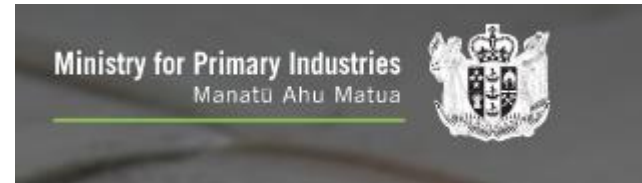


Kiwifruit Winter Pruning



Topics

- Aim of the course
- Introduction to the Kiwifruit Industry
- Health and Safety in the Orchard
- Basic Theory of Winter Pruning

Aim

Wood Types

Varieties

Vines

Specifications

Cuts

Tying Down

Plant Health

Tools

- Practical Demonstration

consultancy ●

training ●

innovation

Aim of the course:



- Introduce people to the kiwifruit industry
- Introduce people to kiwifruit winter pruning
- The WHY and HOW

[NZKGI Labour Attraction Video](#)

The Kiwifruit Industry

The Kiwifruit Industry – Who's who?



Source: 2019 Kiwifruit Book, NZKGI

The Kiwifruit Industry – Who's who?

Zespri – owned by kiwifruit growers. Responsible for the marketing of all kiwifruit internationally (except into Australia).

Growers – owners of kiwifruit orchards.

Management Companies – companies who manage orchards on behalf of growers or packhouses.

Packhouses – companies who manage orchards, pack and store kiwifruit.

Contractors – contracted by growers, management companies or packhouses to manage vines and harvest fruit.

Contractors

- Must be registered with Zespri to work on kiwifruit orchards
- Must comply with industry Good Agricultural Practice (GAP) and Global Risk Assessment on Social Practice (GRASP)
- Must hold a CAV (Compliance Assessment Verification)
- <https://industry.zespri.com/contractors/gap-grasp-contractor-list>
- [NZKGI Little Green & Gold Book](#)

Health and Safety

- Orchards can be dangerous places
- We need to ensure you are safe while on the orchard
- We need to ensure you keep others safe

Activity: Why do you think horticulture may be a relatively dangerous place to work?

Currently ... on a NZ Farm

1 farmer is killed every 18 days

13 farmers are seriously injured every day

Causes of Injuries - Horticulture

Injury Causing Factor	% Claims	Dominant Injury
Lifting & straining	29%	Produce, building materials, loading and unloading
Repetitive work	23%	Picking, pruning, harvesting, sorting/bagging and noise
Slips, trips & falls	19%	Ladders, wet surfaces, uneven ground
Vehicles & towed implements	14%	Slipping off machinery, struck by towed implements, repetitive driving, run over, hit by tree branch
Struck by object	11%	Tree branch in face, wire, building R & M material, saws and knives
Total	96%	

Activity

- Discuss with the class examples of injuries or near hits you know of in horticulture

Employer Responsibilities

- Identify all hazards in the workplace
- Assess the hazards, ensure controls are in place to manage significant hazards
- Provide personal protective equipment
- Keep records of training
- Maintain accident/incident register
- Maintain suitable first aid kit
- Discuss Health & Safety with staff

Employee Responsibilities

- Ensure own safety while at work
- Make sure that no actions or inactions cause harm to any person
- Follow instructions
- Use personal protective equipment provided
- Advise your employer of any hazards
- Participate in health & safety discussions

How Do you Manage Hazards?

1. Identify the Hazards

- What are Hazards?

