



PREVENTING HAND INJURIES WHILE PRUNING FRUIT TREES

Beatriz Rodriguez *NC AgrAbility Project Manager*

Ned Stoller *ATP Michigan AgrAbility*

2020 AgrAbility National Training Workshop

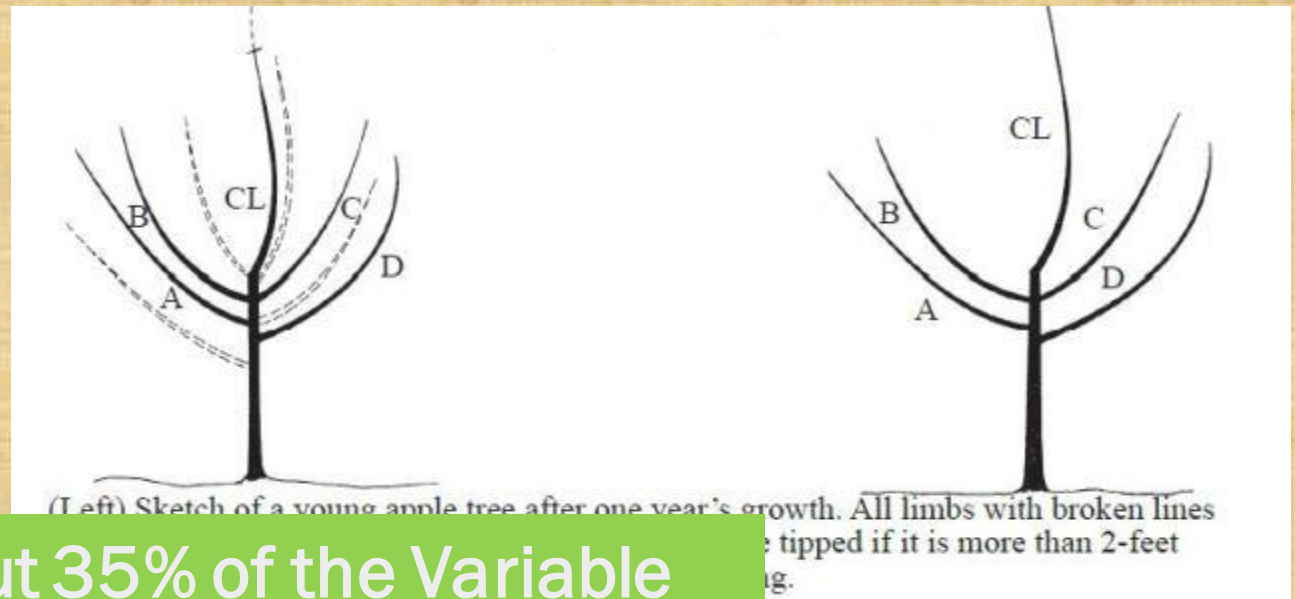
March 23-26, 2020 - Madison, Wisconsin

Trimming

Pruning:

- Leading
- Thinning

Training



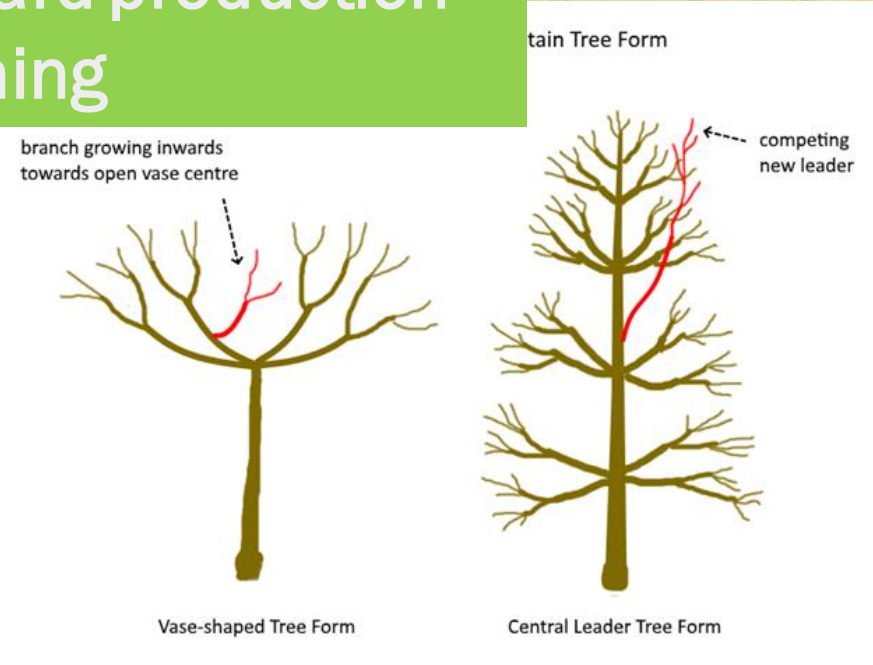
About 35% of the Variable Cost in orchard production goes to pruning

