

Do you have a need for feed?

This information outlines the options for obtaining quick spring feed or replenishing supplementary feed supplies.

Introduction

While farmers in regions affected by the June snow storm are now over the immediate problem, they should be planning for the important and urgent decisions about replenishing supplementary feed levels for next winter, and minimising the affects on stock performance this spring. This information booklet is intended to help farmers make these decisions, by exploring the most effective options available.

The issues

While everyone is in a slightly different situation, the common problems farmers are facing are,

- a complete exhaustion of winter feed supplies
- damaged pastures
- anticipated lower pasture growth this spring
- lower expected silage/hay production this spring, and
- high prices for purchased feed

These circumstances will create the need to work out how to replenish supplementary feed stores, despite the likelihood of pasture surplus being lower this spring. There are two choices that farmers can make,

1. Carry on as normal and hope they have an unusually good season for hay/silage production from pasture

surplus, and that demands for feed next winter are lower than normal.

2. Take the decision to grow more crops, and/or encourage pasture surpluses, to ensure they have enough feed for a normal winter.

The Options

The key will be finding ways to generate large amounts of silage/hay from small areas of the farm. Thankfully there are several options that can be effective at increasing feed conservation over the next nine months.

Option 1. Increase natural pasture growth

Spring pasture surpluses are likely to be lower this coming season due to lower pasture covers coming out of winter, damage done to pastures by pugging, and increased leaching of nitrogen from the soil. Lower pasture growth will restrict your ability to make silage and hay from pasture.

Pasture growth can be increased through the greater use of nitrogen fertiliser. This can be applied once soil temperatures reach 4°C in spring, with expected response rates of 8-12 kg DM/kg N applied in early-spring, and 10-16 in mid-spring. Application rates of 35-50 kg nitrogen/ha are considered the most economic. Response rates will be highest on pastures that are deficient in nitrogen, pastures with a poor clover history or newly developed pastures.



In the past, sheep and beef farmers who have applied nitrogen in spring have mainly restricted this to early-spring because mid-spring applications coincide with natural pasture growth exceeding animal demand anyway. This spring however, it may be economic to also apply nitrogen in mid-spring for the purpose of growing larger silage/hay yields. Larger application rates (60-100 kg nitrogen/ha) should be used when closing a pasture for silage. An application of 100 kg nitrogen/ha should generate an extra 1200 to 1500 kg DM/ha in silage yield.

Pasture growth can also be improved on those paddocks damaged by pugging during winter. Short-rotation ryegrasses can be drilled from September onwards. Paddocks damaged with cattle may need to be levelled before drilling. Pastures that were old before damage may also benefit from spraying before drilling to remove old and slow-growing plants.

Option 2. Grow crops for silage/hay

Crops are an effective way to produce large amounts of conserved feed from a small area of land. Cereals can produce yields of 6-18 tonnes DM per hectare in a short time, allowing for new pastures to be planted in autumn before it gets too cold.

If you expect it will be difficult to get enough silage/hay from pasture, every hectare of cereal you grow will produce as much silage as 3 to 6 hectares of pasture. Cereal silage can help you overcome the shortfall from pasture silage/hay.



Whole crop cereal silage is a high quality supplement, rich in carbohydrate

Forage cereals are harvested at two main stages. If you want maximum yields of high carbohydrate silage, take the crop through to the "whole crop" stage, and put the silage into pits or wrap in plastic. If your farm dries out quickly in spring, you may opt to harvest at the earlier "green chop" stage, accepting a lower yield but gaining a silage with more protein and straight forward storage.

Option 3. Increased winter forage area

If you expect to have low supplies of conserved forage for next winter, this can be compensated with larger areas of brassica crops (e.g. Sovereign kale). The ability to grow a large volume of winter feed from relatively small areas is invaluable and was highlighted this year when these crops were not available for a period of time. Increasing areas of winter brassica will also provide a way of replacing more damaged or old pastures.



DoubleTake triticale can be planted from January to March for multiple grazings in winter

Option 4. New pasture

Planting new perennial pasture in paddocks that were damaged in winter will provide a long-term boost to feed and livestock production. New pastures will be more productive next winter, reducing your reliance on supplementary feed.

Options include spraying and direct-drilling this spring, with a levelling to smooth out hoof marks if needed. You may also establish a summer brassica crop to finish lambs or cattle, and then plant this to perennial pasture in early-autumn.



