

Hazelnuts 101

Planting & Caring for Hazels

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2013 Upper Midwest Hazelnut
Growers Conference

Outline

Part 1 - Why Hazelnuts,

- Site Selection
- Soil Test
- Site Layout
- Site Preparation
- Planting

Part 2 - Maintenance and Care

- Watering
- Weed control
- Pest control

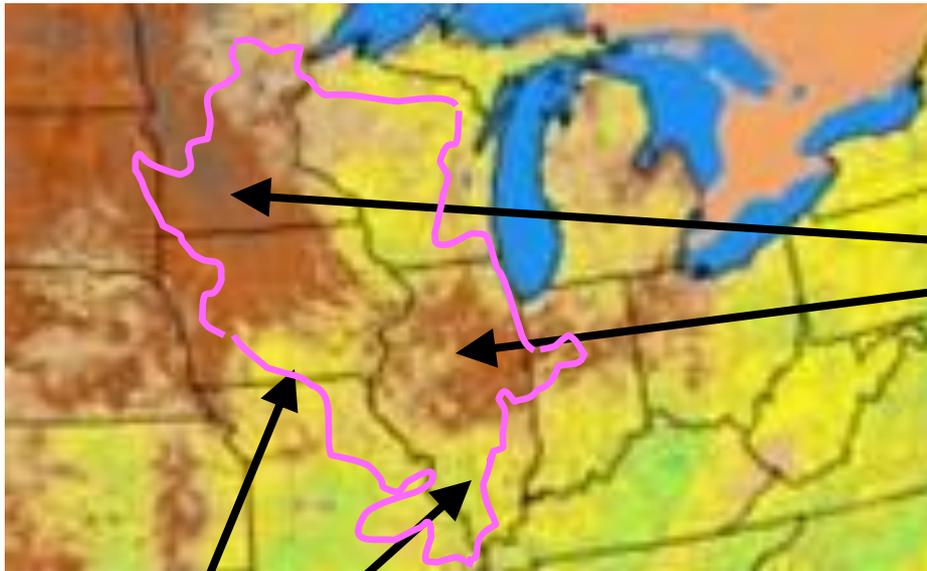
Part 3 – Harvest

- When
- How

Why Grow Hazelnuts?

- Perennials strategically placed on the landscape have the capacity to mitigate many of the degradations inherent in production agriculture