2. Deal with the Hazards (consider controls)

- Eliminate
- Minimise

Each orchard you work on will have their own unique hazards and controls

Kiwifruit Annual Production Cycle



The Aim of Winter Pruning

- Aim is to get the right number of high quality one year old buds, evenly spaced and tied down across the canopy



<https://www.facebook.com/watch/?v=508983293241500>

Kiwifruit Varieties



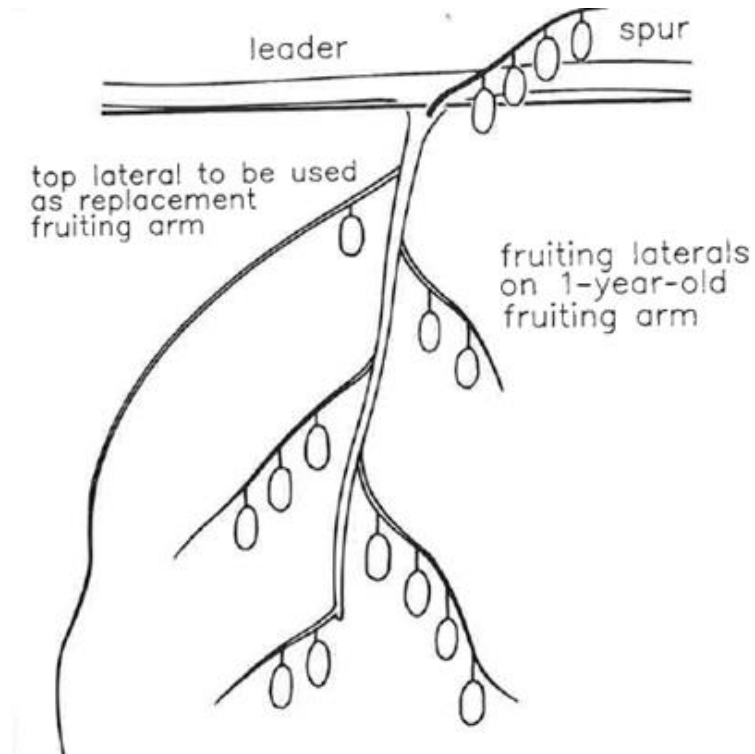
Source: Plant and Food Research

Each variety has its own unique growing features and pruning styles differ accordingly

The Kiwifruit Vine



Kiwifruit Wood Types



Male and Female Kiwifruit Vines

- The kiwifruit plant is dioecious – i.e. it has separate female and male vines
- The female vines carry fruit
- The male vines are there to provide pollen to pollinate the fruit
- Female vines occupy around 90% of the canopy area
- Male vines are contained in a small space



