

Winter forage crop options for the Northern Tablelands

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Introduction

Across the Northern Tablelands, we can experience a pasture feed gap through the winter months. Our summer pasture growth is often insufficient when carried into winter. Both the quality and quantity are inadequate to maintain stock at satisfactory production levels. This problem is exacerbated in droughts.

Where seasonal conditions allow, a winter forage crop can provide sufficient feed to get through the winter months without needing to purchase feed. The total amount of feed available will be influenced by the type of crop, variety, disease resistance and sowing time.

An additional benefit of a winter forage crop is the chance to rest perennial pastures when

their production is limited or where rejuvenation is required.

Key points

- How early and which crop option is sown is dependent on the summer/autumn rainfall.
- Don't sow too large an area. Plan an area in which you can manage the dry matter production, either by grazing or making hay or silage.
- Be aware of stock health issues.

Table 1. Suggested sowing times of some oat varieties. Source: NSW DPI Winter Crop Variety Guide 2019

Variety	Weeks	January				February				March				April				May				June					
		3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	
Higher tablelands/tablelands: Dual-purpose – grazing and/or grain recovery																											
Bass, Blackbutt, Nile	>	★	★	★	★	★	★	★	★	★	★	<	<														
Eurabbie			>	>	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	<	<						
Bimbil, Mannus				>	>	★	★	★	★	★	★	★	★	★	★	★	★	★	★	<	<						
Tablelands/slopes: Dual-purpose – grazing and/or grain recovery																											
Blackbutt					>	★	★	★	★	<	<	<	<														
Eurabbie					>	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	
Cooba▲						>	★	★	★	★	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Bimbil, Mannus, Yiddah							>	★	★	★	★	★	★	★	★	★	★	★	★	<	<	<	<	<	<	<	
Coolabah▲, Yarran▲								>	★	★	★	★	★	★	★	★	★	★	<	<	<	<	<	<	<	<	
Tablelands/slopes grain only																											
Bannister, Possum, Williams, Wombat																				>	★	★	★	<	<		
Kowari, Mitika, Yarran▲																				>	>	★	★	★	<		

> Earlier than ideal, but acceptable.

★ Optimum sowing time.

< Later than ideal, but acceptable.

▲ Outclassed varieties.

Warning: High soil temperatures (>25 °C) with early sowings may reduce germination and establishment.

Crop options

Winter cereals

Oats

Traditionally, oats have been the crop of choice for winter forage. For overall forage production, oats will generally produce more feed than other winter forage crops. Variety selection depends on a range of agronomic features, particularly maturity, growth habit and disease susceptibility.

Nile and Blackbutt are two varieties well suited to the Northern Tablelands. They are late maturing varieties which can be sown earlier. Their growth is also more prostrate, meaning the growing point is closer to the ground. The closer the growing point is to the ground, the lower you can graze without damaging the plant.

For these, and other late maturing varieties, sow from February onwards. Earlier sown crops will result in greater dry matter production prior to winter, where seasonal conditions allow. For earlier maturing varieties, sow slightly later (March - April) to avoid the crops going to head prior to winter. Table 1. shows recommended sowing times for common oats varieties on the Northern Tablelands.

Sowing rates for grazing oats range from 80 - 120kg/ha on the Tablelands.

Selecting varieties with good disease resistance is desirable. On the Tablelands, Barley Yellow Dwarf Virus and rust (leaf and stem) can be of particular concern. Selecting resistant varieties is important in ensuring it does not reduce your productivity. For susceptible varieties, seed treatment is advisable to minimise forage and grain yield loss. Additionally, fungal seed treatments are important if running crop through to grain.

Grazing can commence once plants are well anchored – usually 6 to 8 weeks after emergence depending on variety. For quick regrowth, keep adequate leaf area (more than 1000 – 1500 kg dry matter/ha). Don't graze erect varieties below 10 cm, whilst prostrate types can be grazed down to 5 cm.

Wheat

Dual purpose winter wheats are another forage option. They are not as tolerant of highly acid soils, moderate to high aluminum levels or low fertility soils, as oats.

To achieve higher winter dry matter production, they must be sown early. Late January to March is ideal given good soil moisture and mild temperatures. Sowing rates range from 80 - 120 kg/ha.

There is an array of varieties available. For early sowing select the late maturing varieties. Also, where possible, select varieties that have the best resistance to a range of diseases (Barley Yellow Dwarf Virus, leaf and stem rusts etc). Some varieties suited to the Northern Tablelands are Mackellar, Illabo, DS Bennett, RGT Accor, Manning, Wedgetail and Kittyhawk. Not all varieties are awnless – those that are, can be grazed longer at the end of the season without the risk of health concerns caused by awns.

Grazing can commence when plants are well rooted and can't be easily pulled out by hand or livestock. This is approximately 8 weeks after emergence, so slightly slower than oats. To maximise grain yield after grazing, remove stock at the end of tillering. In many cases this is a compromise between forage and grain yields.

Barley

If early sowing is not possible, barley can be a good option for winter feed. When sown mid-March/April, barley will provide a quicker and bigger bulk of feed during winter than oats. The disadvantage is that barley will finish growth at the end of the year earlier than most oat varieties.

