

Winter cover crops

Tools for soil management

Match your main soil management aim to the southern Australian winter cover crops below

Main aim	Crop	Comments
Build soil structure	Ryegrass — a clear favourite All other crops below will also build soil structure, but to a lesser extent	High root activity stabilises soil. Foliage protects soil surface, mulches well and provides excellent organic matter input. Encourages mycorrhizal (VAM); good for some crops eg onions
Add cheap nitrogen	Peas Clovers Lupins Vetch	Use a rhizobium inoculate. For legumes to fix nitrogen nitrate levels in the soil should be below 150 kgN/ha. Expect legumes to fix between 100 and 200 kgN/ha — the bigger the crop, the more N fixed.
Recover and store left over fertiliser	Mix of fibrous and deep rooted crops eg ryegrass and brassica	Capture and store nitrogen to prevent leaching or loss to the air over winter. Recycle nutrients from deep in the soil. Use these cover crops when soil nitrate levels are above 150 kgN/ha.
Soil pest and disease control	Biofumigant brassicas (typically canola, <i>B. Napus</i> ; Indian mustard, <i>B. Juncea</i>)	Use high glucosinolate varieties. Aim to incorporate 100t/ha fresh biomass. Incorporate when flowering, mulch finely and incorporate into the soil rapidly. Soil should be moist.
Weed control	Fast early growth crops, eg wheat, barley, oats Brassicas	Use 30% greater sowing rates than normal to outcompete weeds. Brassicas can suppress weeds over and above the direct competition of the fast growing crops listed above it.
Protect the soil surface from wind and water erosion	Ryegrass, wheat, barley, oats	High biomass crops good. Management of the mulch varies depending on the following crop.

When choosing a green cover crop also consider your overall rotation and potential pest and disease carry over.

This table provides an overview of winter cover crops for southern Australia.

Growers should seek additional information to tailor this to their specific situation.

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