



APPLES!

Wesley R. Autio
Director & Professor of Pomology

 **STOCKBRIDGE**
SCHOOL of AGRICULTURE | **UMASS**
AMHERST

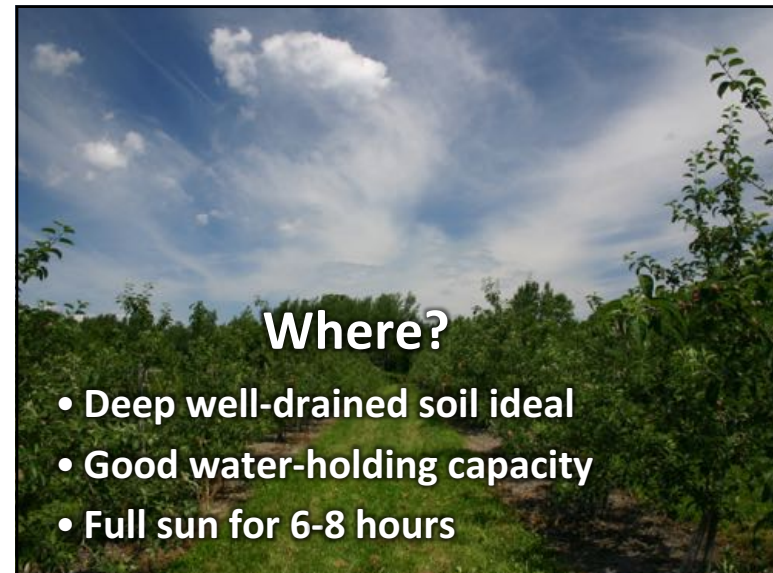


Apple growing is a very challenging horticultural activity.



Planting size MUST conform to the amount of time available.

Too little care means no fruit!



Where?

- Deep well-drained soil ideal
- Good water-holding capacity
- Full sun for 6-8 hours

Suggested Varieties



- **Redfree**
(mid August)
- **Sansa**
(late August)
- **CrimsonCrisp**
(mid September)
- **Crimson Topaz**
(late September)



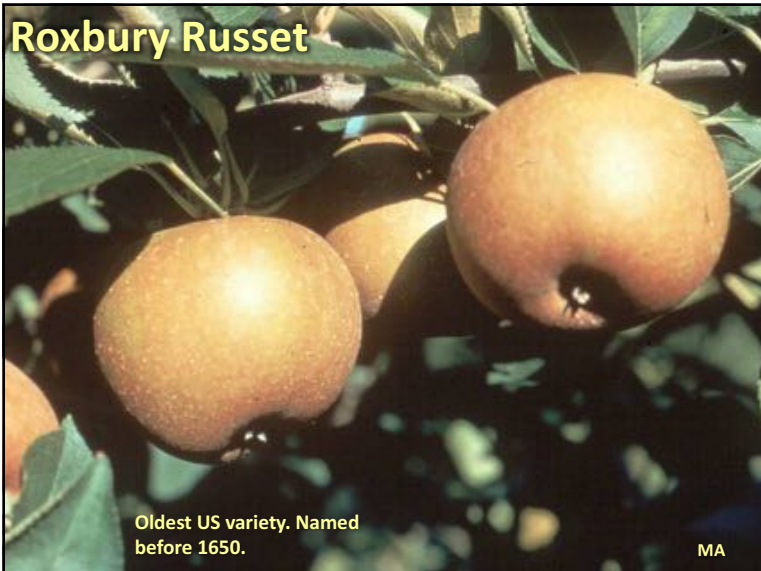
Suggested Varieties



- **Liberty**
(late September)
- **NovaSpy**
(mid October)
- **Enterprise**
(mid October)
- **GoldRush**
(late October)



Roxbury Russet



Oldest US variety. Named before 1650.

