

# **Building the Perfect Orchard in Nova Scotia**

## **Trials and Tribulations in the Great White North...**

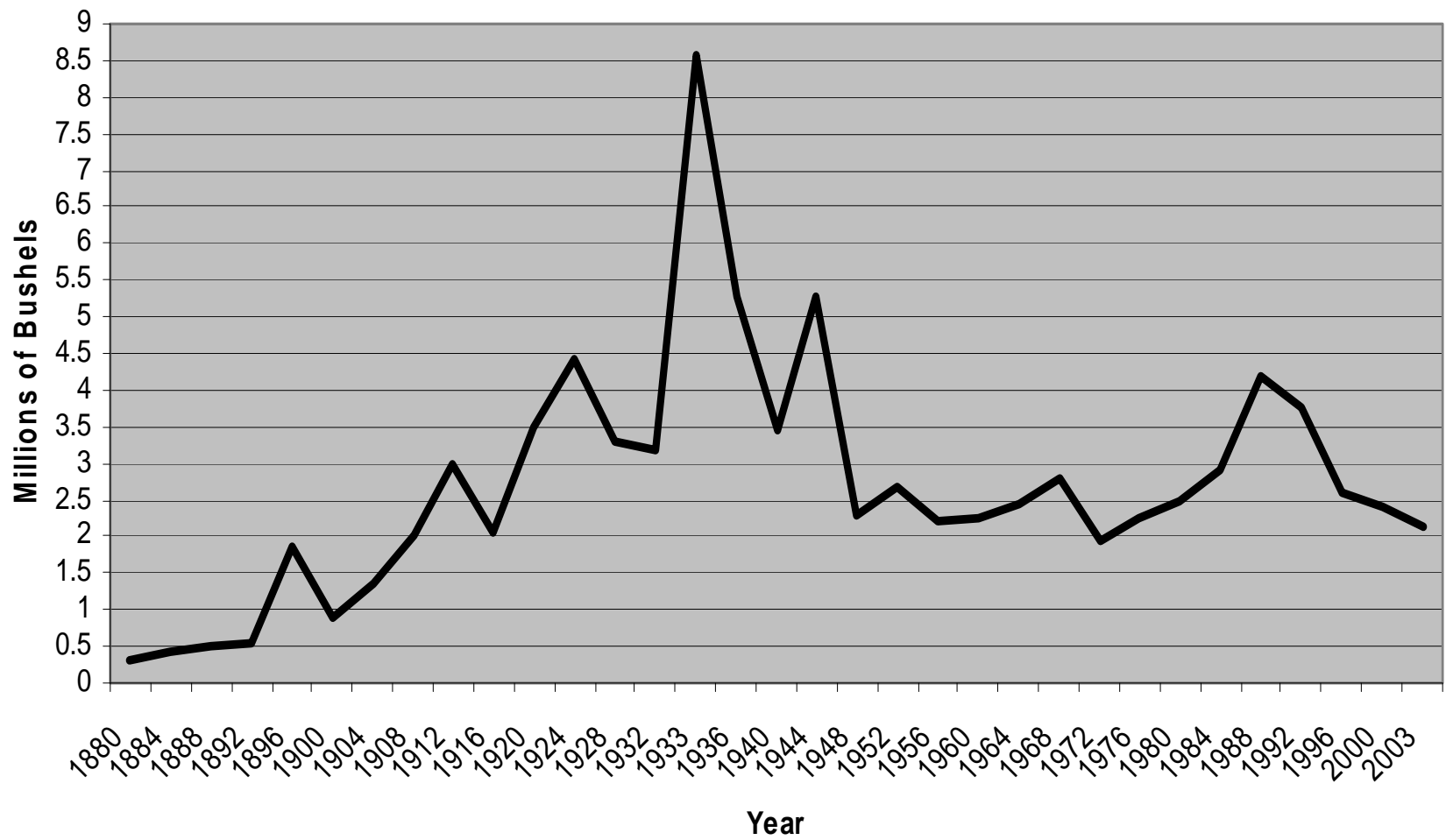
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Scotian Gold Cooperative Limited  
Lutz Family Farm



Annapolis Valley





## The Problem

- Growers were not making enough off the farm to survive let alone re-invest



# Why?

- Grower Apathy / Alternate Enterprises
- Old Varieties
- Processing Markets and Mindset
- Low yields
  - Trees too far apart –never filled their space
  - Replant Disease
  - Poor quality nursery stock
  - Poor land preparation
  - Extensive rather than intensive management

























# The Turning Point...1996



# Milestones

- 1. Accepted that we were in trouble
- 2. Started travelling to see what others were doing
- 3. Brought a soil scientist in from South Africa to show us how to evaluate and prepare sites
- 4. Started Deep Fumigation Service
- 5. High quality trees from the USA
- 6. Dwarf Rootstocks and tight spacing's
- 7. High quality support systems
- 8. Honeycrisp







































































# Tree Planting and Training





**Buy Only The Very Best Trees**

















## GPS Planting...Following Fumigated Strips

















# Training Systems

- Either Vertical Axe or Tall Slender Spindle
- All new plantings are supported - conduit + wire or multiple wires
- Little or no limb positioning, up or down.
- Not enough “push” to grow existing scaffold limbs and top in the first season
- Heavy limbs removed at planting and each year after
- No heading after first season
- May lose some early production but we need to fill in the allotted space, and we get “softer” branch angles in we are aggressive in early limb removal























