SAC Grass Day in Nairn

Grass

Growing and utilising Grass

Nairn

13th March 2018

Paddy Jack

DLF Seeds

What we will look at today

- Is grass a cheap feed?
- How does a grass plant grow?
- What species should we use?
- How to establish grass successfully
- Managing grass
- Which Mixture for me?

Dry Matter Production

- Grazed Grass 9 to 10 tonnes DM/ha 2.5 to 4 p/kg
- Silage 13 to 15 tonnes DM/ha 9 to 13 p/kg
- Barley & Straw 7.5 + 3 tonnes DM/ha 17 to 22 p/kg (£135 del + costs)
- Grazed Grass is the cheapest way to feed ruminant animals
- But grass management needs to be very good to achieve this – not for every farm

Making more from Grass and other forages

700 kg + liveweight sold/acre

6700 litres sold/acre

Make the most of what you have

Maximising grass performance needs high levels of grassland management

Young Grass Performance - 2017

- 2017 measured yield figures from a trial sites in South West Scotland Robert and John Fleming, South Milton, Glenluce
- Average **daily** growth during the 20 day period 12th May to 2nd June
  - Old grass fields averaged 33 kgs Dry matter/ hectare/ day
  - The 2015 sown fields averaged 152 kgs DM/ha/day
  - The 2016 sown fields averaged 174 kgs DM/ha/day

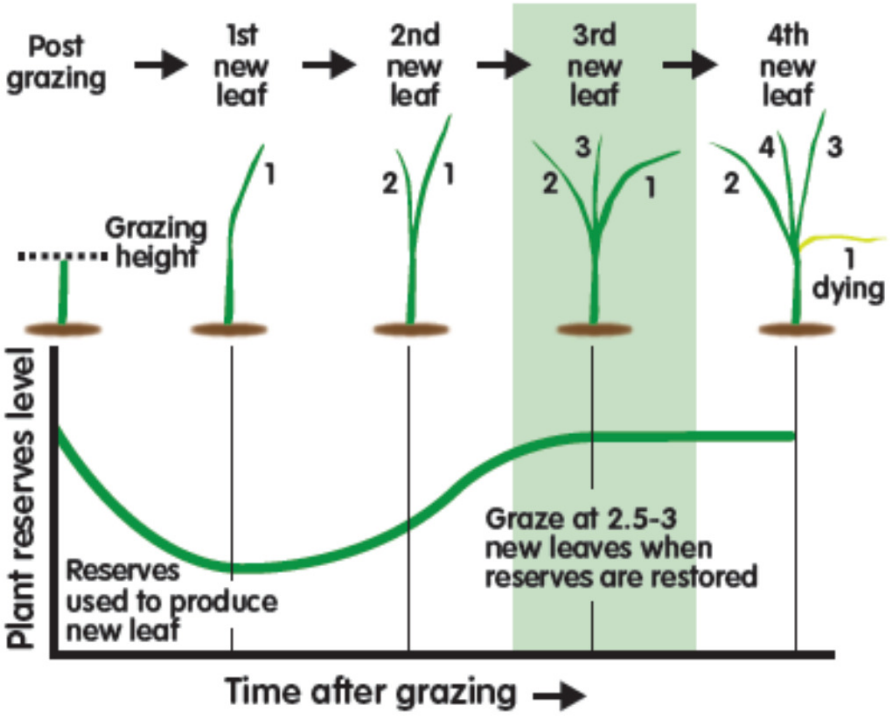
- 2015 sown grass yielded 17 Tonnes DM/ha in 2017
- 2016 sown grass yielded 18 Tonnes DM/ha in 2017

Benefits of Young Grass

- It grows earlier – much earlier up to 50 days earlier
- It yields much higher
  - often double the yield from an old sward
- Nutritious grasses produce far more kgs of milk or LWG per kg of DM consumed
- Young grass responds to applied nutrients

How does a grass plant grow?

Graph 1: The leaf life cycle of a grass plant



With fresh young grass it is possible to maintain an ME of over 12.0 MJ/kg DM for the whole season

Protein averages about 17% in pure ryegrass swards and about 19% with a good clover content.