MA



Golden Russet

MA



Apples require cross pollination

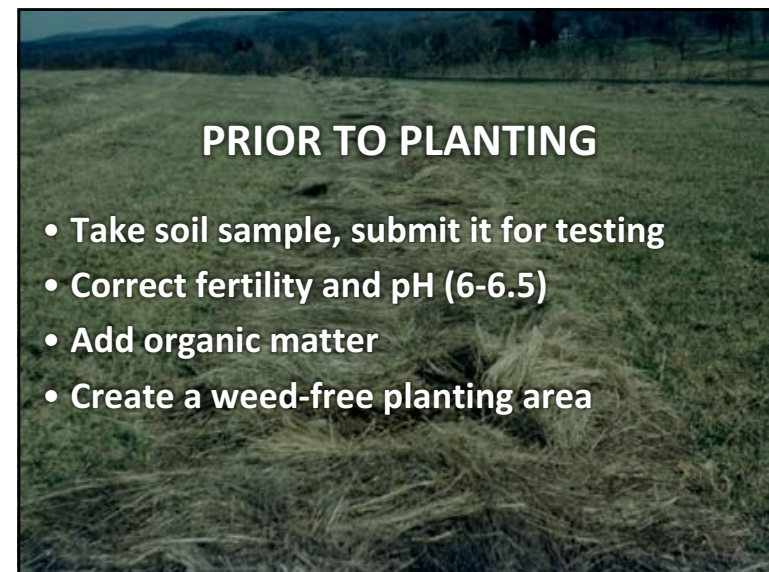
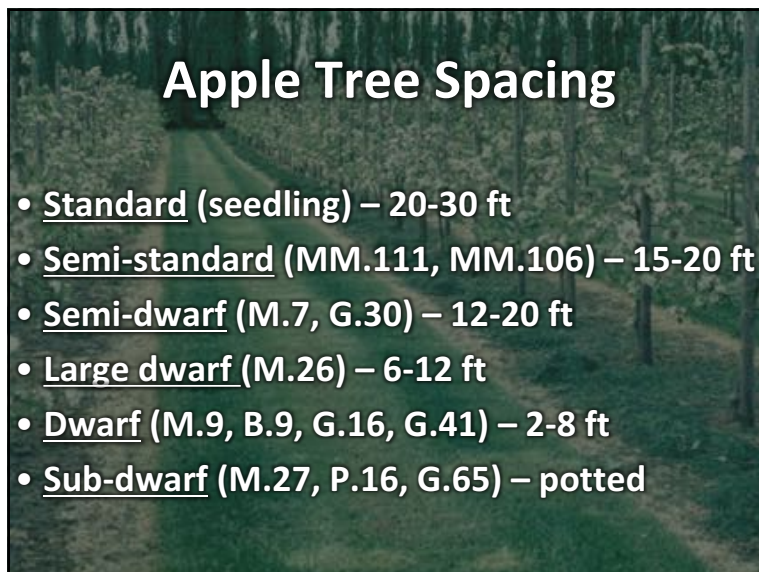
- Each tree should be within 50 feet of a pollinizer
- Crab apples can pollinate apples
- Bloom times must overlap
- Pollen must be viable

Good Apple Pollen Sources

Early Season	Mid Season	Late Season
Liberty	Cortland	CrimsonCrisp
Lodi	Delicious	GoldRush
McIntosh	Empire	Macoun
Paulared	Enterprise	Northern Spy
Wealthy	Gala	Rome
	Golden Delicious	
	Redfree	
	Sansa	

Poor Apple Pollen Sources

Early Season	Mid Season	Late Season
Gravenstein	Baldwin	Spigold
Stayman	Jonagold	Winesap
	Mutsu	
	R.I. Greening	



**Planting
time = April**

**Quality is
more important
than price!**

**Caliper 5/8"
4-6' tall
1-yr-old**



**Newly Planted
Tree:**

**Support trunk if
dwarf**

**WATER
WATER
WATER!**



Apple Fertilization

- After planting
1/3 lb 10-10-10 per tree
- Subsequent years
1/2 lb 10-10-10 per year of
tree age (up to 6-8 lbs/tree)
Non-bearing – 1-2' growth
Bearing – 8-18" growth