# Support Systems





# Supported Trees

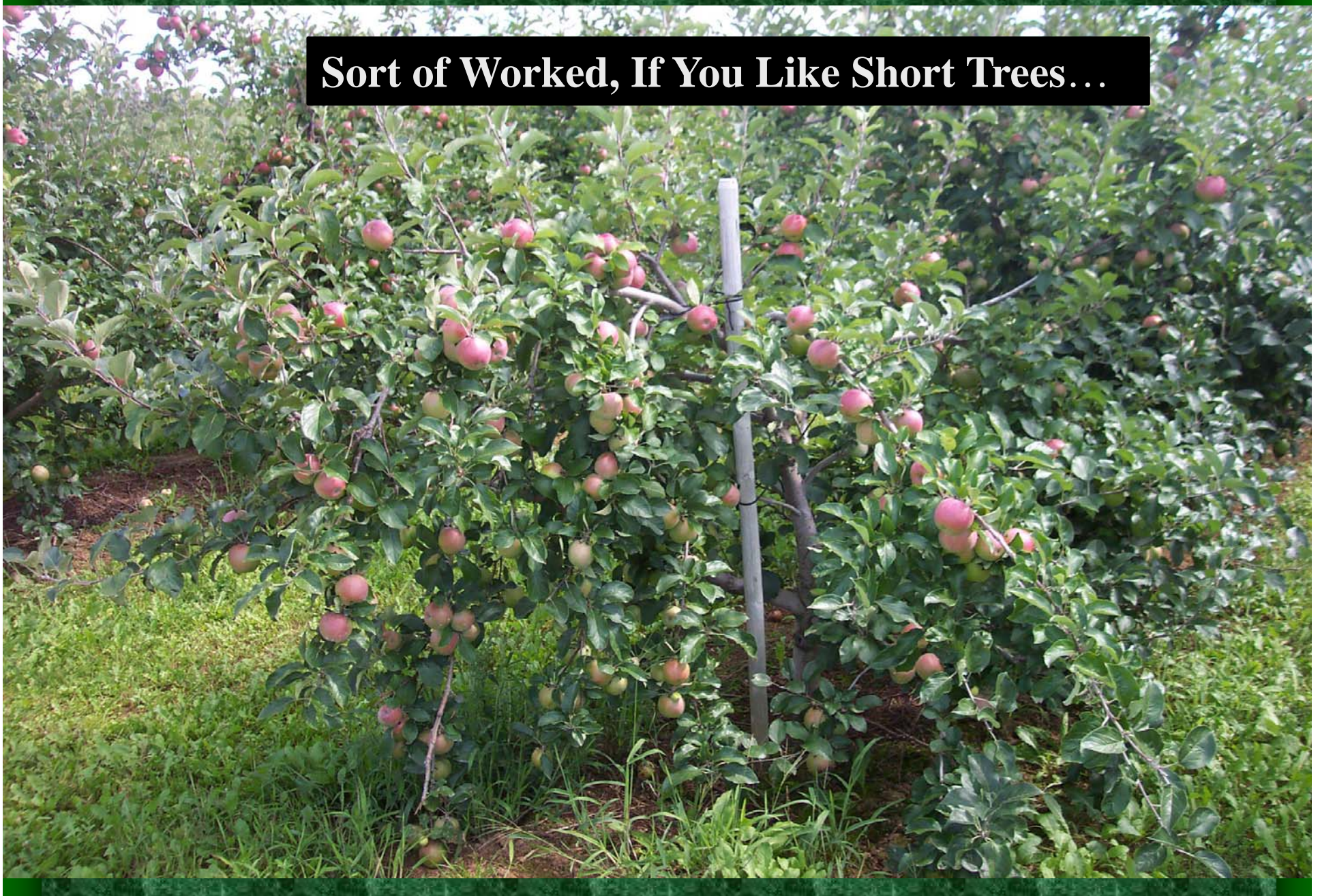
- Not an option - Only way to grow fruit trees; dwarf or semi dwarf
- Started out with 8' pressure treated posts by each tree – total failure
- 10' single posts were almost as bad
- Most of newer plantings supported by conduit attached to a two wire support system
- Latest plantings above 600-800 trees/acre utilize 4-6 wire trellis
- 14' end posts, 12' line posts. 4' screw in anchor
- All 14' posts if no leader support used







