Precision Hand Thinning

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Hand thinning facts

- It is not new, widely practiced, common
- Last chance to reduce crop load levels to acceptable levels
- Too much hand thinning as a result of fear of over-thinning chemically
- Important, necessary evil for high value cvs., such as Gala, NY1
- Ideally, reduce crop load via pruning, chemical thinning, then hand thinning just as a final “touch up”

Benefits

- To increase fruit size
- To improve color by singling fruit within the cluster
- To balance the number of resting spurs with fruitful ones ensuring return bloom
- To improve pest control by exposing clustered fruit
- To balance continued growth (Young Trees) with cropping to help fill out the canopy

When to hand thin?

- Almost anytime between fruit set and harvest, see dates in NY via You Tube video
- If done within 6 weeks of bloom and before fruit bud initiation (early hand thinning), it will not only help prevent bienniality but will give the maximum fruit size improvement
- If done late it will only help to marginally increase fruit size
- In some cases, it is used to grade fruit by removing damaged fruit (hail) but it will not contribute to return bloom

Implementing precision hand thinning

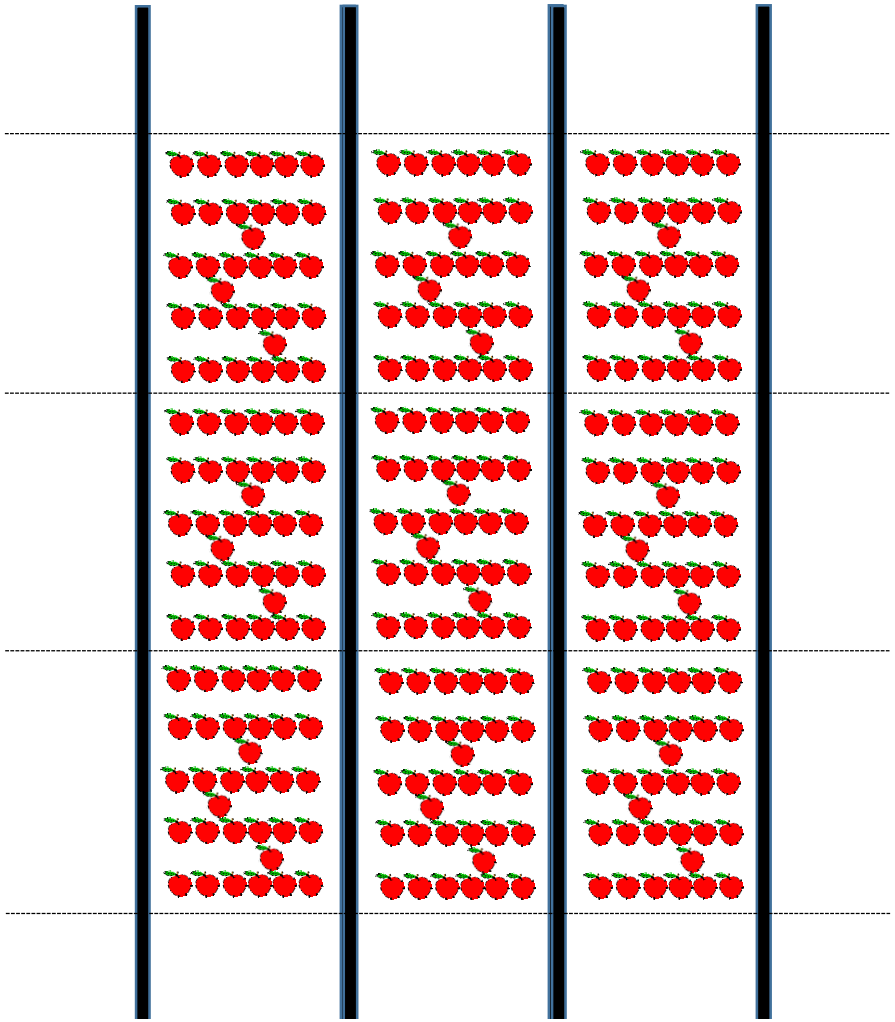
- Count fruit on 5 representative trees
- After counts, your trees averaged 154 fruit/tree (after pruning and chemical thinning)
- Your target number of fruit/tree is 100 (to produce 1,200 Bu/A of 100 counts)
- Substract 100 fruit from the 154 fruit remaining (54 fruit to remove by hand)
- By singling fruit you remove 36 fruit
- Then you choose 18 more fruit by selecting those that are the smallest fruit, misshapen, or those that are clustered and touching