Boron deficiency



1/8 pound Borax per tree per year in spring

Calcium deficiency

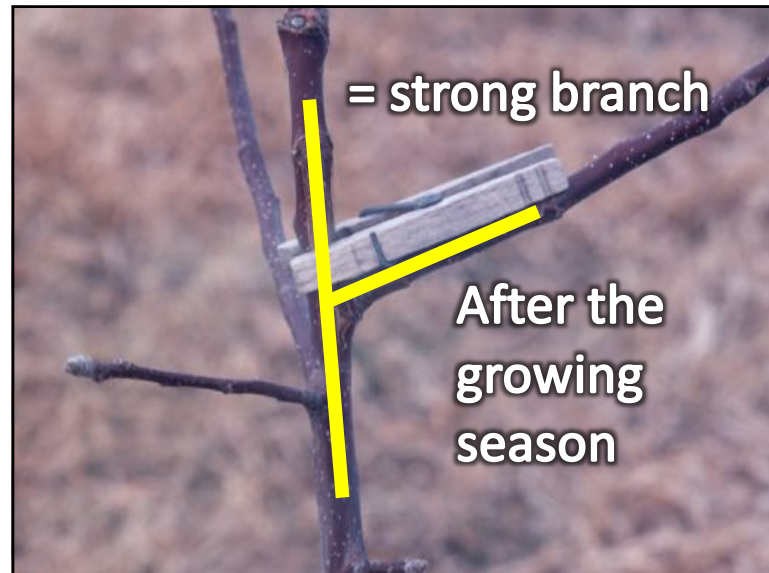
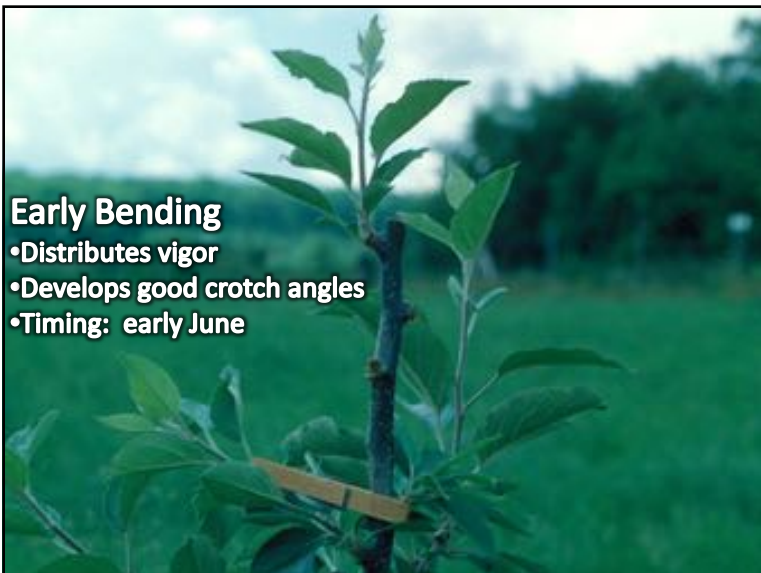


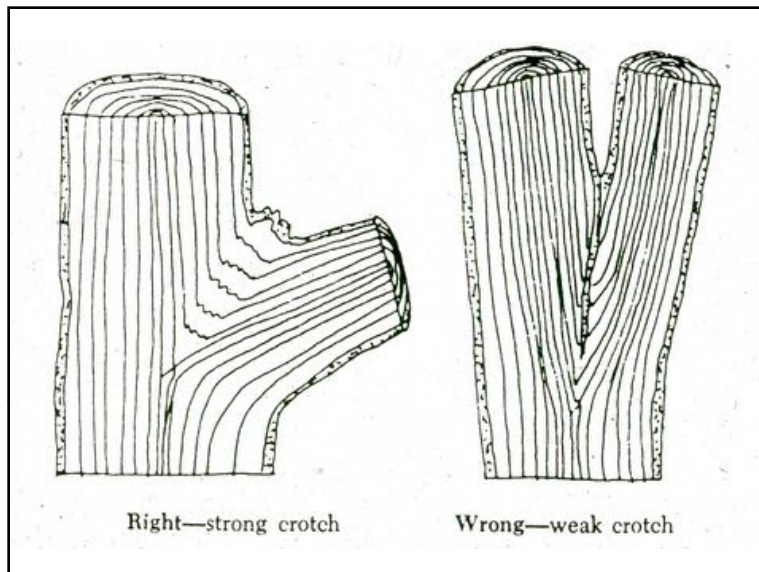
5-10 lbs gypsum per tree per year

CENTRAL LEADER



Head central leader at planting.
32" above graft union – whip
18" above upper branches
Shorten lateral branches by 1/3





Young Apple Trees

- Almost no pruning is required
- Maintain dominance of central trunk
 - Remove direct competitors
 - Apply 2-to-1 Rule
- Remove bad crotch angles
- Timing: Spring through early summer