**Sort of Worked, If You Like Short Trees...**





**Or Crooked Trees....**







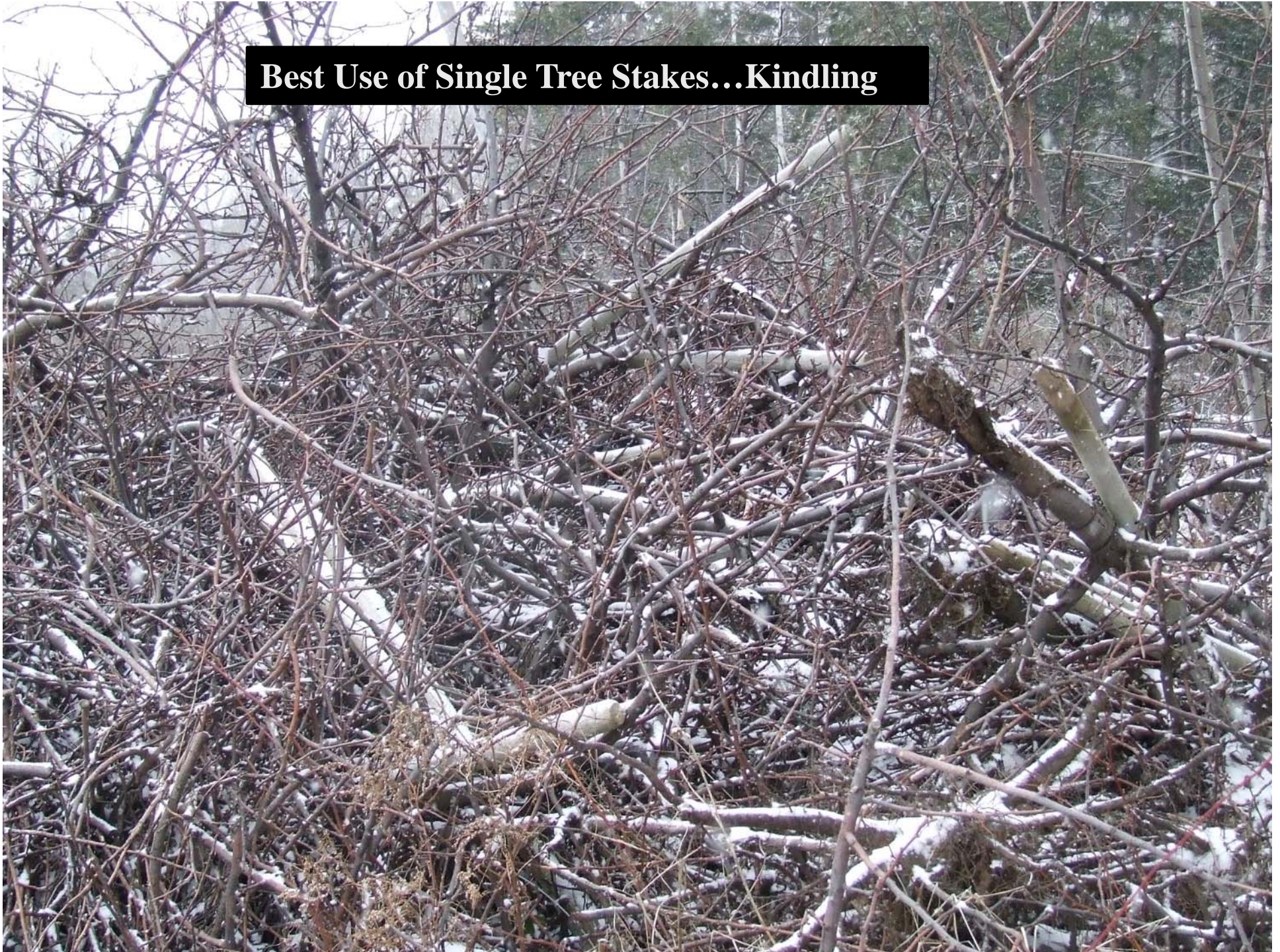


**Or Flat Trees....**





## **Best Use of Single Tree Stakes...Kindling**





## Posts, Two Wires, Conduit Leader Support













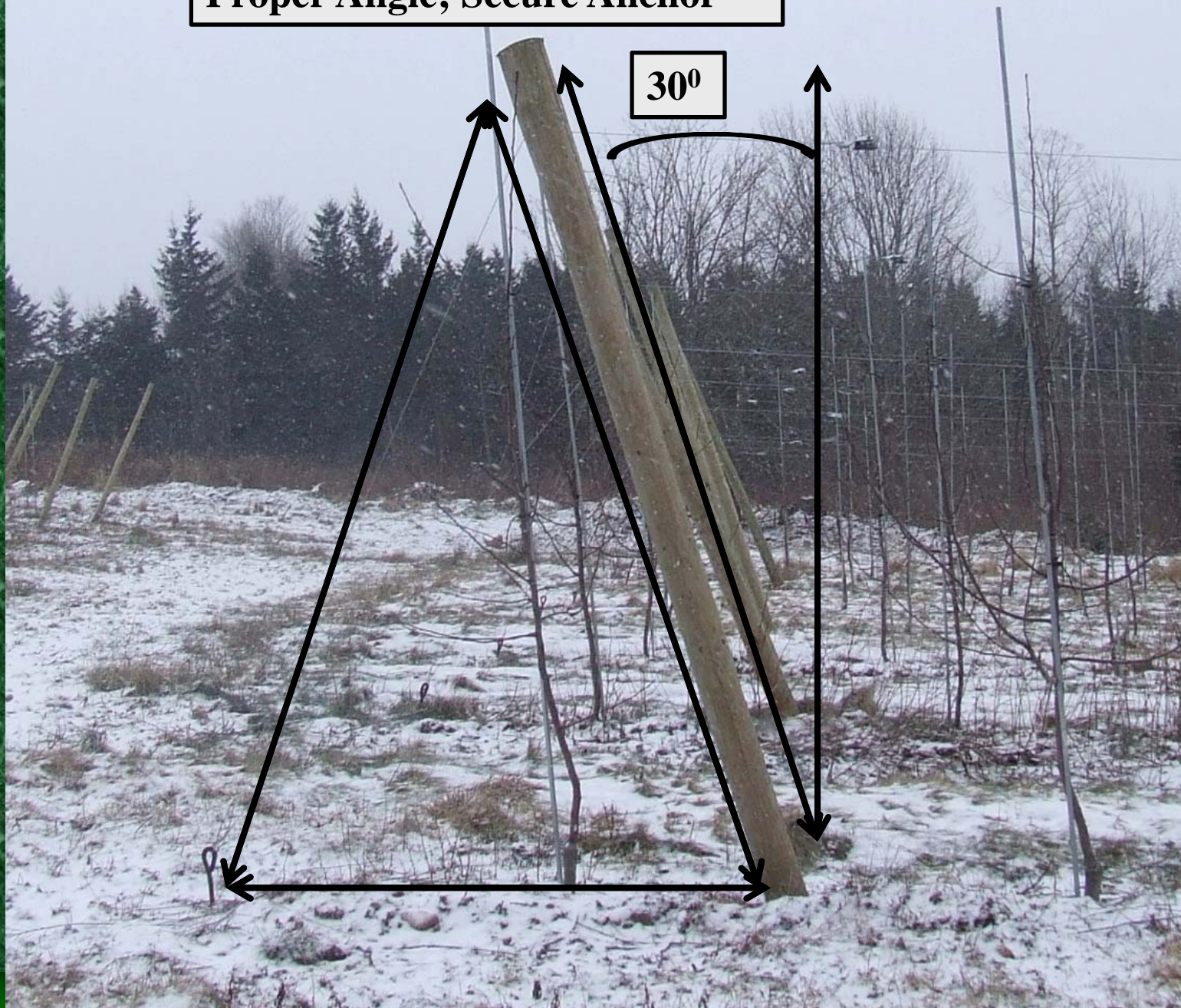
# Placing the Poles...