CENTRAL LEADER TREE TRAINING



BEFORE PRUNING

AFTER PRUNING



Vase-shaped Tree Form

Central Leader Tree Form

Pruning and Training

Involve:

Hand	wrist
forearm	elbow
arm	shoulder

Require:

- repetitive motions
- awkward postures
- excessive force
- long hours

Health Concerns

Cumulative injuries and musculoskeletal disorders (MSDs) have become an increasingly recognized issue of concern in agricultural production.

The DHHS and the NIOSH have identified the risk of overexertion and repetitive motion as a goal to reduce the rate of lost time injury and illnesses.

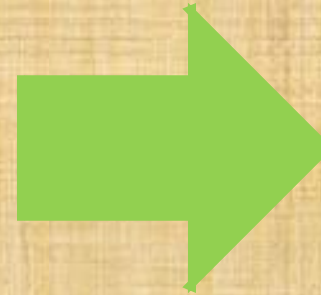
Understanding the Physical Demands

Provide a better view on how to reduce or minimize exposure of workers to the risk of injuries and disorders of the upper limb.

Ergonomics

Human abilities
and limitations

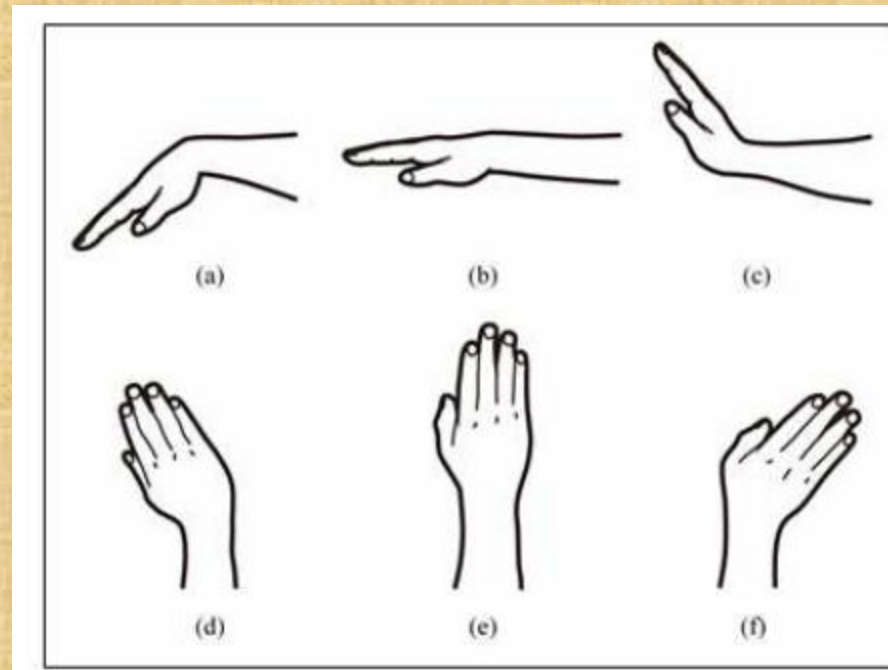
Products, Systems,
and Environments



Musculoskeletal disorders (MSDs) are injuries or pain in the human musculoskeletal system, including the **joints, ligaments, muscles, nerves, tendons, and structures that support limbs, neck and back.** MSDs are increasingly recognized as a significant hazard of agricultural occupation.

In agricultural jobs with significant physical labor, MSDs are typically the most frequently reported injury and are among the costliest health care problems facing society today.