Male and Female Kiwifruit Vines



consultancy ●



training ● *innovation*

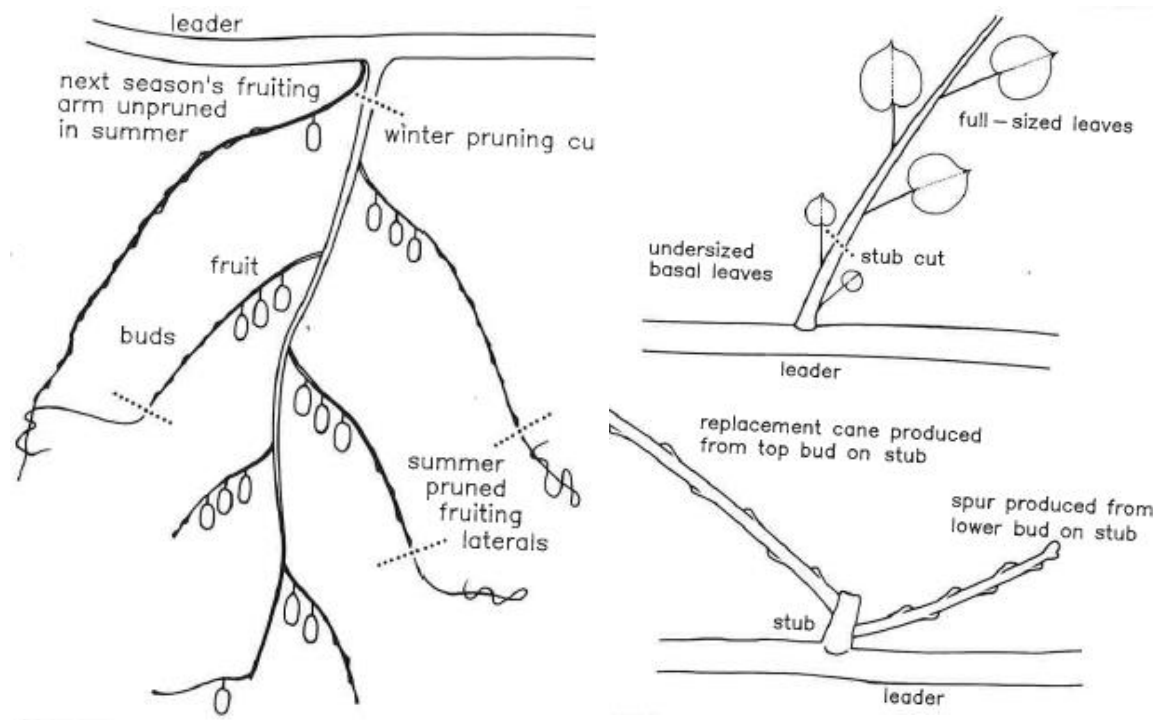
Kiwifruit Annual Production Cycle



Pruning Specifications

- Each grower will have their own targets and their winter pruning specifications will differ accordingly
- Growers may specify:
 - Cane spacing
 - Cane quality
 - Winter bud number
 - Special instructions re leader development, young vine training, winter male management

