

PERENNIALS IN THE TABLELANDS & SLOPES:

FILLING IN THE FEED GAPS - DIRECT DRILLING OATS INTO PHALARIS

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Abstract: *Phalaris has been the mainstay of improved pastures on 'Woomargama Station' for the past 25 years. In time, some paddocks have begun to "run down" due to regular hay cutting and have shown increased weed encroachment. Complete ploughing and re-establishment of phalaris was not a viable option due to topography and the limited area of hay paddocks. Renovation of these depleted areas was a practical solution. This paper outlines the system which has been used very successfully on 'Woomargama'.*

Woomargama Station is located 58 km north of Albury, 18 km south of Holbrook, 5 km east of the Hume Highway adjacent to Woomargama. The station consists of 2024 ha undulating to steep hill country, with small areas of creek flats. Soil types consist of alluvial creek flats and light soils derived from granite, slate and shale. Granite outcrops are common. Rainfall averages 800 mm per year.

PHALARIS - THE WONDER WEED

Our pastures have been based on phalaris for the past 25 years. The old Australian phalaris was easy to establish and consistently outperformed other perennial grasses sown.

We have generally sown pasture mixtures at high seeding rates (Table 1) so that we are assured of instant weed-free pastures which are able to sustain reasonably heavy grazing or produce quality hay.

Phalaris provides excellent year round grazing for sheep and cattle. We have found it to be virtually indestructable, drought proof, and grazing proof. We are still experimenting and evaluating the newer varieties of phalaris.

Some people refer to phalaris as a weed, but from experiences at Woomargama Station it is the best and most profitable weed we have until someone comes along with a better one!

CORRECT MANAGEMENT OF PHALARIS

Correct management is the key to the success of phalaris pastures. Do not let phalaris develop into "baby tussocks". A good example of this is phalaris established along roadsides. When it becomes tall and rank, palatability of phalaris declines.

During drought times when roadsides are grazed, phalaris is left as a last resort by livestock. Most of the plant is trampled and wasted. Only when young shoots appear at the base of the plant, do stock begin to eat it.

Some people allow phalaris to get into the "baby tussock" state in the paddock situation, and then complain that nothing will eat it. Keep phalaris short with hard grazing to maintain palatability. Phalaris also makes excellent hay if cut before it becomes rank and dry.

OTHER SPECIES

Currie cocksfoot has also been a helpful perennial grass, but it cannot withstand the grazing pressure that phalaris can sustain, and its recovery rate is much slower. Ryegrass does not persist through our hot dry summers.

One should never forget the importance of sub-clover to both complement and balance the grasses. Without a mat of clover among the perennial grasses, your production is curtailed considerably.

Table 1: Mixtures used for pasture development at "Woomargama Station"

1965-1975		1976-1991	
	kg/ha		kg/ha
Phalaris	9	Phalaris - Siroso	2
Cocksfoot	1	- Sirolan	2
Mt Barker subclover	4	Cocksfoot - Porto	1.5
Wooenellup	4	- Currie	1.5
		Subclover - Karridale	3
		- Junee	3

DOUBLE FARMING

During the past 11 years we have developed a very successful system of pasture renovation on our arable and semi-arable land by direct drilling oat crops into "run down" pastures. In brief, these pastures which I describe as "run down" are pastures that were sown 10 to 25 years ago using the mixtures described in Table 1. Paddocks used for hay production were the first pastures to be classed as "run down".

The availability of suitable hay paddocks is limited owing to the topography of the property. After continual annual hay production, weed encroachment increased with time.

Complete reploughing of "run down" pasture was not an option because we could never rely on producing a constant grain crop. Finding suitable oat cultivars and dry years were the greatest barriers, but good crops and wet years were just as troublesome. In drought years, we have produced some excellent oat crops by direct drilling dryland varieties.

We have tried most varieties, but Coolabah has performed best providing grazing and yielding more than 3.4 t/ha of grain. We used Haken in the two very wet years, 1989 and 1990. These crops were grazed heavily through autumn and winter, but not harvested for grain. Cooba and Blackbutt have been used in years with early autumn breaks.

The first step in the renovation program was to spray the "run down" pasture with Sprayseed^(R) at 3-4 L/ha and then direct drill oats at the rate of 100-110 kg/ha with 110 kg/ha of superphosphate. Oat yields have averaged 2.4 t/ha and have exceeded 3.2 t/ha in some years.

Timing of this pasture renovation and cropping system is critical. First, you must wait until a positive autumn break has taken place. Then you must wait until all the weeds have germinated and clover has reached the 3-leaf stage. This will maximise weed kill and minimise clover mortality. Remember that the object of spraying is to put your pasture species to

"sleep" for a few weeks and kill weeds. This pasture "sleeping" gives the oats enough time to establish so that it can cope with competition from pastures when they revive.

We do not graze the oats if we intend to harvest for grain. However, when we do graze the pastures they provide excellent winter forage, although the timing of the autumn break has a large effect on the grazing option. The earlier the break, the more likely the pasture will be grazed. The direct

drilling approach also allows for extra grazing of the pasture right up until the autumn break.

When the oats are harvested around Christmas-New Year you have the oat stubble plus a new pasture ready for heavy grazing for both cattle and sheep.

For direct drilling, we use a triple disc seeder which is most suitable for our country, although it may not be the best machine for all situations. A tined implement is certainly an option worth considering and may reduce the rate of Sprayseed^(R) because of the effect of soil disturbance on weed growth.

CONCLUSION

Some of our initial pasture sowings that have been used extensively for hay production have been renovated three times to date using this method without any signs of loss in production during the renovation program.

Soil erosion is no longer a problem using this method. Other advantages include: savings in fuel and labour, as well as the huge saving in purchase of pasture seed for re-sowing a ploughed paddock.

Costs per hectare incurred with our renovation program in 1991 are given in Table 2. Based on the average yield of 2.4 t/ha of oats, our renovation pro-

Table 2: Cost of pasture renovation - 1990 season

INPUT/OUTPUT	COST/RETURN \$/ha
Chemicals Sprayseed (4 L/ha)	25.00
Lemat	2.20
Seed - oats	17.60
Fertilizer superphosphate	23.00
Fuel & labour	114.00
Grain harvesting & cartage	55.00
TOTAL INPUTS	236.80
Oats @ \$70.00/t average yield 2.4 t/ha	168.00
DEFICIT	68.80

gram results in a direct loss of \$68- 80/ha. On the surface direct drilling oats appears to be uneconomic. However, if the hidden benefits are taken into account, it makes good economic sense to utilize "double farming" techniques.

These hidden advantages include:

(1) The grazing use of the paddock right up until you spray;

(2) If an early break occurs (March/April) the grazing benefit included both pasture and oats which provides nearly double the forage of oats alone. (This results from removal of weeds and filling in the gaps with oats);

(3) The benefit of harvesting grain after grazing;

(4) The real cost saving of being able to keep phalaris pastures for 20 years plus without resowing.

Based on the mixture given in Table 1 pasture seed cost alone is \$61/ha plus costs incurred for fuel, labour and machinery. Also with newly sown pastures, there is the complete loss in grazing for at least six months.

I believe that the "double farming" technique gives you a real cost saving and greater utilization of pasture. Destroying degraded pasture for resowing with new pastures or oats does not make economic sense to me.

Suitable oat varieties limit the effectiveness of our renovation methods. I feel that the higher rainfall areas (800 mm/yr) have been neglected badly with regard to selection of oat varieties. Research and development should be a priority for this type of environment as there are large areas of high country in both NSW and Victoria suitable for direct drilling of both wheat and oats.
