring regrowth
  — Vegetative growth
  — Reproductive growth
  — Preparation for dormancy

• Each stage requires its own unique management regime

Source: Jason Perrault, Perrault Farms
Dormancy (October-March)

• In late summer the plant allocates photosynthetically derived starches to the storage roots
• Starch is converted into soluble sugars
• Sugars are the energy needed for spring-regrowth

• In the field
  • Not much happening
  • Planning for next season

Source: Jason Perrault, Perrault Farms
Spring Regrowth (April-May)

- Increasing day lengths and temperatures - signal for end of dormancy
- Plant uses soluble sugars as energy to emerge from dormancy and begin regrowth
- Initial regrowth occurs - rapidly producing vines unsuitable for production
- Plant relies on energy reserves of the root until end of May, when the starches and sugars reach their lowest points of the year
- Supplemental nutrient management is needed to maximize plant health

Source: Jason Perrault, Perrault Farms

Photo credit: Erin Lizotte
Planting

- Michigan is moving away from rhizomes
  - Disease
  - Reliability
  - New local supplies of certified plants

- Plant starts can be planted throughout the growing season but generally in spring

- Have your trellis and irrigation in place before planting

Photo Credits: Great Lakes Hops
Spring Regrowth (April-May)

• **In the Field**
  - Spring pruning-April (removing initial growth)
    - Encourage more hearty secondary growth
    - Reduce disease
  - Weed Control
  - Fertilizer application
  - Stringing
  - Training-one of most important aspects of hop production
    - Timing is varietal specific
    - Generally 3 vines per string
  - Irrigation begins

Source: Jason Perrault, Perrault Farms
Sri Lanka coconut husks

- Coir Twine for hops, come in compressed bales 3200 - 3400 strings.
- Breaking strength of 75-100 lbs.
- Can be pre-cut to 22’

Photo credit: Michiganhops.com
Twisted Paper

- Wet strength bio-degradable twisted paper strings and ties (Kerr supply)
- Wet strength of over 80 - 100lbs and can be cut to any desired length
- Strings are Palletized for delivery
- Easier to handle than compressed bales
- Each pallet contains 13,200 strings bundled in hanks of 300 strings.
- Treated if using in-ground w/ clips
- Untreated if organic (different above ground clips that can be reused)
- Michigan supplier-American Twisting Co.
• At least 2000 strings/acre (2 per plant)
• Video

http://roguefarmsblog.wordpress.com/category/crops/hops-crops/
Meanwhile In Michigan
2 options for stringing

1. W clips
2 options for stringing

2. Tie strings to a lower wire

http://onspecialtycrops.wordpress.com/2013/05/14/hop-update-may-14-2013-stringing-trellising-and-irrigation/
http://roguefarmsblog.wordpress.com/category/crops/hops-crops/
Training

• 3-4 bines
• Clockwise only
• Timing-Cultivar and weather dependent
• Will likely have to re-train
Training Date

- Early training can lead to reduced yield (ex. Galena)
- Training date is variety-specific but usually occurs during May in the Willamette valley.
- Very little information in the literature as research results have been inconclusive

Source: Townsend, S. Factors affecting hop production and quality.