How to use the trellis, or some template, to help you guide “zone thinning”

4-wire trellis

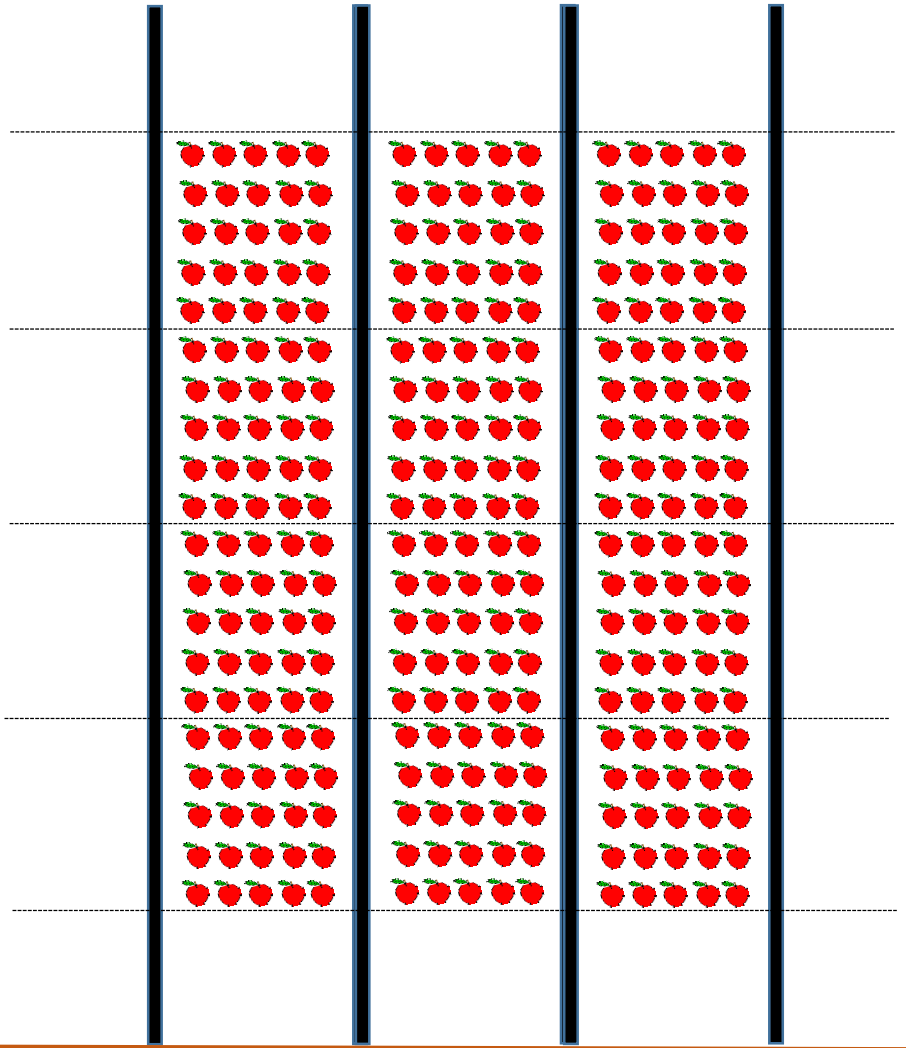
5-wire trellis

4-wire trellis

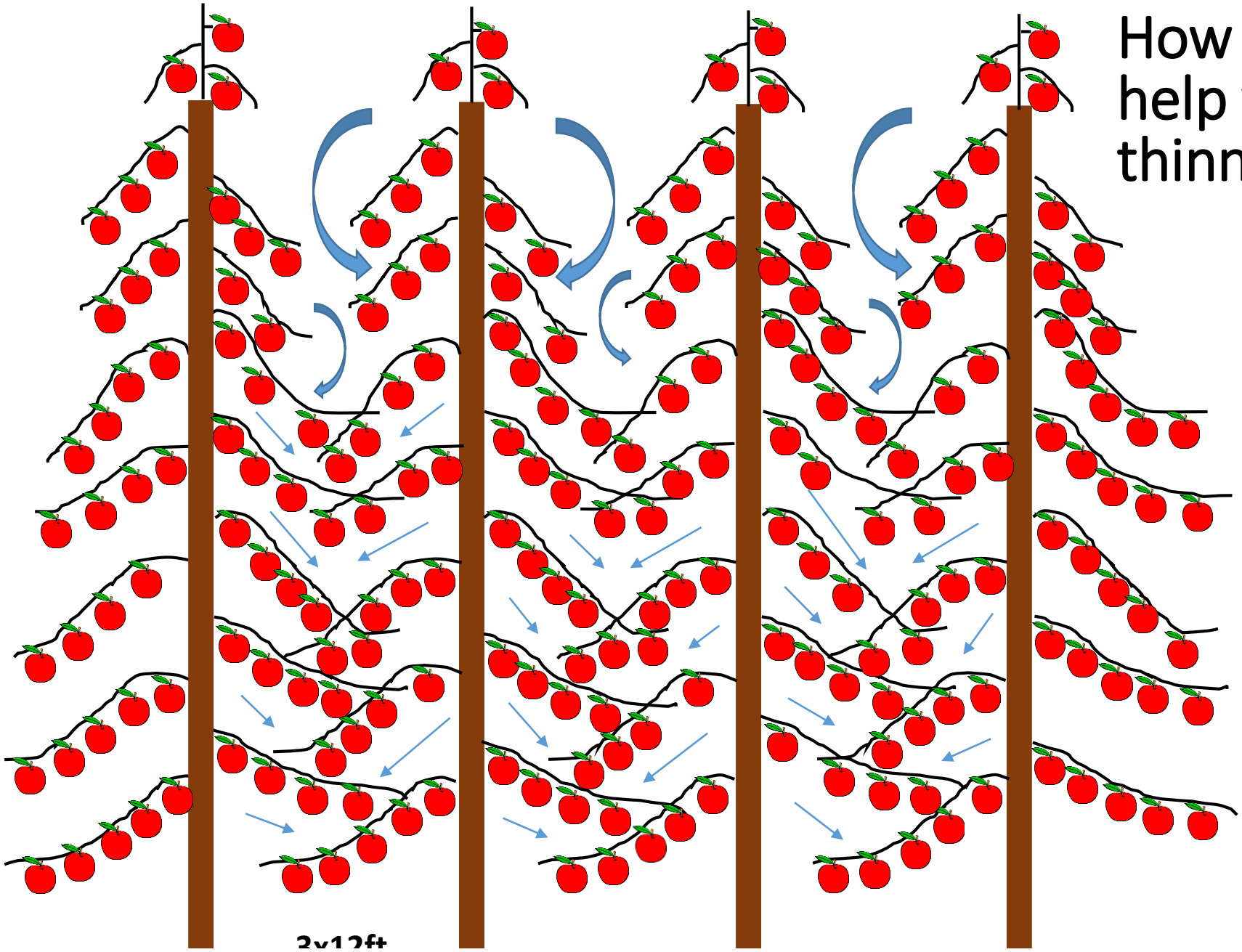


- The simplest method for zone thinning is to use some sort of an area template so that workers who are hand thinning know how many fruit there should be within a smaller but specific area of the tree
- Use the area between two adjacent trees and two adjacent wires
- A four wire trellis has 3 sections between wires
- 33 apples in each section to equal 100 apples/tree
- There will be a few additional apples between the bottom wire and the ground and above the top wire

5-wire trellis



- The simplest method for zone thinning is to use some sort of an area template so that workers who are hand thinning know how many fruit there should be within a smaller but specific area of the tree
- Use the area between two adjacent trees and two adjacent wires
- A five wire trellis has 4 sections between wires
- 25 apples in each section to equal 100 apples/tree
- There will be a few additional apples between the bottom wire and the ground and above the top wire



How to use the shoots to help you guide "zone thinning"

- Divide the total number of apples per tree by the number of shoots per tree to determine how many apples should be on each shoot
- The typical tall spindle will have ~20 fruiting shoots per tree.
- If your target is 125 fruit per tree there should be ~6 apples per shoot
- Reduce fruit numbers to 6 per shoot by first singling fruit on spurs then by spacing fruit where they are touching along each shoot

Summary

- Hand thinning is not new and is widely practiced
- However, implementing a procedure to count fruit and reduce fruit number to a targeted number is less common
- Improving precision by counting and targeting fruit numbers will improve profitability
- Fruit growers could implement **“zone thinning”** or similar method to accurately count fruit immediately and see an immediate impact on their profitability
- In the near future, terrestrial vision systems will bring a new level of precision to fruit counting and much more