

Narrow Orchard Systems (NOS) Cherries in the Adelaide Hills

Hort Frontiers | AS22002

Andrew Flavell's NOS demonstration

Field Walk – 6 August 2024

Andrew Flavell is working with the South Australian Research and Development Institute (SARDI) to demonstrate four new planar growing systems for sweet cherry varieties grafted to Krymsk-5 rootstock in the Adelaide Hills environment.

The four systems (shown on p2) include:

- Single cordon Upright Fruiting Offshoot (UFO)
- Bi-cordon UFO
- Narrow-V
- Central Leader Breaking Espalier (CLBE), a planar adaptation of the pergola system

Following a recent visit by Netherlands consultant, Ronald Vermeulen, Andrew has also begun testing the non-planar pergola breaking system.



Matt Flavell and Netherlands consultant Ronald Vermeulen discussing the training of Bi-cordon UFO at Lobethal in 2024 (Photo. D Graetz, SARDI).

Potential benefits of narrow production systems:

- Rapid return on investment
- Fruit quality improvements
- Lower operating costs (improved efficiencies)
- Safer orchards that are more attractive to labour
- Accelerated adoption of AgTech
- Climate resilience

Adelaide Hills demonstration of planar cherry production systems using a precocious dwarfing rootstock with SARDI's locally bred cherry varieties.

SARDI is contributing technical advice to the Flavell cherry orchard that covers the establishment and maintenance of narrow orchard systems, the tracking of labour inputs and the monitoring of canopy and production metrics.

Measures of orchard performance at the Flavell site are complementing those collected at other NOS orchards around the country.

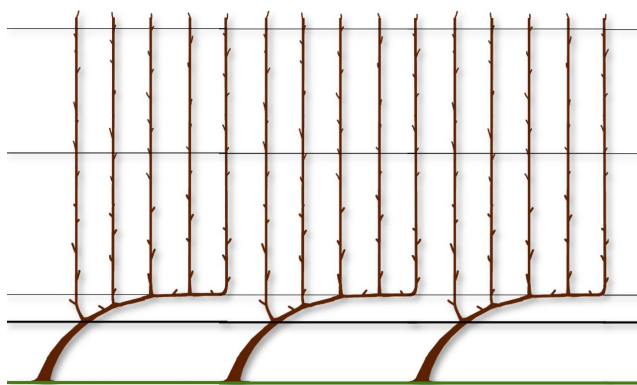
Learnings from NOS orchards around Australia will be shared with Adelaide Hills growers through the Hort Frontiers Narrow Orchards program.

Partner NOS orchards aligned to the cherry demonstration include those in Victoria (cherry, nectarine, plum, apple and pear), Western Australia (apple) and South Australia (apricot and cherry).

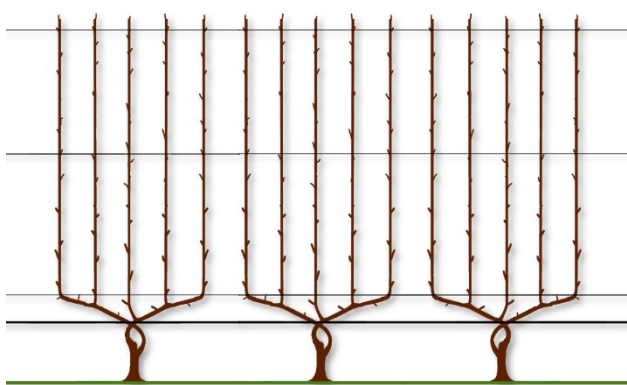


Single cordon UFO demonstration at Andrew Flavell's, Lobethal, 22nd February 2024 (Photo. D Graetz, SARDI)

Single cordon UFO

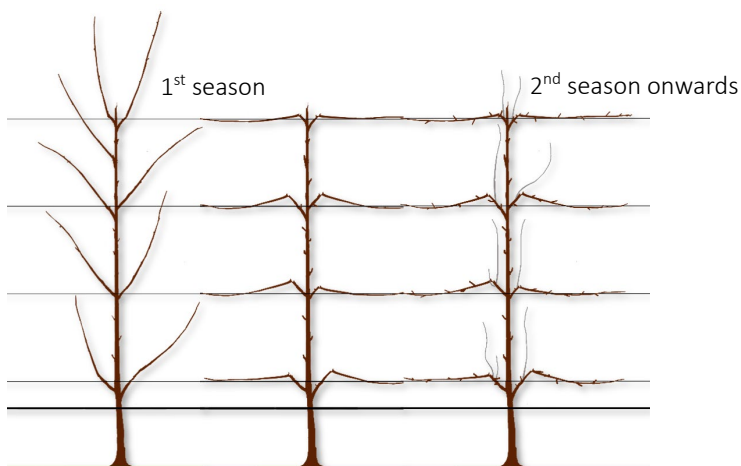


Bi-cordon UFO



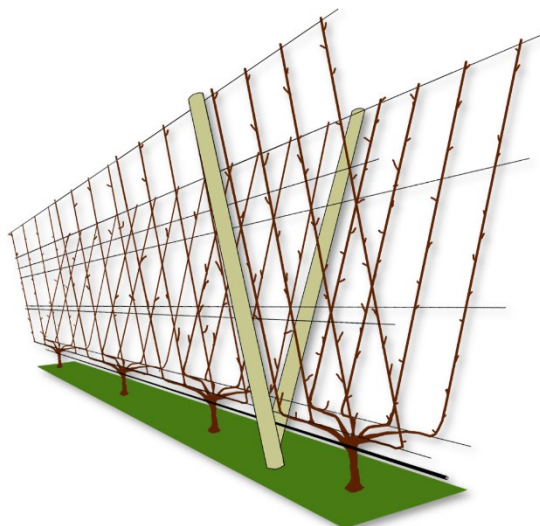
- Narrow planar canopies that allow easy access for workers and efficient spray coverage.
- Vertical with good light penetration and air flow.
- Simple canopy management but requires dedicated intervention to renew productive shoots.
- Suited to narrow row spacings (and flat sites) to maximise productive canopy area.

Central Leader Breaking Espalier (CLBE)



- Always three phases of shoot growth in canopy:
 - New extension growth (broken to wire late summer)
 - 1 yr old wood (developing fruit buds)
 - 2 yr old wood (cropped then removed)
- Breaking promotes shoot and bud development
- Biennial bearing is minimised as shoot regeneration ensures fruiting wood is only cropped once.

Narrow V



- Narrow twin plane system
- Suited to slopes
- Simple canopy management but requires dedicated intervention to renew productive shoots
- Good light interception
- Large canopy area, even in wider rows