Courtesy: Green Lands Blue Waters

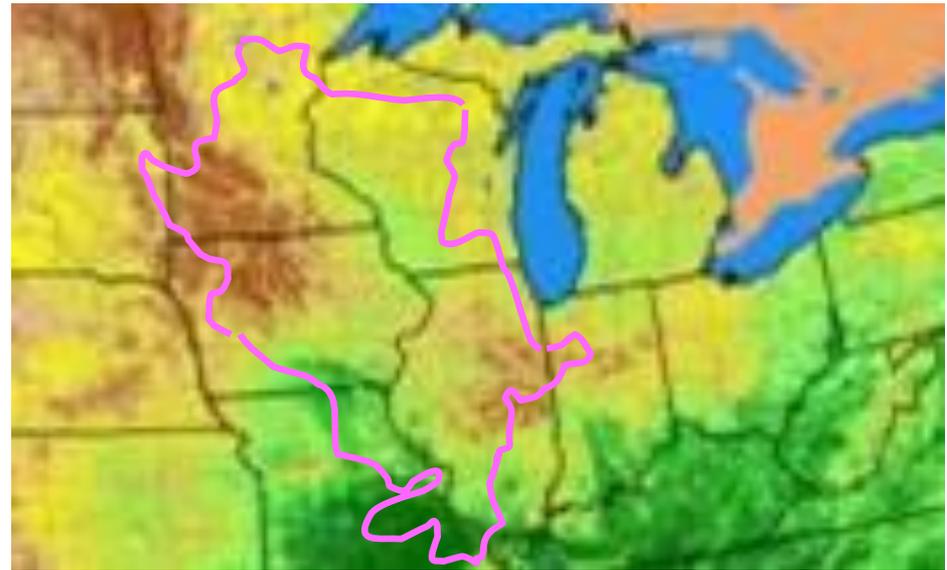


Areas of annual
Row cropping

2002 Growing Season

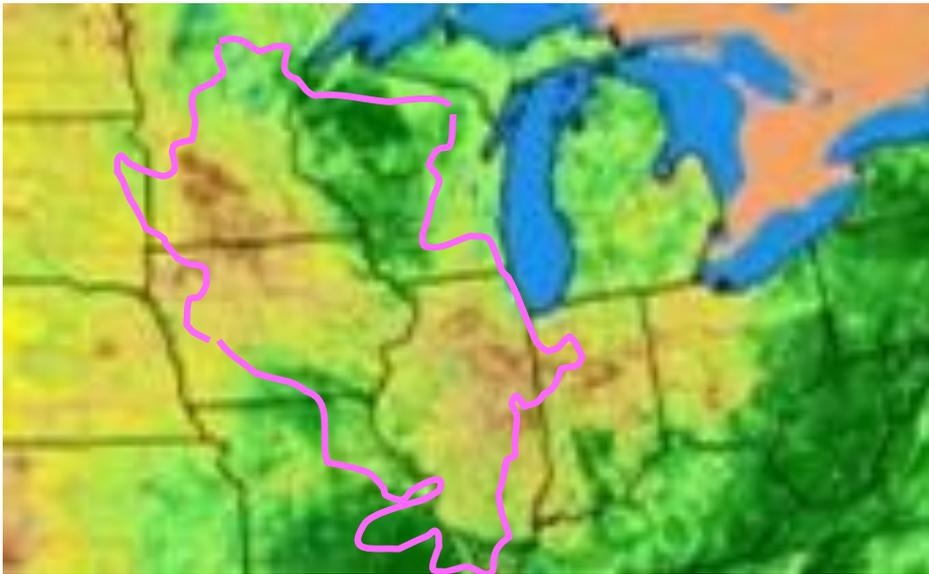
April 5 - 18

Areas of perennial
vegetation



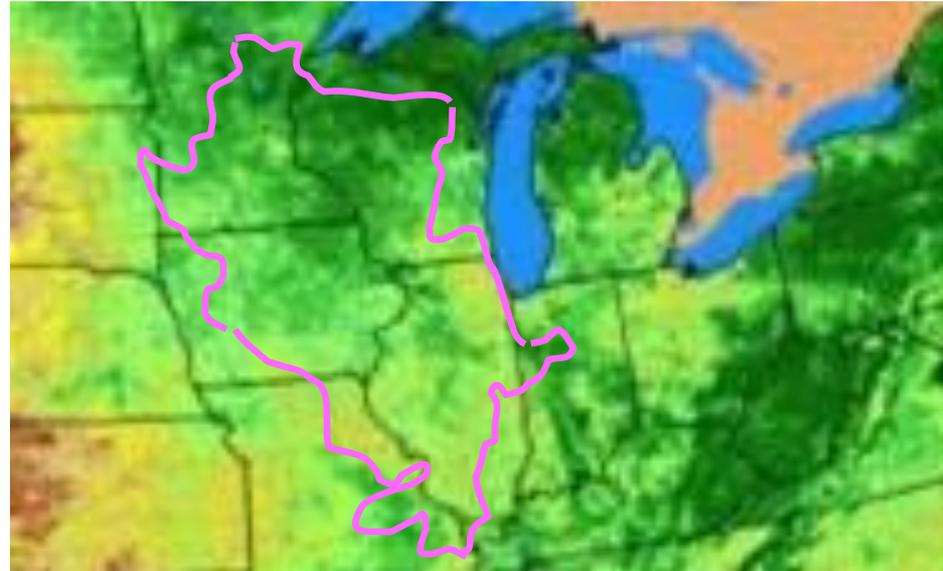
May 3 - 16

Courtesy: Green Lands Blue Waters