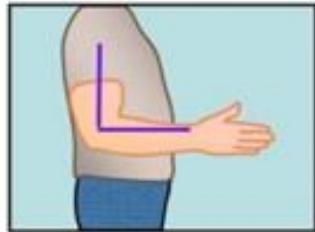
Wrist Position



The wrist position affects your ability to grip

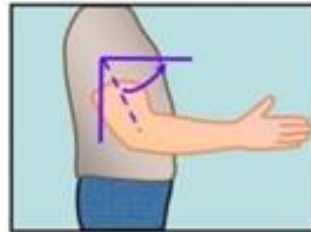
Shoulder Position

Neutral Posture

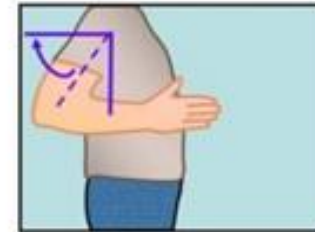


Awkward Postures

Shoulder Flexion



Shoulder Extension



Shoulder Abduction

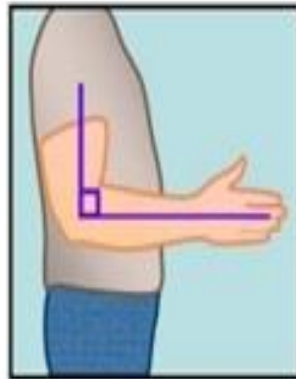


Shoulder Abduction & Extension



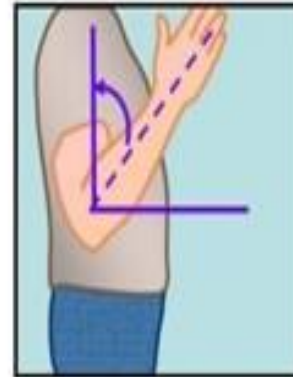
Elbow Position

Neutral Posture

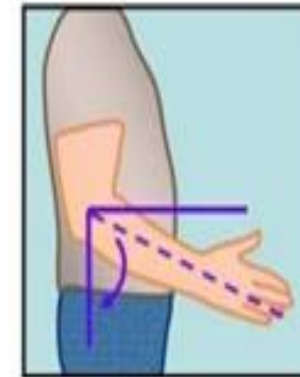


Awkward Postures

Elbow Flexion



Elbow Extension



Keep Everything at Easy Reach



Work at Proper Heights

**Do most work at elbow
height**

Keep lifts between hand level
and shoulder level. Avoid lifts
from the floor or over
shoulder level



Minimize Pressure Points



Proper Tool Selection



Reduce Excessive Motions

- Repetitive motions
 - Awkward body positioning
 - Excessive force
 - Vibration
- Allow *enough time in between* for *adequate recovery* by having the worker alternate with a low-repetition task.
 - For example, other tasks that don't require repetitive hand motions, like *carrying* the finished boxes to the loading area.
 - Use your *larger muscles*
 - One of the simplest ways to reduce manual repetitions is to use *power tools* whenever possible.

Minimize Fatigue and Static Load

- Allow enough time in between for adequate recovery
- Sitting down while working reduces the strain on the lower back and legs. Standing causes legs to swell (more than walking does)
- Set time to schedule rest breaks



Move, Exercise and Stretch

- To be healthy the human body needs to be exercised and stretched
- For a physically demanding job, you may find it helpful to stretch and warm up before any strenuous activity
- The best jobs are ones that allow workers to do different types of work, changing from sitting to standing to walking and back again

Maintain a Comfortable Environment

Adjust Working Stations

Adapting tasks, workstations, tools, and equipment to fit the worker can help reduce physical stress on a worker's body and eliminate many potentially serious, disabling work related musculoskeletal disorders





BROWNIE

ENERGIZER





















Best Seller Premium Rat

SUPERB FOR HEAVY WORK - RATCI

Made exclusively for Garrett Wade

★★★★★ [Read All 306 review\(s\)](#)

Stock Number	Item Description
11G12.01	Heavy Duty Anvil Lopper
11G12.02	Heavy Duty Bypass Lopper
11G12.10	Both Heavy Duty Loppers
11G12.11	Replacement Blades, HD Anvil Lopper
11G12.12	Replacement Blades, HD Bypass Lopper







Tool Balancer



***“TRIM MORE
HURT LESS”***

MAKES PRUNING TOOLS WEIGHTLESS AND MORE MANEUVERABLE

With this new attachment the operator can trim with a hydraulic gun or saw all day and not have the discomfort or injury to wrists, arm or back caused by the weight of these tool's.

This also gives the operator more reach by keeping his hands back further on the tool, and allows a person to use longer tools without the disadvantage of the weight, this extra reach saves time with less maneuvering of the machine.

The advantage of pruning faster with less discomfort or injury makes this attachment a must on nearly every pruning machine.











Comparison Of Pruned Part Of Tree Vs. Unpruned Part Of Tree



Pruning



Bottom M





PREVENTING HAND INJURIES WHILE PRUNING FRUIT TREES

Beatriz Rodriguez *NC AgrAbility Project Manager*

Ned Stoller *ATP Michigan AgrAbility*

Questions?