Utilise grass at the correct height for the class of stock grazing it

Grass Growth Stages

Grass development stages:

1

Vegetative: Leaves only, stems not elongated.
Time for grazing

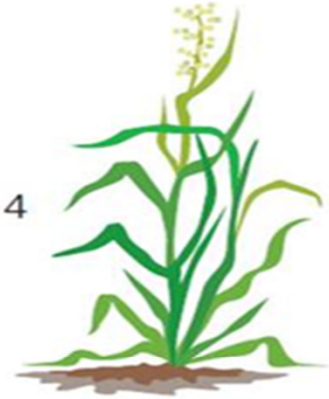
2

Stem elongation: Stems elongating.
Time for making silage with very high feeding value

3

Boot: Flower head is enclosed in flag leaf sheath and not showing or only showing partly.
Time for making silage

4



Heading: Flower head emerging or emerged from flag leaf sheath.
Time for making hay

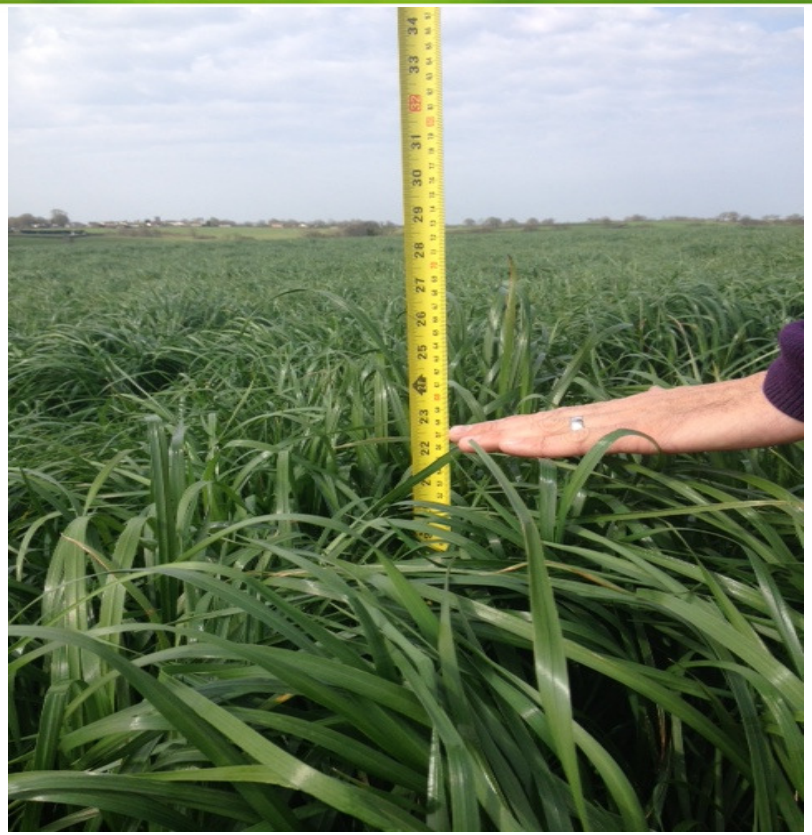
5

Anthesis: Flowering stage, anthers shedding pollen.
Too late for forage harvest!

Grass Mixture Components

- Perennial Ryegrass
    - Early Perennial Ryegrass
    - Intermediate Perennial Ryegrass
    - Late Perennial Ryegrass
- Italian Ryegrass
- Hybrid Ryegrass
- Timothy
- Cocksfoot
- Creeping Red Fescue
- White Clover
- Red Clover
- Advanced Grasses - Festuloliums