Bevel or Dutch cut



Remove bad crotch angles



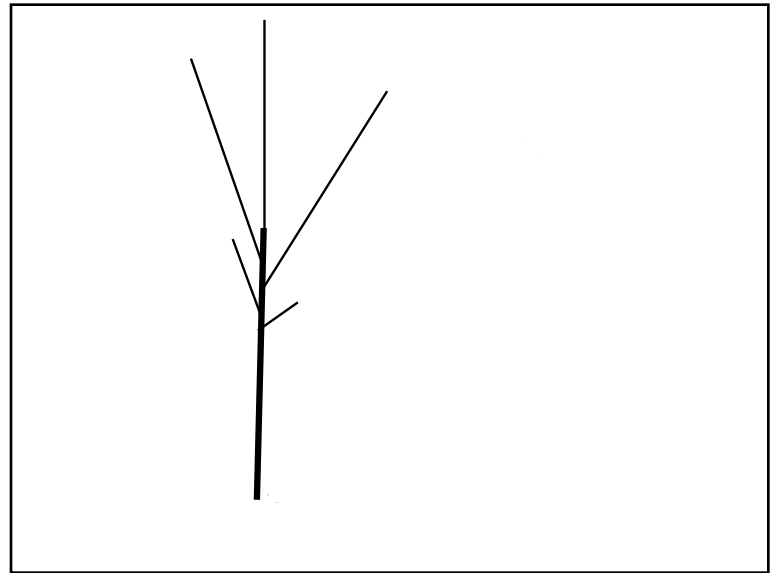
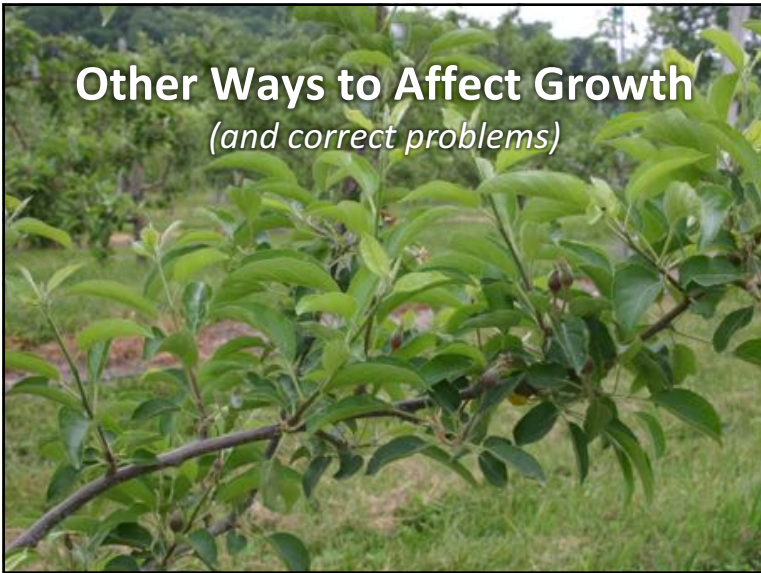
BUD FORMATION, FLOWERING & FRUITING