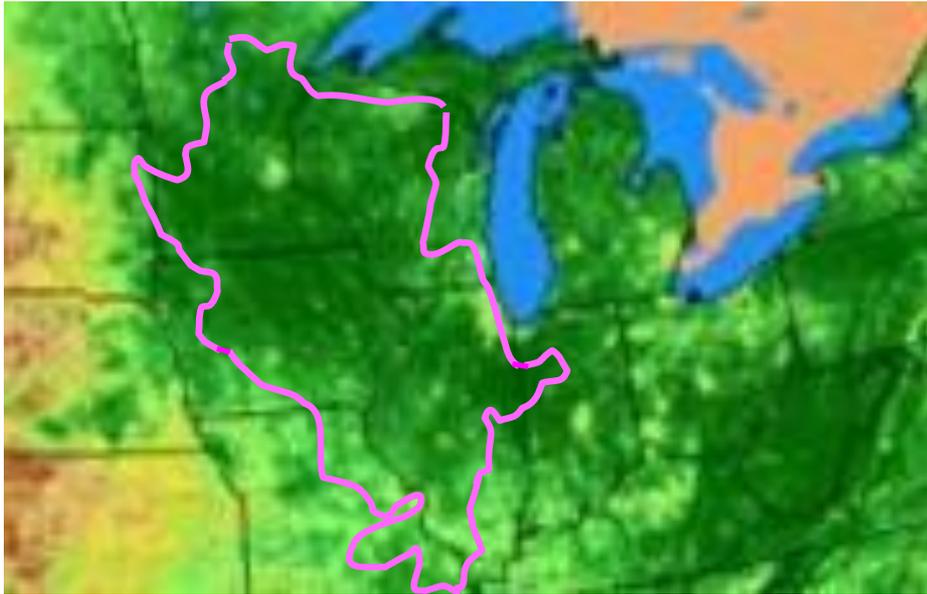
May 31 - June 13

2002 Growing Season



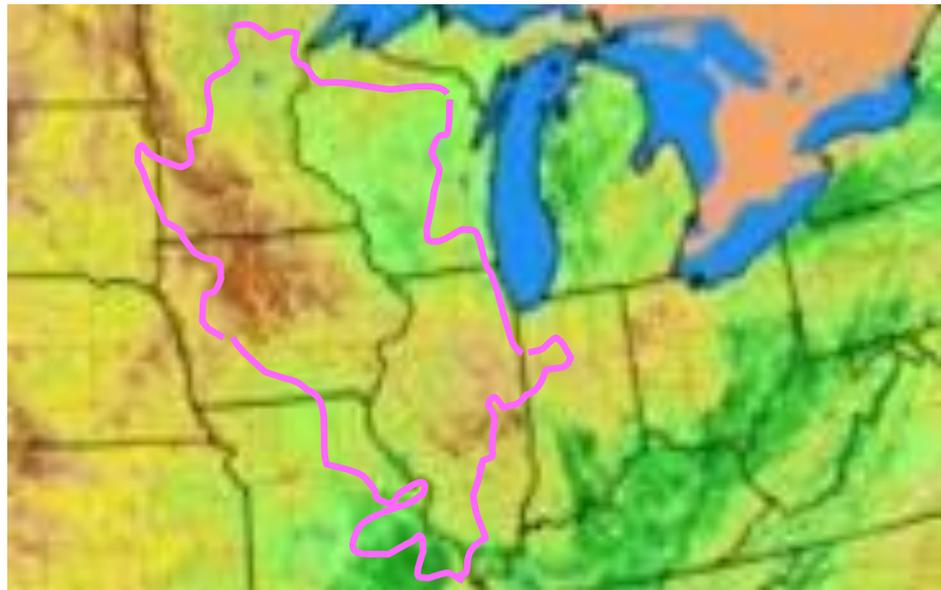
June 28 - July 11

Courtesy: Green Lands Blue Waters



2002 Growing Season

July 26 - August 8



October 17



Photo: Nancy Rabalais, Louisiana Universities Marine Consortium

Where do Hazelnuts Fit in the Landscape?