Perseus 17th April 58 cm tall



Perseus is a FESTULOLIUM
It is a cross between
Italian Ryegrass and tall Fescue

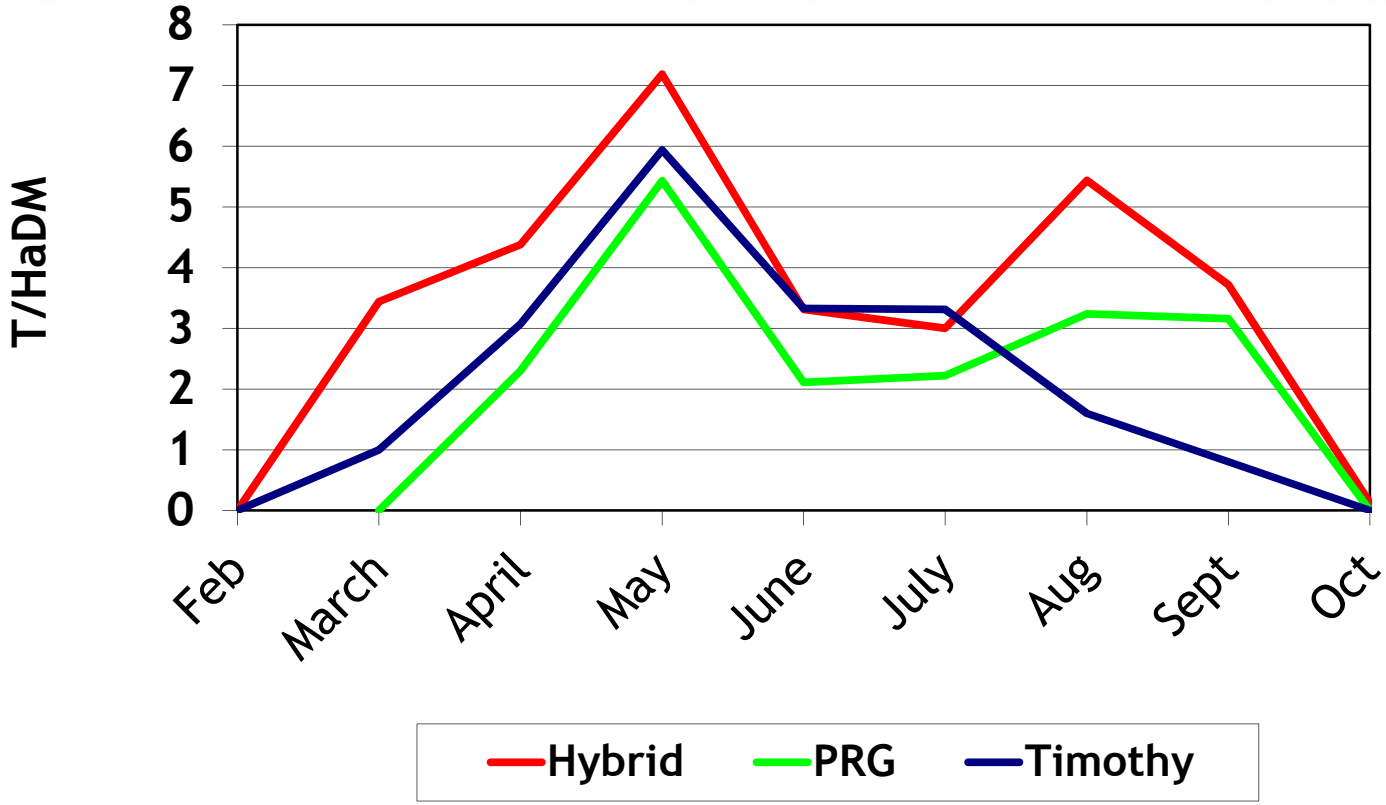
It will last 3 years
Is very Stress Tolerant (big roots)
Disease free

Hybrid Ryegrass on the LHS V Perseus on the RHS

At DLF Seeds we call Festuloliums

GRASSES AdVanced™

Seasonal Growth Patterns



Options with Grass and Clover

- Direct sow a full Mixture on its own
- Direct sow a full mixture with Westerwolds
- Undersow a spring cereal or wholecrop/ arable silage
- Overseed existing grass sward