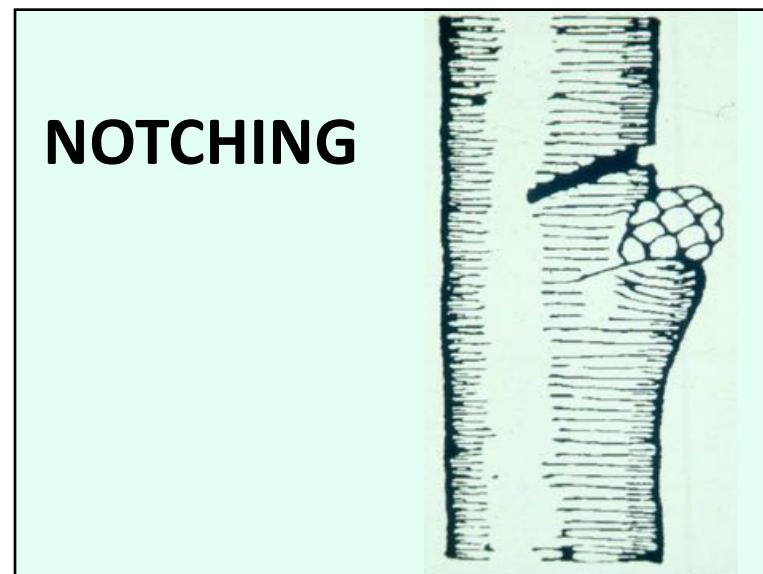
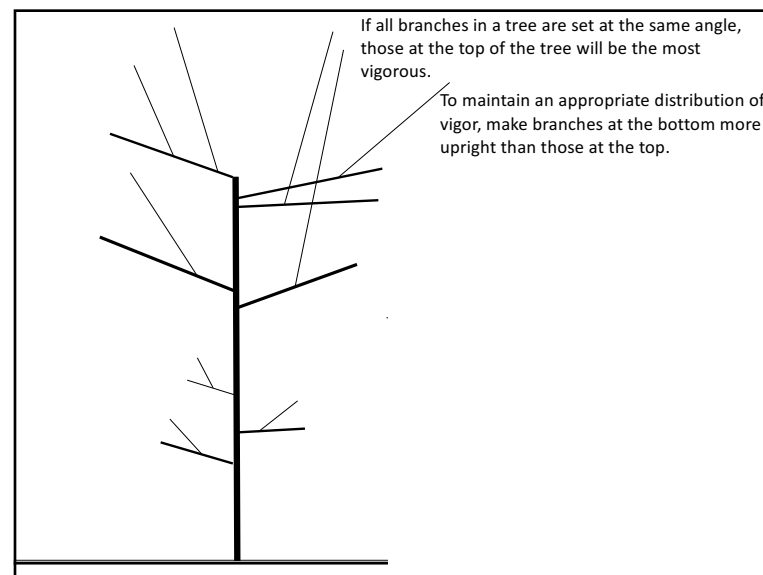
- Apples fruit on 2-year-old and older wood
- Wood 3- to 4-years old is most productive
- Older wood less productive, lower fruit quality

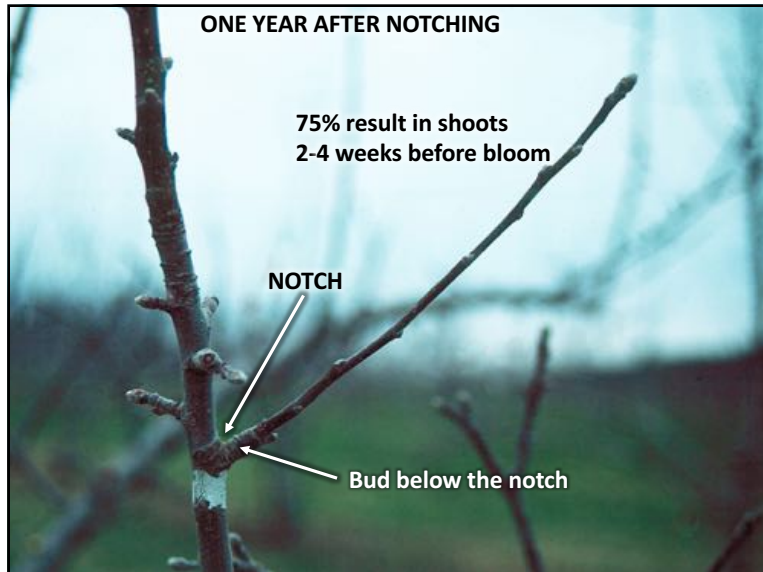
Seven Simple Rules for Apple Pruning

Optimal timing: February-May

1. Remove 2-3 of the largest limbs in the top 2/3's
2. Use the 2-to-1 rule
3. Avoid stubbing (or heading) cuts
4. Simplify branches
5. Remove drooping branches
6. Remove branches growing straight up
7. Maintain central leader







Apple Fruitlet Removal

- Thinning of young fruit is necessary
- Increased fruit size
- Enhanced bloom next year
- Hand thinning – mid to late June
 - No more than 1 fruit per spur
 - No more than 1 fruit/8-10 inches of branch

Super Spindle and Tall Spindle



Pruning

- Very limited
- Cut top sparingly
- Remove large branches
- Use "2-to-1 rule"
- Use thinning cuts vs. heading cuts!





Orchardist's Nightmare!