Kiwifruit Pruning Cuts

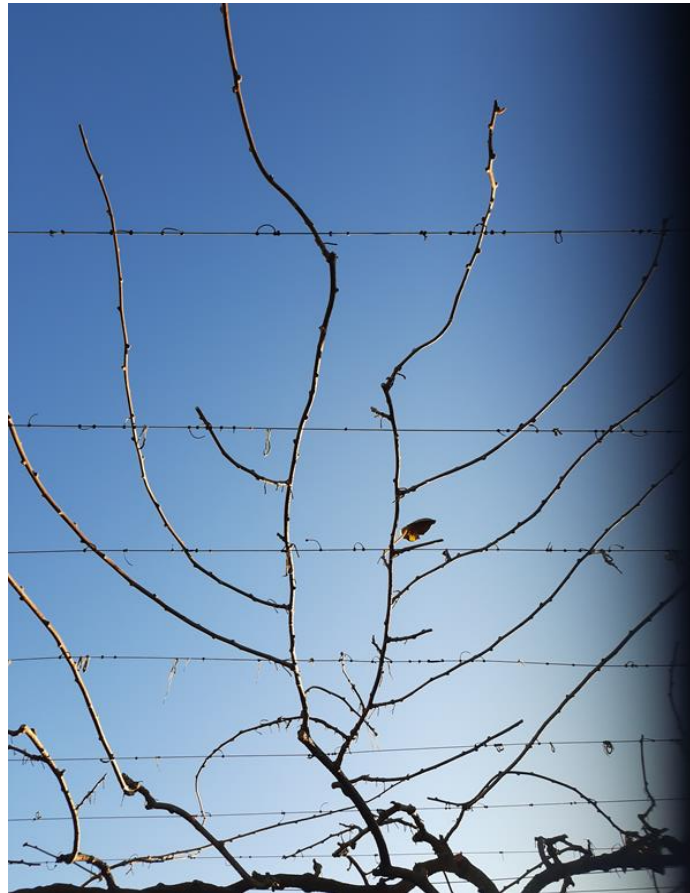


Parts of the kiwifruit vine and various pruning cuts

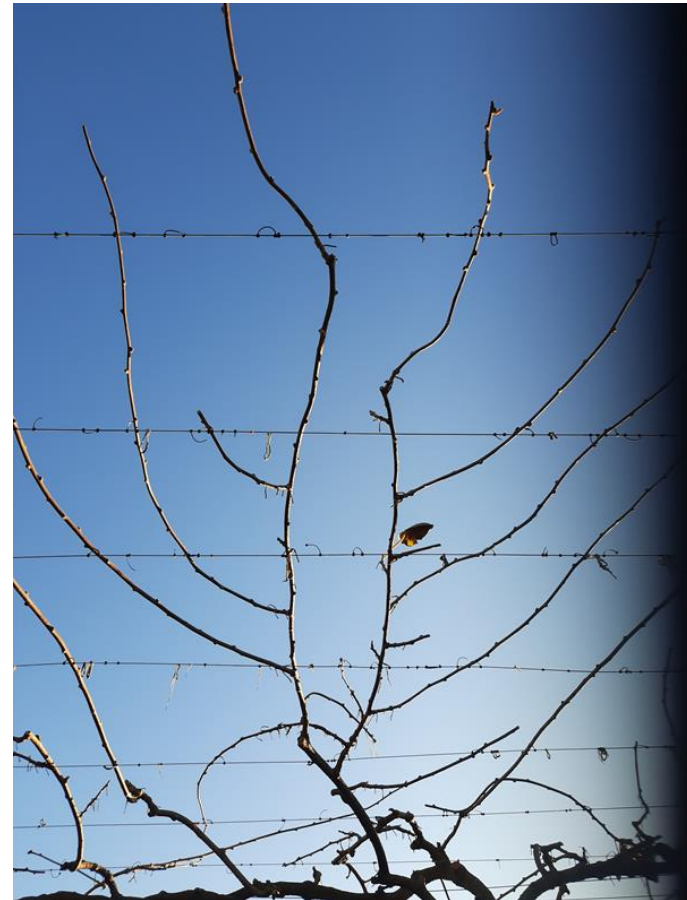
Gold Kiwifruit Vine - Before



Gold Kiwifruit Vine - After



Gold Kiwifruit Vine – Before & After Winter Pruning



consultancy ●

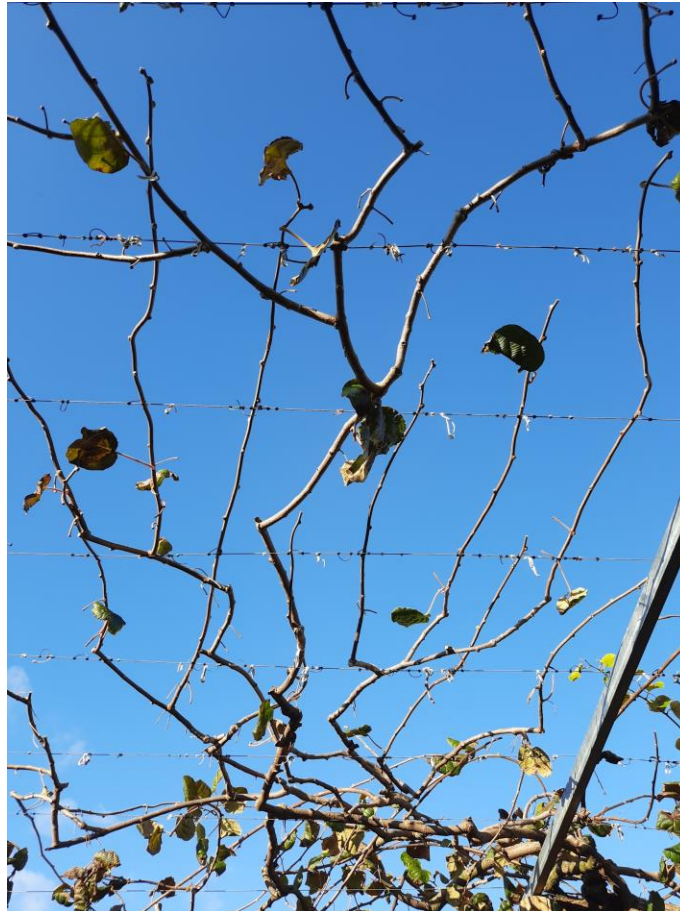
training ●

innovation

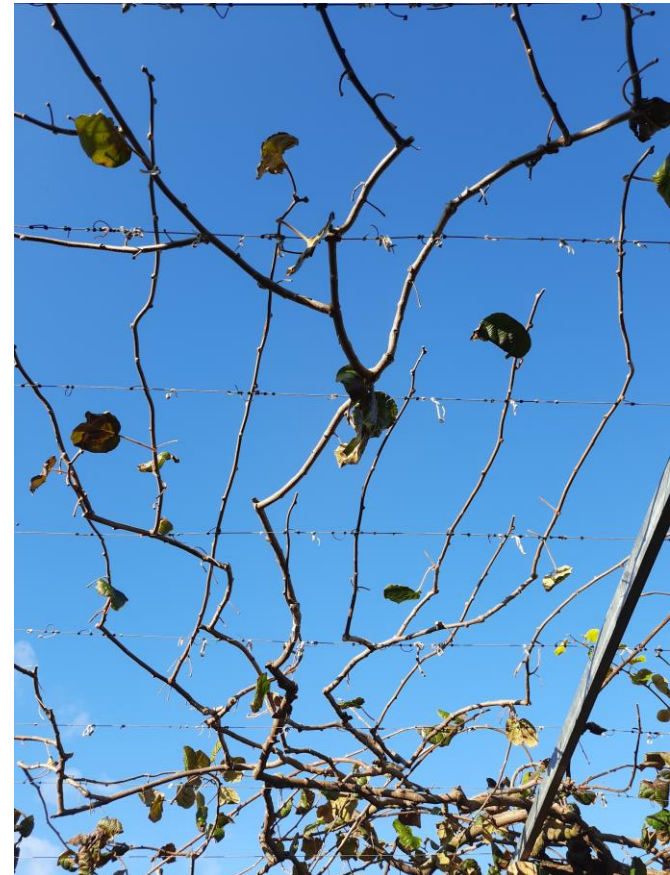
Green Kiwifruit Vine - Before



Green Kiwifruit Vine - After



Green Kiwifruit Vine – Before & After Winter Pruning



What you want to cut out

- Assess the whole vine and its neighbours
 - Are there any big gaps that will need to be filled?
- Is there any heavy or diseased wood that needs to be cut out?
- Does the leader need to be renewed?







Tying Down

- A key activity
- A chance to finetune pruning
- Aim to spread wood across the bay evenly and hold it there
- Use clips and ties (great to reuse clips)



Tying Down Results



Plant Health

- Kiwifruit diseases can be spread by workers on the orchard
- Some of these diseases kill vines
- Follow instructions from your supervisor regarding tool hygiene, pruning paints and working in wet conditions

