

CEREAL STUBBLE IDEAL FOR GRAIN LEGUMES

**Jay Cummins
District Agronomist
South Australian Department of Primary Industries
Lameroo**

Introduction

Grain legumes are ideally suited for direct drilling into cereal stubble. Cereal stubble does not affect grain legume growth or yield. The legume's large seed size and tolerance to variations in sowing depth allows them to safely emerge through stubble. Stubble should be left on the soil surface. Attempts to break up and bury it with repeated harrowing and workings will damage the soil structure, negating any benefit from retaining it.

Stubble left on the surface also protects soil from erosion while the grain legume becomes established; it reduces problems with nitrogen tie-up, and seed is not sown among loose straw. Provided incorporation is adequate, moderate quantities of stubble (up to 3 t/ha) will not interfere with herbicides such as Trifluralin.

A prickle chain, cultivator, or rolling harrow will incorporate the herbicide, as will sowing followed by harrowing. The herbicide should be incorporated immediately after application. Use equipment with good stubble clearance for sowing. Suitable harrows that handle stubble include properly set finger tine harrows, prickle chains, rolling harrows and press wheels. If stubble is likely to interfere with sowing, then fire harrow as late as possible; burn only enough stubble to permit sowing.

Red Legged Earthmite is more troublesome where stubble is retained. Monitor carefully and control where necessary.

Direct Drill

There are opportunities to direct drill grain legumes following a cereal crop where the soil is friable. Using narrow points or shares will reduce soil disturbance when direct drilling.

Trash flow and depth of sowing are significantly improved if narrow points are used and cultivating tines are removed.

If there is a late break to the season and there are no problem weeds anticipated, then grain legumes can be direct drilled and weeds controlled in-crop.

Lightly rolling the soil with a tyre roller will increase contact between seed and soil after sowing into dry soil or where soil is left rough after sowing. This is recommended only where there is sufficient stubble cover to protect the soil.

Press wheels also improve seed to soil contact where stubble is present.

Minimum Tillage

Minimum tillage involves one cultivation followed by sowing. Weed growth after the cultivation is controlled with herbicides. A cultivation after the opening rain is needed only to:

- * control germinated weeds, especially those not easily controlled with herbicides or grazing;
- * loosen hard set or compacted soil (not usually a problem after a cereal);
- * stimulate weed germination, especially for difficult to control weeds;
- * allow better incorporation of herbicides.

Jay Cummins
Senior District Agronomist
South Australian Department of Primary Industries
Lameroo

Phone: (085) 76 3345

REMEMBER: BCDS Field Day - 14 September