Hazelnuts are a Multi-Functional crop

- Living Snowfences
- Farmstead Shelter Belts and Windbreaks
- Expiring CRP
- Old cow lots
- Orchards
- Alley Cropping

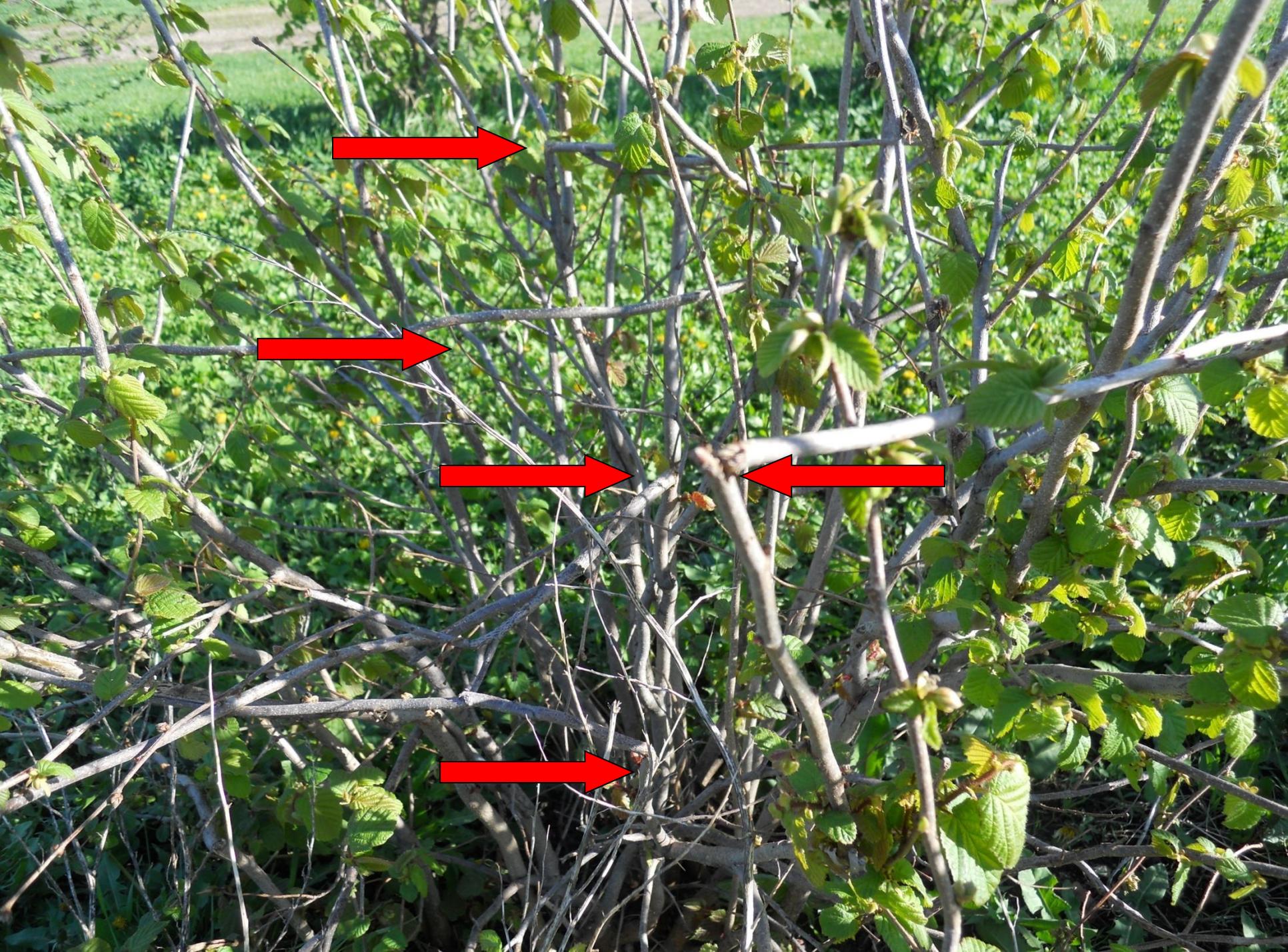
Site Selection

- Full sun to partial sun
- Wide range of soils - from poor to deep fertile
 - Heavy clay impedes root growth
 - Sandy soils allows rapid root growth but may be droughty
 - Favor slightly acid soils but tolerate pH 5.5 to 7.5
 - Once established, tolerant to moderate drought and short-duration standing water



Site Selection

- Be cognizant of animal habitat
 - Predation from critters happens
- Wind and snow can be an issue
 - Protection from NW winds would be advisable
 - Reports of damaged stems from 2009-2010 winter



Site Layout

Growers have used various within-row and between-row spacings.