Sowing rates range from 80 to 100 kg/ha depending on soil type and fertility. Common varieties include Urambie, Moby and Dictator 2. Before selecting a variety check for best disease resistance.

Commencement of grazing is similar to other winter cereals – make sure it is well anchored and can't be easily pulled out by hand or livestock. This is usually 6 to 8 weeks.

Triticale

Triticale is sown at similar times to barley - mid March/April for winter feed production. If feed quantity (bulk) is important at first grazing, triticale will out yield the other winter cereals. Although recovery from grazing is satisfactory, it does not recover as well as oats, wheat and barley. Triticale has a wider soil adaptation compared to the cereals mentioned above.

Sowing rates are 90 - 120 kg/ha. As triticale doesn't tiller as much as the other main winter cereals, sowing rates tend to be higher.

Varieties include Cartwheel, Crackerjack 2, Endeavor and Wonambi. Check varieties for resistance to various diseases. Check for awn length – some varieties are semi-awnless.

Commencement of grazing is similar to other winter cereals – make sure it is well anchored and can't be easily pulled out by hand or livestock. This is usually 6 to 8 weeks.

A guide to stocking rates is 1000 kg of livestock weight/ha.

The addition of sodium and magnesium blocks/licks during grazing can significantly improve livestock weight gains.

Winter cereals that produce large awns can cause mouth injury to livestock and should be avoided for hay production or when head emergence under grazing cannot be controlled. These cereals include cereal rye and some of the wheat, barley and triticale varieties.

Ryegrass (annual/biennial types)

Annual/biennial ryegrasses can be a viable alternative to oats in most circumstances. It is not normally sown as early as oats as it has to be sown shallower because of the smaller seed size. Ryegrass has a higher risk of failure than oats, if sown in February.

For good winter feed bulk, it should be sown in March. Later sowings may result in inadequate winter feed, with maximum production occurring in spring/early summer.

A range of varieties are available. Select the maturity type to suit the sowing time and

grazing period required. The main disease of concern is rust but there are resistant varieties.

Sowing rates are typically 10 to 20kg/ha, depending on the variety. These types of ryegrasses are grouped into diploid and tetraploid. The seed size is larger for the tetraploids so sowing rates are usually 20 – 40% higher than the diploid types.

Ryegrasses are 3 leaf plants, in that each tiller will have no more than 3 green leaves.

Grazing can occur when they have reached the 3-leaf stage which is usually about 1 to 2 weeks slower than oats. The feed quality of ryegrass is slightly better than that of oats.

Brassicas

There are a range of forage brassicas that provide winter/spring feed. The main groups are forage brassica (rape), hybrids/leafy turnips and turnips. Compared to the winter cereals they are slower to reach first grazing depending on type and sowing times vary from 8 to 16 weeks. They do provide high quality feed with protein levels of 15 – 25% for the leaves and 10 – 15% for bulbs.

Sowing times can range from spring through to mid-autumn (September to March). Examples of forage brassica/rape are Winfred, Goliath, SF Greenland and Mainstar. Some hybrid/leafy turnips are Pasja II, Appin, SF Pacer, Hunter and for turnips there is Australian Purple Top, Rival, and SFG2. The leafy turnips can be mixed with the annual/biannual ryegrasses.

Sowing rates will depend on the brassica type. The forage brassicas and hybrid/leafy types are sown at 3 – 5 kg/ha, whilst turnips range from 0.5 – 2 kg/ha.

Grazing depends on the brassica type. Forage brassica (rape) is grazed when plants are fully mature which is indicated by leaf colour change (purple/bronze); hybrid/leafy turnips require early grazing for most types (6 – 8 weeks) otherwise they lose palatability and quality; turnips are grazed when bulbs are fully formed.

Soil nutrition

Most of these crops will require good soil nutrition to reach peak production. Best practice is to sow with a starter fertiliser containing nitrogen and phosphorus, where soil sulphur is adequate. Sulphur is important for the brassica crops or where soil sulphur levels are low. In these situations a starter fertiliser containing sulphur is important.

Top dressing after each grazing event with nitrogenous fertiliser will assist in achieving maximum regrowth and overall productivity, where the season allows. It is only justified though if the extra feed produced can be economically utilised.

Final crop use

Upon the onset of spring and normal pasture growth, the cereal crops may no longer be required as stock can return to perennial pastures. What then should be done with these crops?

Make hay/silage

One option available to producers is to allow these cereal crops to grow out to a point in which to maximise quantity and quality. This is usually around flowering-milky dough stage. At this point, the crop can be cut and made into silage or hay.

If choosing to do this, stock should be removed towards the end of August/early September to give the crop the best opportunity to grow sufficient bulk to harvest.

For a complete list of Northern Tablelands Local Land Services Land Facts, please visit our website at www.lls.nsw.gov.au/northerntablelands

Grain

Forage cereal crops can be taken through to grain production. This grain can be sold or used as seed for subsequent forage crops.

Stock should be removed from the crop early (late August/early September) to give the greatest grain yield potential. Removing stock later than this could result in decreased yield and grain quality, with a higher proportion of small, undesirable seed.

Contacts and more information

For more advice and information regarding winter forage crops, contact one of our agronomists:

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