Painted wound callused and healed



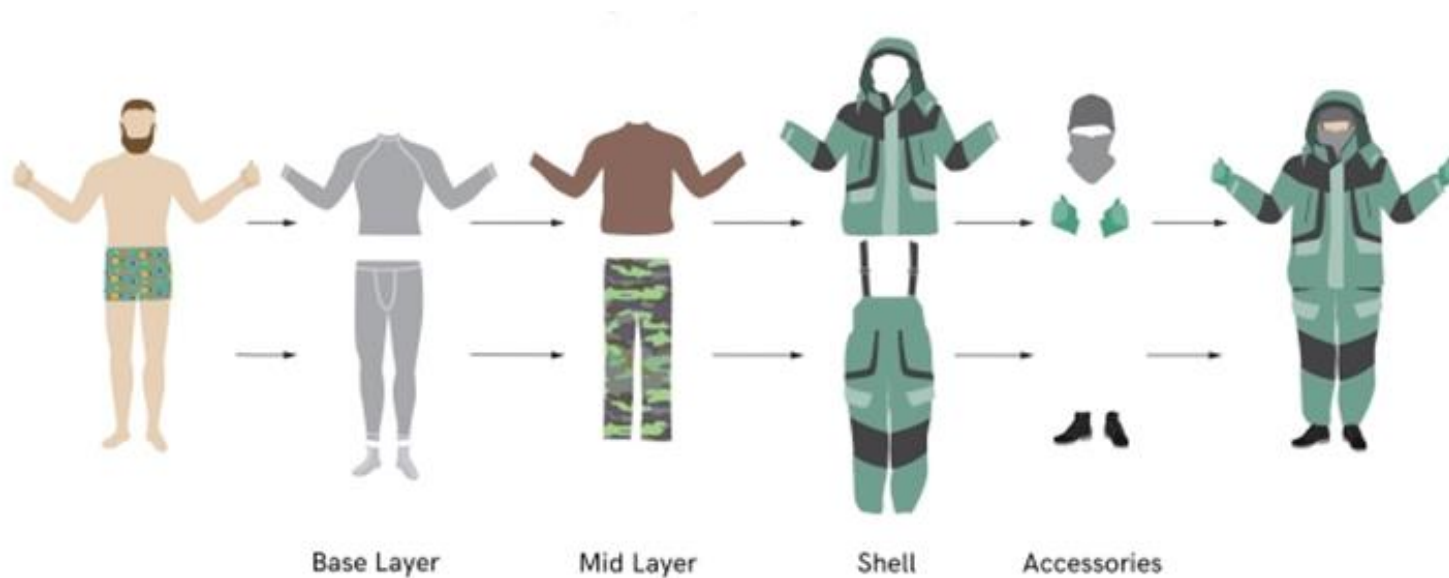
Unhealed wound



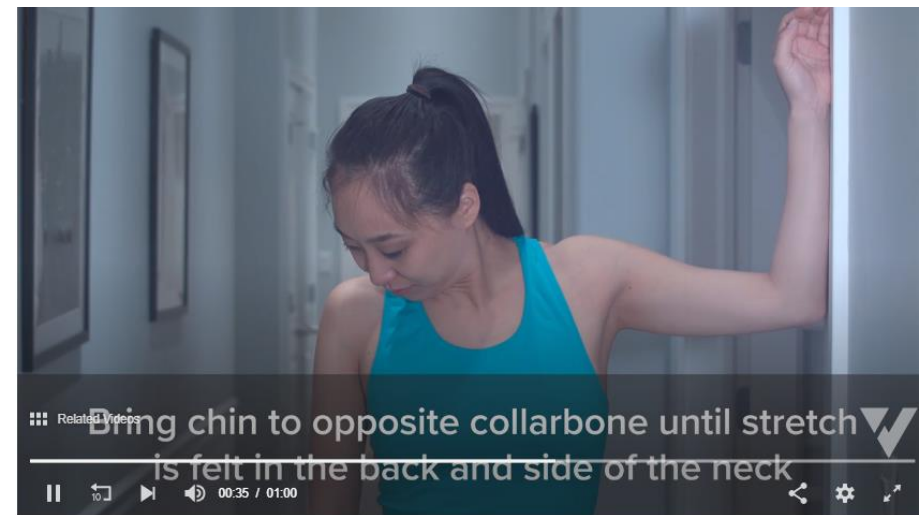
Tools

- Secateurs
- Loppers
- Saw
- Pouch
- Belt
- Paint Bottle
- Spray Bottle
- Eye Protection

Keeping Warm - layering



Warm Up/Stretches



<https://vimeo.com/163348316>

<https://www.spine-health.com/video/4-easy-stretches-neck-and-shoulder-pain-video>

On Orchard

- Health and Safety Briefing
- View pruned and tied green and gold vine
- Watch a vine being pruned and tied
- Discuss maintenance of pruning tools
- Exercise identifying wood types
- Course evaluation