Bushes can grow up to 12 feet in diameter.

Considerations:

- Size of equipment
- Hand harvesting vs. mechanical picking
- Research planting vs. production planting

Spacing = 5ft between plants & 15ft between rows





10ft between plants & 10ft between rows

Spacing

Spacing = 6ft between plants & 12ft between rows



Ground Preparation

- Strip tillage may be used to conserve soil
- Repeated applications of a burn-down herbicide are an alternative to tillage for elimination of perennial weeds.

Ground Preparation

- Pre-plant tillage may be needed to:
 - Eliminate a hard pan,
 - Eliminate perennial weeds (especially grasses, for which repeated tilling is needed),
 - Incorporate lime or pre-plant fertilizer,
 - Facilitate planting (especially if planting large-rooted planting stock).
- Pre-plant tillage should be avoided if
 - The site is highly sloped and prone to erosion.











9 inch deep pots allow for good root growth and a denser mass of roots. In many cases big beautiful roots were coming out the bottom of the pots





Bare Root Plants





Tubelings
being
replanted into
bigger PVC
pots



Early planting was done with a 6 inch ground auger, this worked well and was better than a shovel but it removed too much dirt



Maintenance & Care

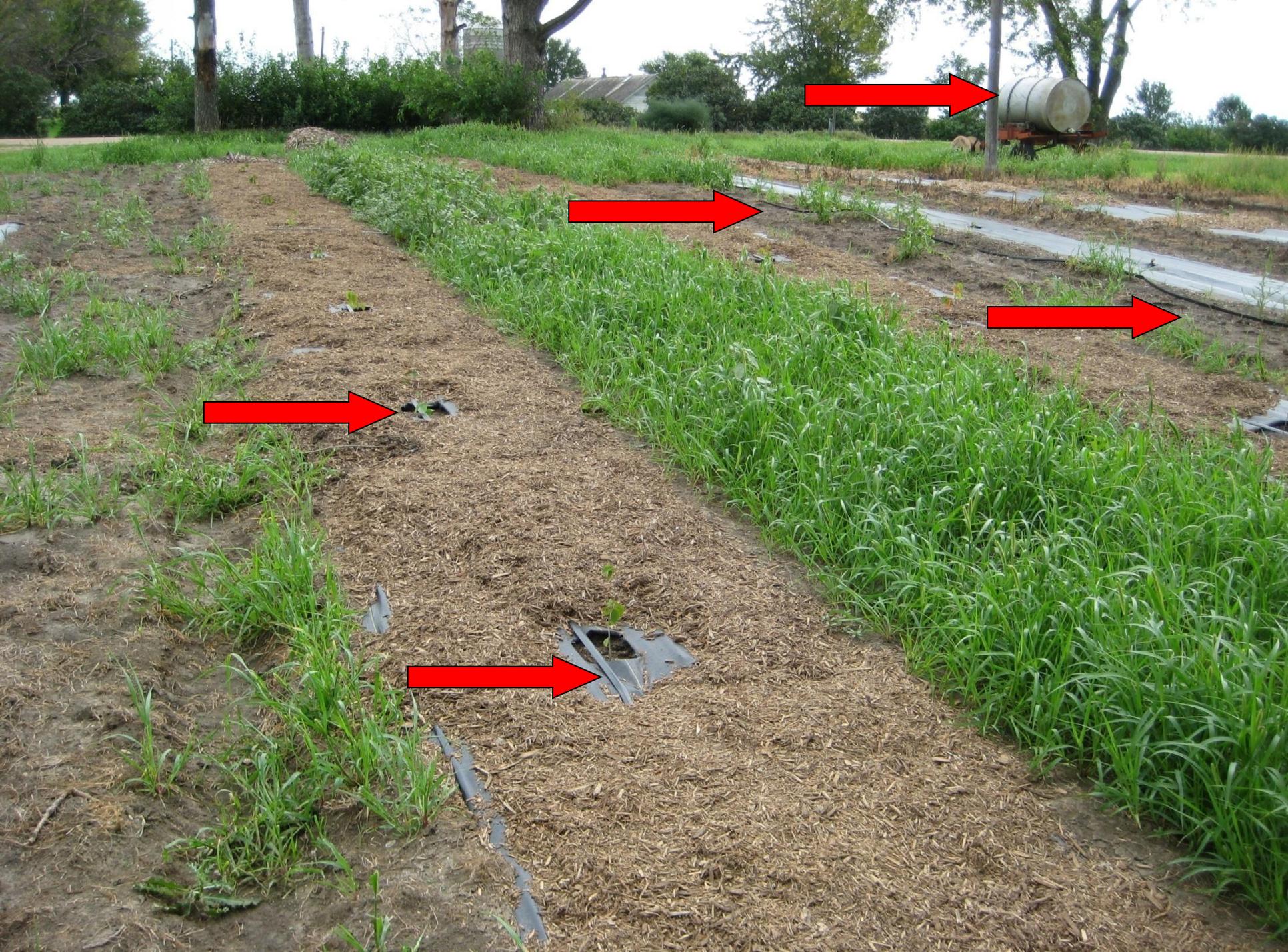


Water, water, water!

Water is critical for the first two years.

Watering methods:

- Buckets or water wagon
- Drip hose
- Sprinklers
- (Conservation, such as landscape fabric or mulch)



Weed Control