## Proper Angle; Secure Anchor





## End Post Installed Using a Jig





**Installed Without Jig**





**Improper Angle; Anchor Doomed to Fail...**





**Perfect End Post...**





## A Crooked End Post....





**Will Lead to a Leaning Trellis...**







**Keeping Them in the Ground...**



**Use Cold Rolled Steel Anchor Shafts- Not Rebar**





**Proper Installation Depth**





**Attaching the Wires...**







## Barbed Staples







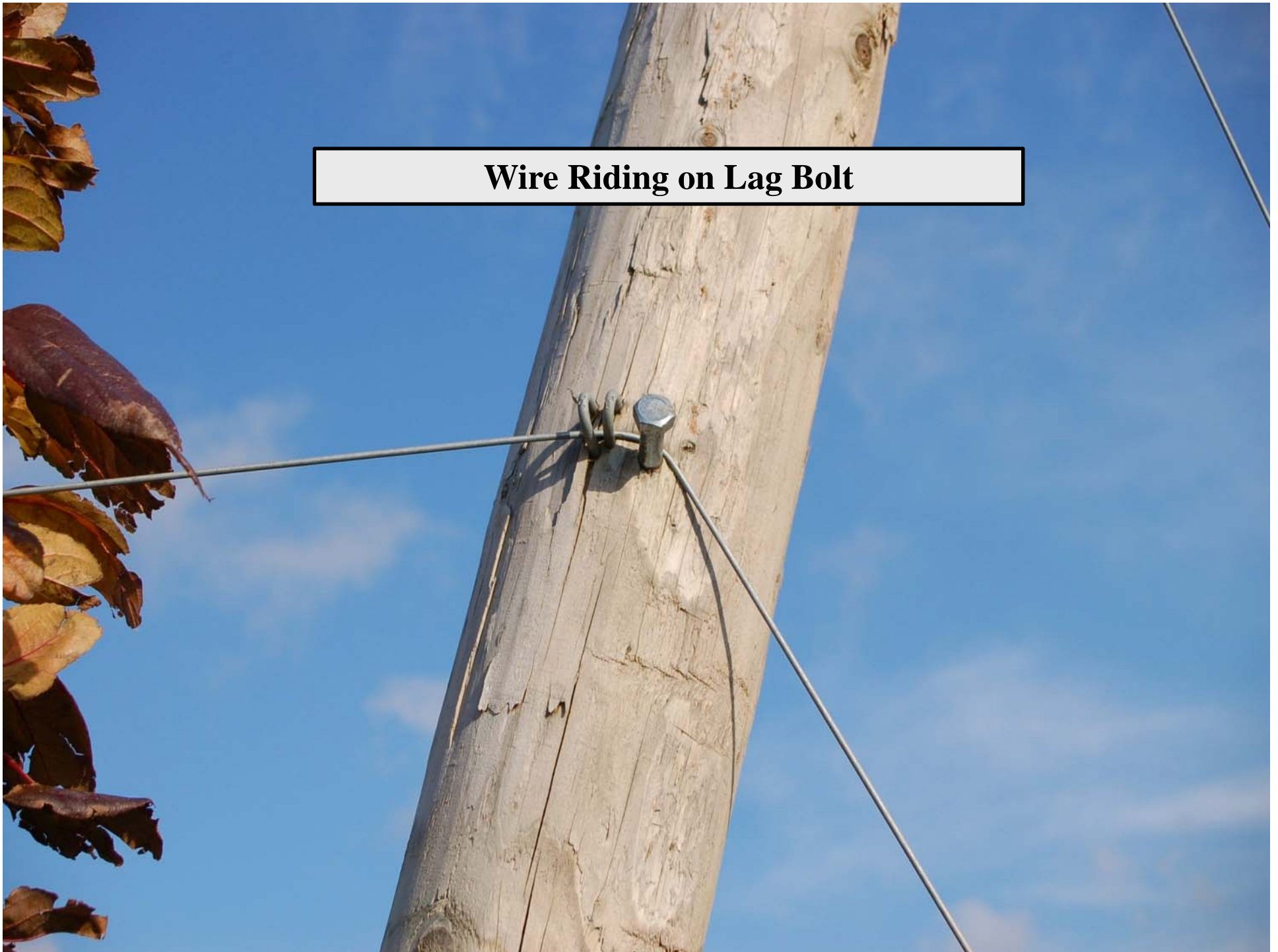


## Staples Popped Out



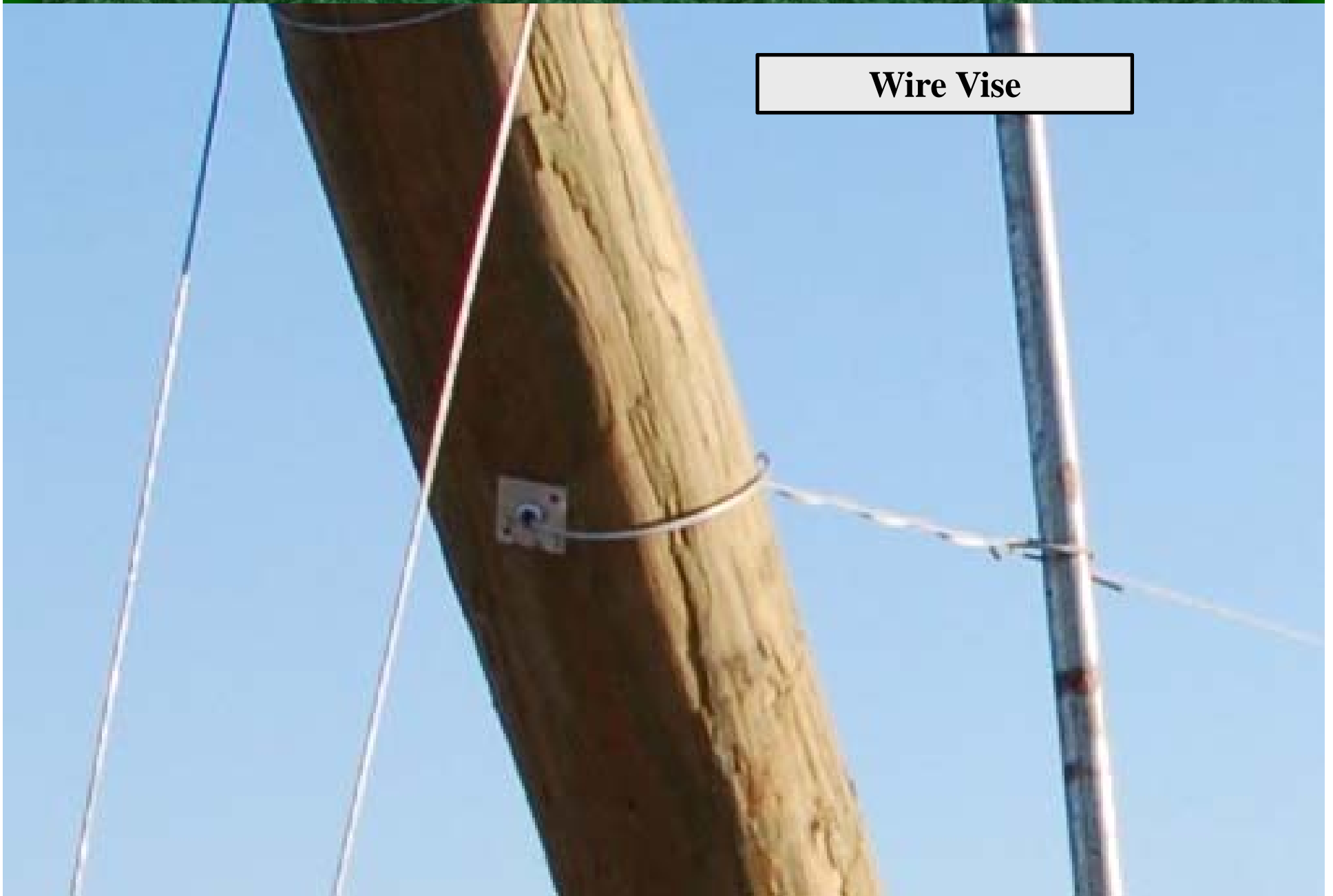


## Wire Riding on Lag Bolt



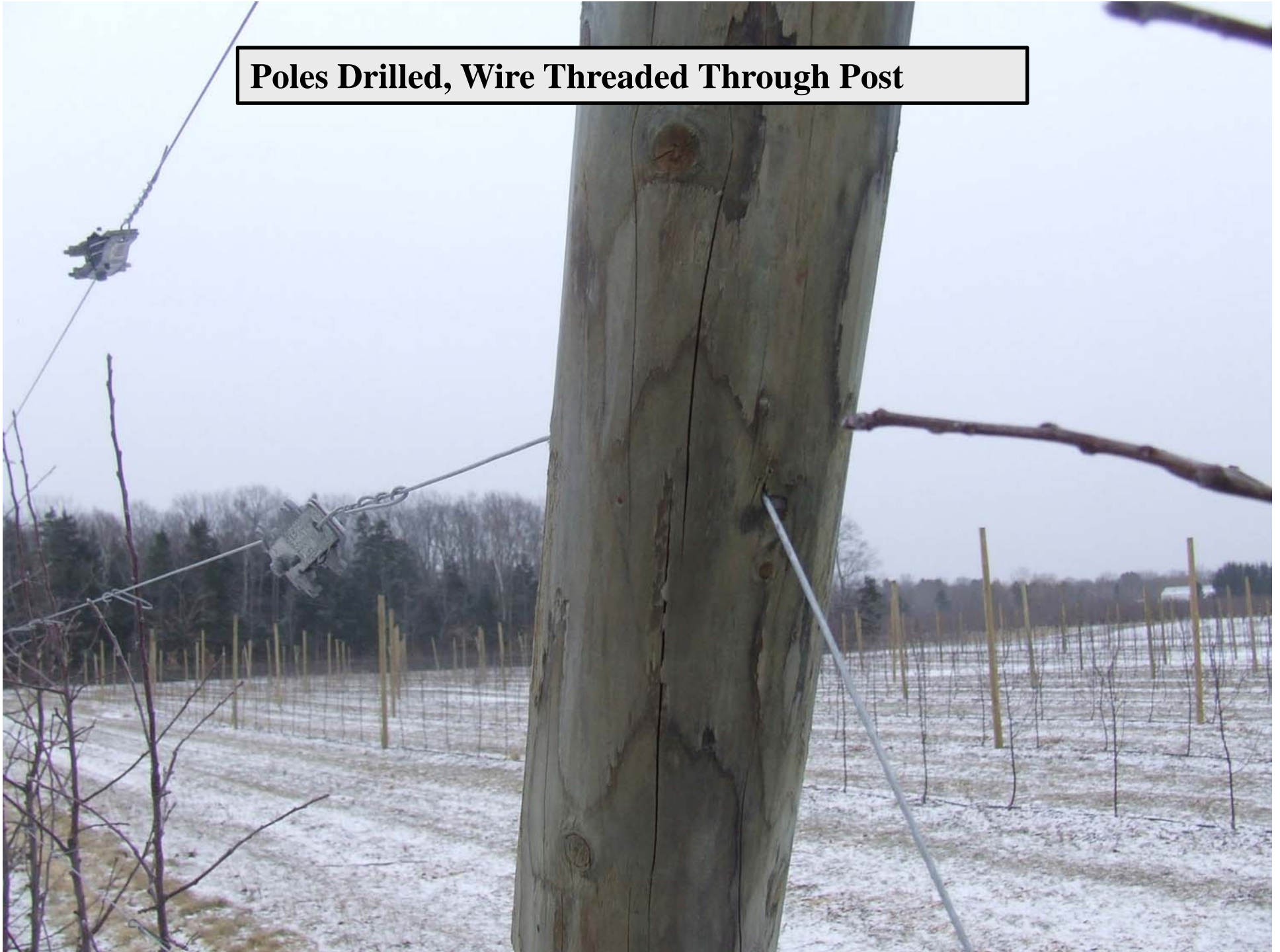