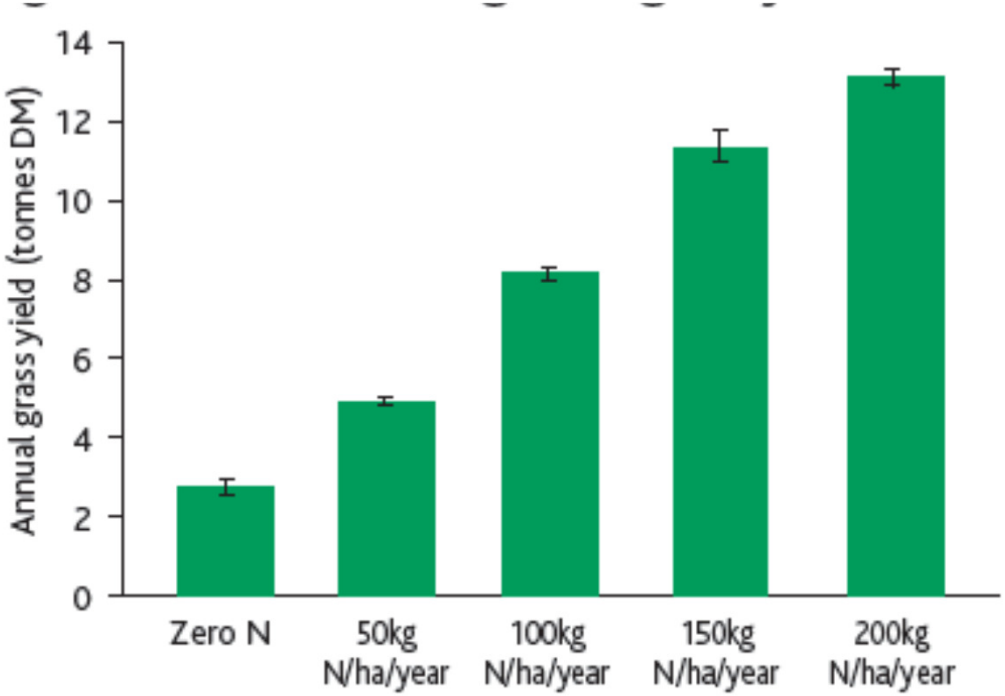
Wire Tine Machines

Many other Grass drills available

Establishing new Grass

- Soil Test correct Lime, P and K Sulphur
  - Much higher pH levels than previously considered necessary
- Control both broad leaved and grass weeds
- Put the best ploughman on the tractor
- Fine, firm, level seed bed roll, sow, roll
- Rotationally graze in the 1st year – if possible
- Control post sowing difficult weeds – chickweed and docks
- Do it earlier in the season

Nitrogen Input



Managing Grass

- Grazing grass

- Silage
  - Multicut silage

Rotational Sheep Grazing at Kinknockie

October 2017

Grazed by 11 ewes and 21 lambs/acre

Then grazed by 15 ewes/acre – having sold 860 kgs/acre

Benefits of Rotational Grazing

Table 5: Effect of moving from a set stocking system to paddock grazing

Strategy	Annual yield (t DM/ha)	Utilisation (%)	Useable yield (t DM/ha)	Percentage increase
Set stocking	8.5	50	4.3	
Rotational	10.2	65	6.6	56%
Paddock	10.2	80	8.2	92%

Rotational grazing and paddock grazing do not suit all farms or farmers

Graze fields early and tight to encourage more growth
Let them recover
Grass grows grass!

Yield of Grass (DM/Ha) v Quality in Silage

Figure 1: D-value will vary depending on leaf/ stem growth.

72 D-value, leafy growth. Typical first cut yield of a long term ley – 4.6t DM/ha

68 D-value, lengthening of stems. Typical first cut yield of a long term ley – 6.1t DM/ha

65 D-value, flower heads emerging. Typical first cut yield of a long term ley – 7.5t DM/ha

As a grass plant gets older ….

DM Yield increases

Protein and ME decrease

Lignin and Hemi-Cellulose increase

To make higher protein, higher energy silage

Cut it earlier

Apply Sulphur in your fertiliser

Ear Emergence as a quality guide for Silage

	Good	Moderate	Poor
D-value	70	65	60
% of ear emergence	25%	50%	100%
Energy ME (MJ/kg DM)	11.5	10.5	9.5
Crude protein content %	16	12	10
Feed to:	Finishing stock, ewes carrying multiples	Growing cattle, autumn-calving suckler cows, ewes carrying singles	Dry stock, spring-calving suckler cows

Key: D-value = measure of feed digestibility.

