

Inter-Row Cover Crop Species Selected for Trial Fruit Growers Victoria Infosheet #5

Orchardists will have different needs and wants for type of cover crops based on crop type, soil type, and micro-climate factors. Here we cover the species selected for this trial and considerations with each.

Type	Species selected	When to use	Considerations
Legume	Lucerne	- Nitrogen Fixing symbiotic relationship with rhizobium bacteria (nodules on roots) - Deep root growth - Attracts pollinators - Forms arbuscular mycorrhizal associations	- Do not apply N-fert or else nodulation will be impaired - Consider possible impact of N if legume mown onto tree row during different times of season - Not shade tolerant - Requires adequate soil moisture
Brassica	Canola	- Biofumigant properties from release of 'glucosinolates' - Evidence of working against soil borne pests & diseases - (<i>Verticillium</i>, <i>Rhizoctonia</i>, <i>Fusarium</i>, <i>Pythium</i>, <i>Sclerotinia</i>) and range of nematodes - Taproot which can help break up compaction, and scavenge for nutrients	- For max biofumigant benefit - grow biomass and incorporate into soil before full bloom (mulch and shallow till) - Will not form microbial mycorrhizae (Phos, N) - Not shade tolerant - Yellow flower attracts insects
Grass	Oxley Wallaby Grass (Native)	- Grasses can have dense root system - Grasses can be fast growing (shelter for insects, ground cover) - Can be more drought tolerant, lower water use	Some grass species can grow tall so select a low-growing variety to help reduce mowing requirements



Above: Photo taken from trial in Nov 2022 after first sowing - germination rates were good but delayed timing meant lack of light and pest pressure impaired growth.



Right: Canola plant assessed for root growth in modified irrigation treatment.

Things to Consider:

1. Understand **farm environmental factors** (soil type, topography)
2. Decide on **goals** (build Organic Matter, build N stores)
3. Decide **timeframe**: 1-5 year plan
4. Select **cover crop species** (single or multiple)
5. Decide on **weed management** strategy (tilling, herbicide, both)
6. Decide on **sowing machinery** and method (direct drill, broadcast)
7. Decide **ongoing maintenance** (rolling, crimping, mowing alternate rows for insect shelter, mow'n'throw, herbicide use)
8. **Monitor and assess** (root growth, insect activity, vigour, soil, weeds)

More notes regarding preparation of sowing area:

- Timing - traffic, sunlight penetration, crop activities, flowering timing
- Weeding - dominant weeds will take time to address and ongoing efforts
- Weather dependent - too dry or too much soil moisture may dictate plans

Further Information

- **Hort Innovation & Ag Victoria** - <https://extensionaus.com.au/ozapplepearipdm/benefits-of-cover-cropping/>
- **Wine Australia and EcoVineyards** - <https://www.wineaustralia.com/growing-making/vineyard-management/cover-crops>
- **USA cover crop extension notes** - <https://intermountainfruit.org/orchard-floor/cover-crops>