## Wire Vise





## Poles Drilled, Wire Threaded Through Post





**Wires Tied Off to End Post – Two Wires to Anchor Minimum**







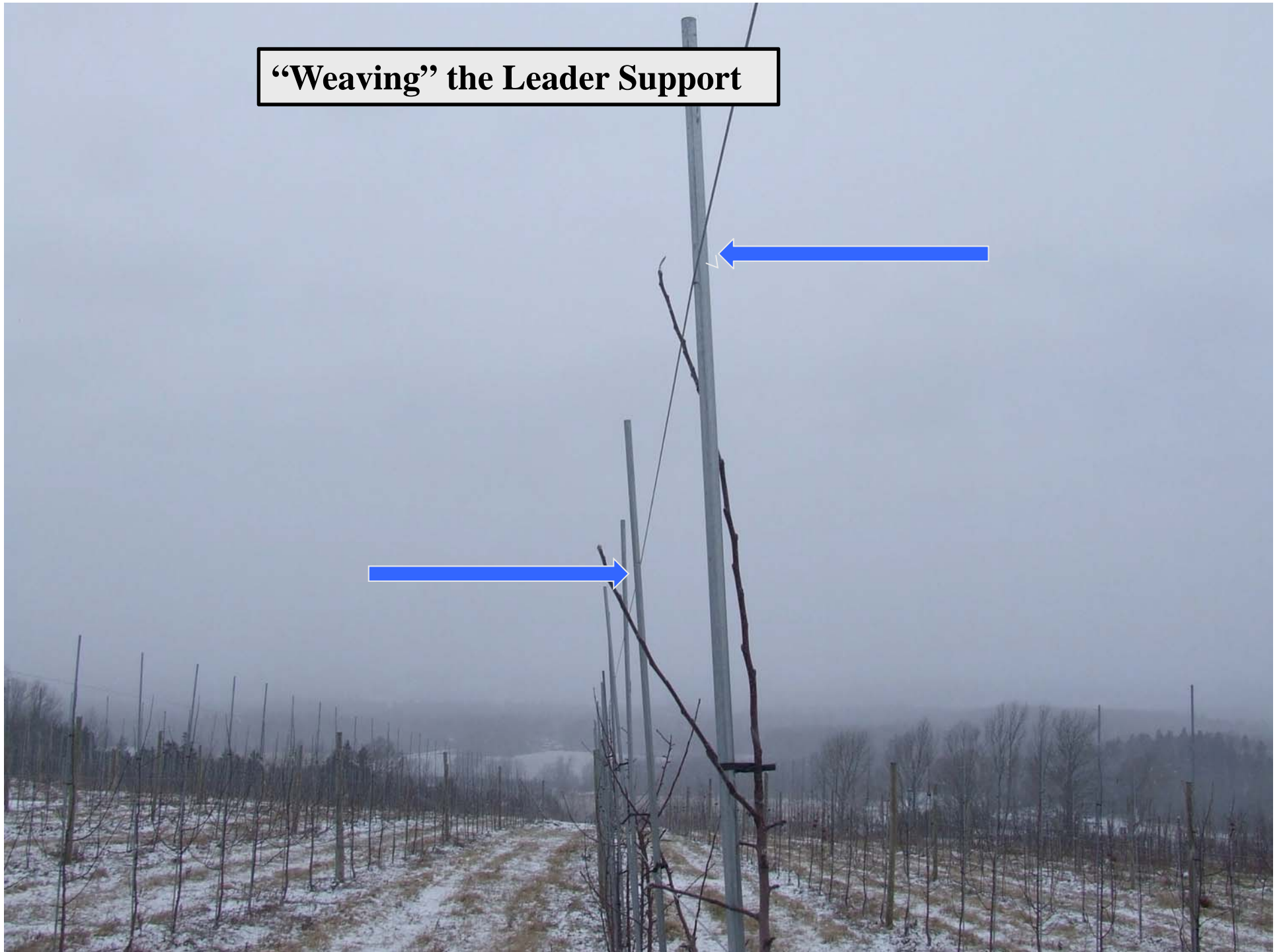
**Keeping Things Straight...**







## “Weaving” the Leader Support





## Rubber “Easi-Ties”





**Proper Slack in Tree Tie.....None**





**Tie every 12-16" Right to the Top**





**Conduit and Tie must Support Tree and Crop Load**











**SO...What Can Go Wrong?**

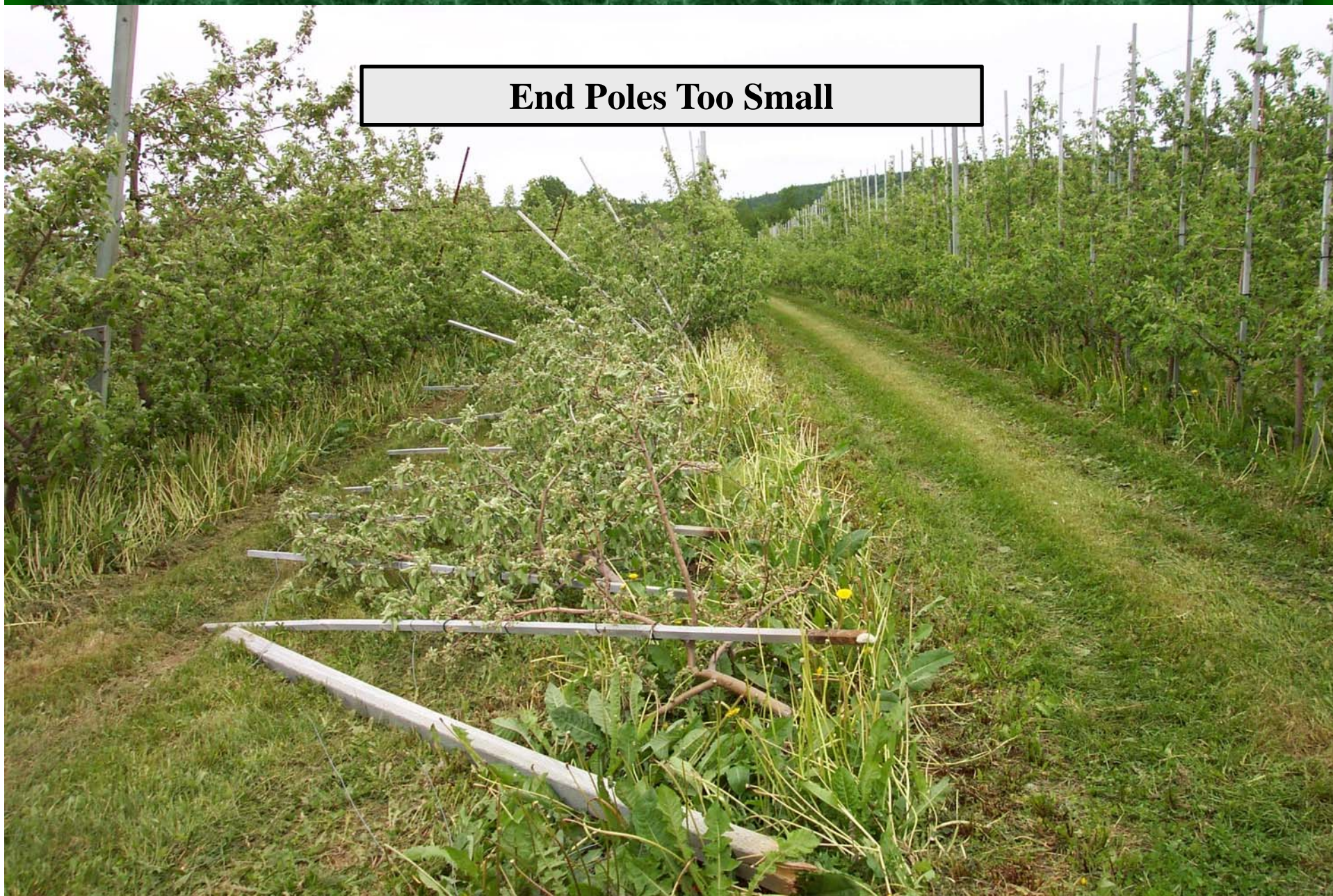


## Anchor's Too Shallow





**End Poles Too Small**



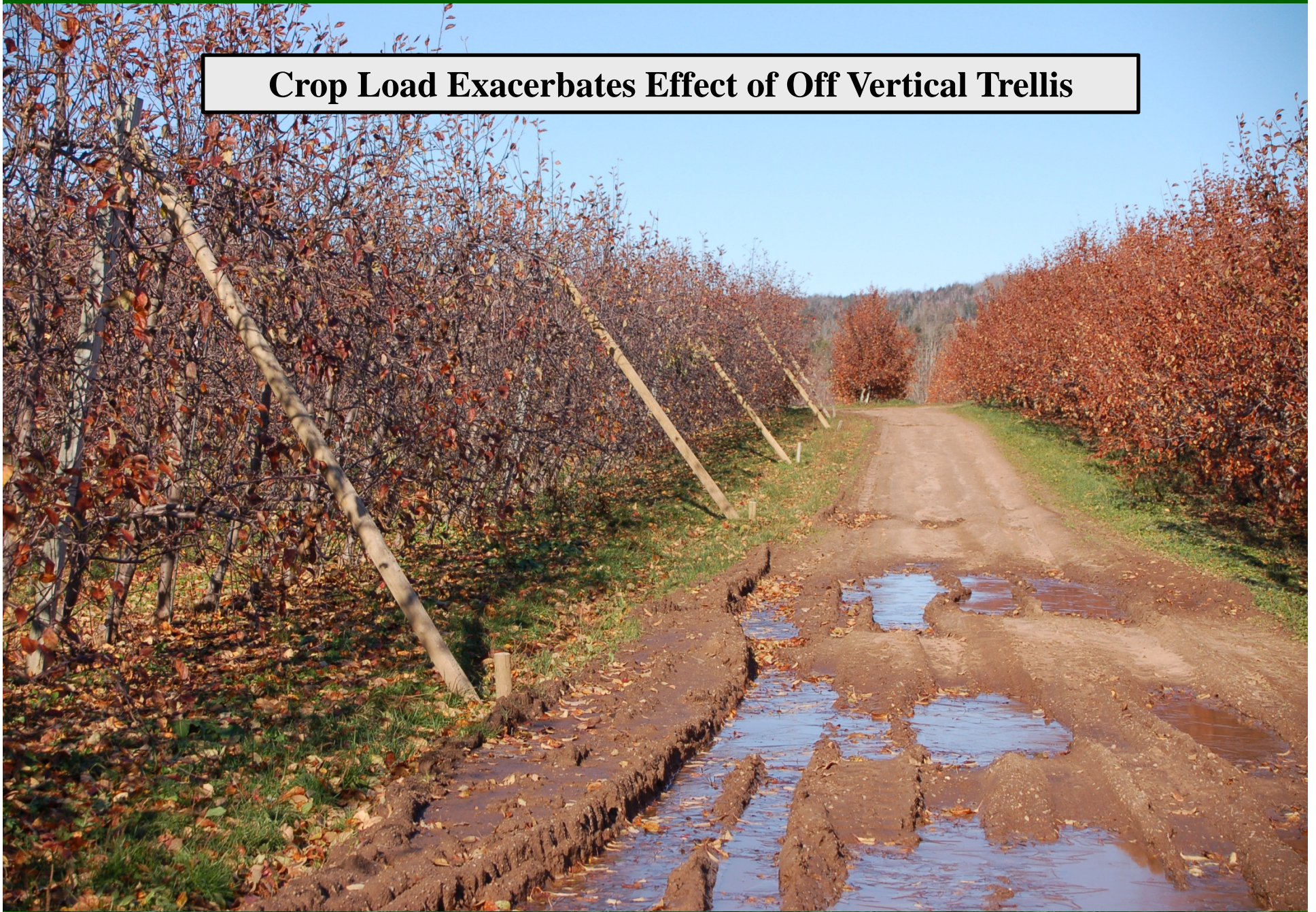