Crop selection table

Type of feed needed	Planting time	Expected yield (t DM/ha)	Energy levels	Protein levels	Crop type	Relative crop maturity
Silage – Whole crop	Early-spring	10-18	High	Low	Rocket triticale	Medium
					Salute barley	Fast
Silage – Green chop	Early-spring	5-8	High	High	Milton Oats	Fast
					Rocket triticale	Medium
Silage – ryegrass	Mid-spring	3-4	High	High	Warrior Italian ryegrass	Medium
					Crusader Italian ryegrass	Medium
Winter grazing	Late-spring	10-14	High	High	Sovereign kale	Slow
	Autumn-Single graze	5-7	High	High	Milton oats	Fast
	Autumn-Multi graze	5-8	High	High	DoubleTake triticale	Medium
	Early-autumn	5-7	High	High	New York turnip/ryegrass	Medium
Summer grazing	Spring	5-7	High	High	Hunter	Fast
					Winfred	Medium

Brassica-herb options can also be considered. Multi-graze brassicas (e.g. Hunter forage brassica or Winfred rape) can be planted with red clover and herbs (plantain and chicory), and then also be over-drilled with ryegrass in autumn. This system provides high quality forage over summer, and then excellent grazing for winter.

Cereal Management

a) **Establishment** – Seed should be planted as soon as possible in spring. Cereals can be planted after cultivation, or by spraying and direct-drilling. Seed should be covered with 2-3 cm of firm soil to reduce bird theft. Grass grub numbers should be assessed before planting, and if they are actively feeding, insecticide used at drilling. When direct-drilling, monitor for and control slugs. The total amount of nitrogen needed and timing depends on the type of cereal grown. If soil levels of phosphate, potassium and sulphur are adequate, only small amounts (30-50 kg/ha) of phosphate are needed at planting. Weeds should be controlled in early stages to reduce impact on silage yield or quality.

b) **Green chop cereal silage** – The best species to use for green chop silage is oats (e.g. Milton), as they achieve good yields and are cheaper to

establish than triticale. Sowing rates for spring-planting are 100 to 120 kg/ha. Green chop oats should have almost 100% of their nitrogen applied at, or before planting because the crop is harvested so quickly after planting. The total amount of nitrogen needed will depend on estimated nitrogen reserves in the soil, but will range from 60 to 150 kg N/ha. Typically, seed is drilled with up to 250 kg/ha DAP, and the balance of nitrogen requirements broadcast before or after drilling. The crop should be harvested at the boot stage (GS 45) when the top of the stem has swollen with the seed head inside, but before the head has emerged. It will need to be wilted in a similar manner to pasture silage, and can be wrapped or put into pits/bunkers.



Oats are ideally suited to producing green chop cereal silage

c) **Whole crop cereal silage** - Triticale (e.g. Rocket) has the greatest whole crop silage yield potential. Barley (e.g. Salute) is used by farmers wanting a faster maturity to avoid drought stress before harvest. Barley has lower yield potential than triticale in moist climates, but does tend to have a higher grain ratio and therefore energy content. Target plant populations are 300/m² for triticale and 270/m² for barley. The actual rate used should be calculated with your seed retailer, because the weight of seed can vary between seed lines. For 2006 seed lines, average sowing rates for Rocket will be 180 kg/ha, and 160 kg/ha for Salute. It is recommended that treated seed (e.g. Raxil) is used for fungal protection in most situations. Gaucho seed treatment will give six weeks protection from aphids (carry barley yellow dwarf virus), and if not used, Karate Zeon (20-40ml/ha) can be sprayed as the two leaf stage (GS 12) with herbicide.



Whole crop cereal silage can produce large amounts of feed from a small area

Spring-planted triticale crops should be planted with 33% of their total nitrogen requirements, plus phosphate, potassium and sulphur as needed. The remainder of the nitrogen should be applied at the late-tillering stage (GS 30). Crops with good soil moisture and yield potential, can also benefit from a third application (30-40 kg N/ha) at the flag emergence stage (GS 39).



Triticale is ideal for whole crop silage production

Barley crops should have 50 to 66% of their total nitrogen requirements at planting because they go through the development stages more rapidly than triticale. The remainder is applied at mid-tillering (GS 23).

The total amount of nitrogen needed for whole crop silage will depend on estimated nitrogen reserves in the soil and yield targets, but will range from 120 to 250 kg N/ha.

Leaf diseases should be monitored regularly, and sprayed when detected. Even if disease has not been seen, for most crops it will be economic to apply a fungicide at full ear emergence (GS 59). This will normally be a mix of preventative and knockdown chemicals.

Harvest should be organised with a contractor soon after the crop is planted. Whole crop cereal silage is direct-harvested (no wilting needed) when the grain has reached full size, but is still soft and pliable ("cheesy-dough" stage). It should have a dry matter content of 36-40%. Stored silage should be protected from rats and opossums by using poisons, layering of pits with grass silage, or thicker plastic.



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Other Tools

Calculating a feed budget for next winter will be valuable. It will take guess work out of how much feed you need to conserve or grow. Producing too much feed will create unnecessary cost, while under-producing could reduce your animal production for the following season. The budget should be updated as factors change (e.g. crop yields, pasture growth).



For further information on the options outlined in this booklet, look out for the 2006 Brassica Book and the 2006 Spring Pasture Sowing Guide, or consult your local seed supplier.