Weeds compete primarily for water,
so good weed control reduces need for water.

Weed control methods:

- Hoeing or mechanical cultivation
- Weedwhipping or mowing
- Herbicides
- Landscape fabric
- Mulch

Protection from Animals

Pests of plants

- Gophers
- Rabbits
- Deer
- Others?

Pests of nuts

- Squirrels
- Crows, turkeys, jays
- Mice
- Bears
- Others?



Protection from Animals

Rule #1 Know your pests! Be sure you have the correct ID and know their behavior!

- Don't waste resources on a problem you don't have!
- Don't kill animals that aren't doing damage!

Methods of protection:

- Exclusion (fences, cages, and netting)
- Removal of pest habitat
- Repulsion (repellents, noise makers)
- Predation (hawk roosts, patrol dogs or cats)
- Lethal methods (shooting and trapping—check legality)

Arthropod Pests

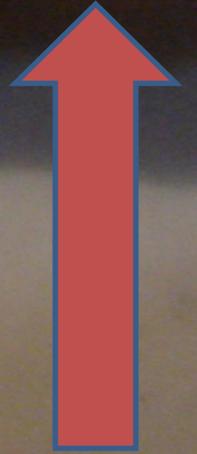
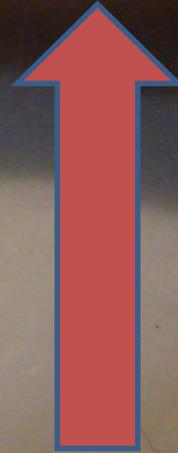
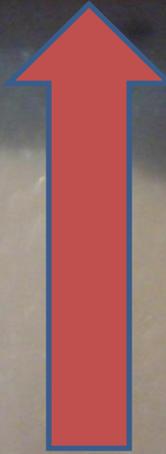
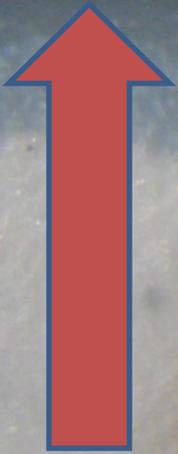
- Big Bud Mite
- Leafhoppers
- Tomato hornworms
- Weevils
- Japanese Beetles
- Others?

Diseases

Eastern Filbert Blight (EFB)

- American hazelnuts are tolerant to EFB
- There are many strains of EFB
- EFB manifests itself as parallel rows of postules that often turn black.

EFB Pustules



Harvesting





hazel blossom





Wind
Fresh
100





Questions?

- For additional information on hazelnuts visit the Upper Midwest Hazelnut Development Initiative @ <http://www.midwesthazelnuts.org/>
- Jeff Jensen, Trees Forever & MN Hazelnut Foundation – Jeff@jenagres.com