## Line Posts Too Shallow





## Crop Load Exacerbates Effect of Off Vertical Trellis





**Used Only One High Wire; Conduit Clips Failed**





## 4-6 Wire Trellis



## Properly Installed 5 Wire Trellis





**All Wires Running to Anchor**





**Trees Slipping Along Trellis Wire Where Plastic Tree Tie Used**





**Plastic Clips**





**Plastic Waste**





## High Tensile Wire “U” Clip





## Wind Chafing





**Ingrown “U” Hook**





**Little Effect on Tree Growth**





## Unsupported Leader- Time for Another Wire





## 12.5 Ga High Tensile Wire





**Don't Drop Wooden Coils or leave Outside in the Rain...**





**Flat Coils Have Less “Memory”**







**Keeping Things Snug...**



## Gripple's





## Gripple Tool





## Dare™ Ratchet Tighteners and Tool







**Gallagher Tightener and Tool**





**Grower who used ½" Ratchet to Tighten Gallagher Tightener**





**And Most Important...Varieties**

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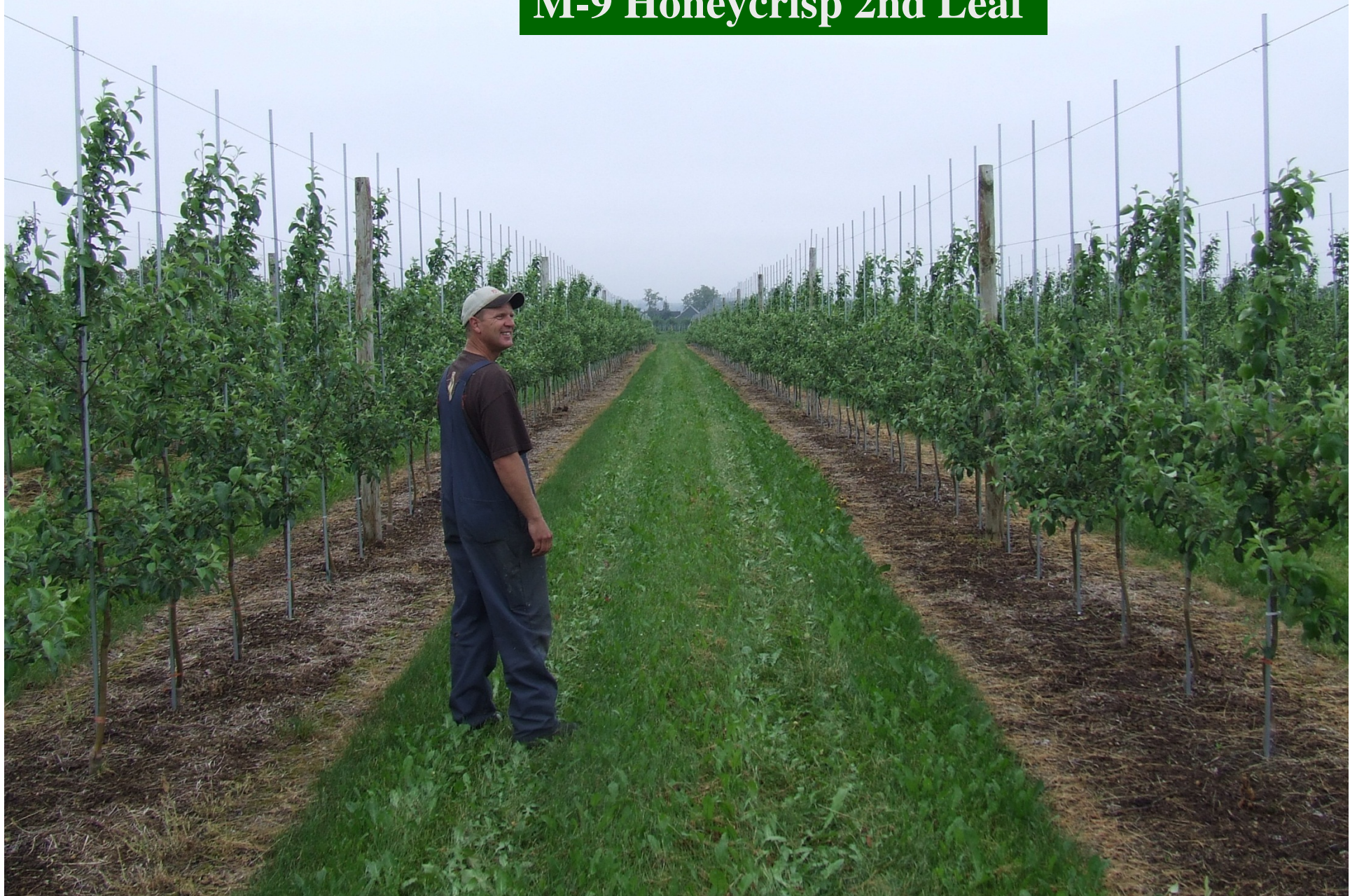


# So What Happened?

- When we started doing everything right the trees began to grow and produce to their potential
- Began planting M-9 size trees instead of MM-111
- Went from being accepting of 400 bu/acre to expecting 1000 bu/acre and beyond
- Stopped using climatic limitations as an excuse
- Began taking advantage of our climate to produce full red, high value varieties



## M-9 Honeycrisp 2nd Leaf









## So Where To Now?

- We still have lots to learn
- Should never be too confident
- Replant disease is a huge problem in our low vigor climate
- Hopefully Geneva rootstocks and proper soil preparation will help us if we lose soil fumigants
- Honeycrisp has passed McIntosh in volume and is now our #1 variety and has funded a lot of our replanting efforts
- What's the next one to come?
- You get lucky every once in a while.



**But for now the Woodchuck  
is happy...**





And so are the  
growers....









**Thank you**