Many of the 2017 early cut silages have excellent energy levels - 12.2 + MJ/kg of ME

Many of the 2017 2nd cut silages have poor ME s

Grass Fibre

- For many years our breeders have improved yields, disease resistance and sward density, without compromise of Winter hardiness

- They are now focused on producing varieties with improved forage quality

- In particular, varieties with high cell wall digestibility DNDF
  - Digestible Neutral Detergent Fibre – DNDF

- Every 1% increase in DNDF results in 0.25 lt more milk per cow per day
  - Trials show 3 to 6% difference in DNDF between listed varieties

Grassland Management for Good Grass

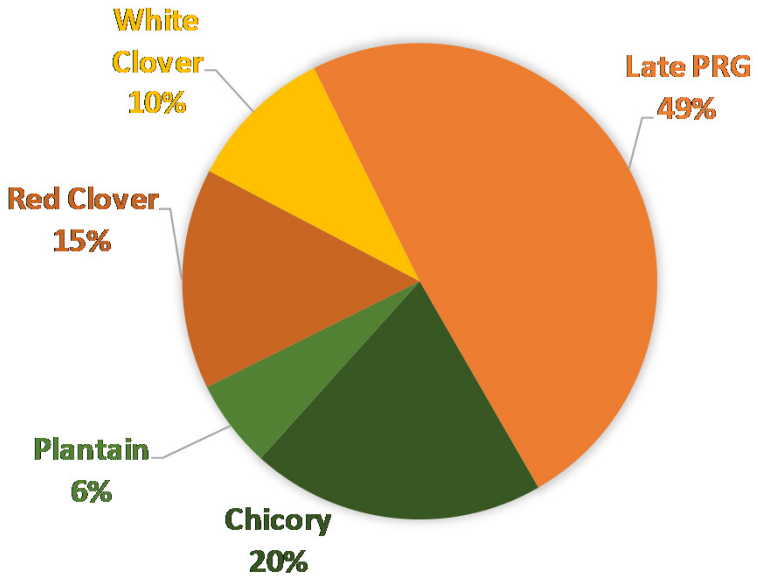
- A good start
  - pH, P and K, seed bed, weed control
- Look at the grass plant not the calendar
- Measure your grass production
  - Utilise it accordingly rotationally grazing or mowing
- Buy the best seeds –it is a small cost over 5 to 7 years

HF Rapid Gain 2017 sowing

Sown 9th May 2017 at 10 kg/acre
Recommended sowing rate is 8 kg/acre

1st Graze 15th July

HF Rapid Gain



%	VARIETY	SPECIES	GROUP
20	CHOICE	CHICORY	
6	TONIC	PLANTAIN	
15	RED CLOVER BLEND	RED CLOVER	
10	HF GRAZING PURPOSE CLOVER BLEND	WHITE CLOVER	
49	ASPECT	LATE PRG	TET

Sow at 8 kg/acre
20 kg/ha
20 kg bags

£7.45/kg to farmer

HF Rapid Gain 2017 Trial

Results

24 cattle for 28 days – 1.24kg/DLWG

22 cattle for 21 days – 1.19kg/DLWG

49 days rotational grazed av. 9.5 cattle/ha

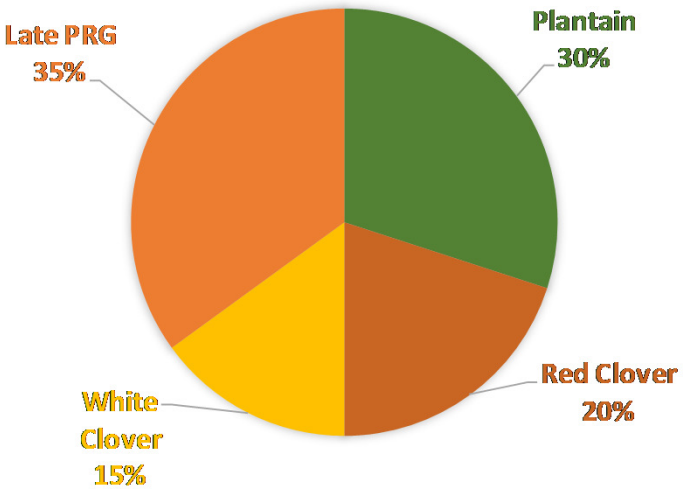
Comparative group of cattle doing 1.15 DLWG then 1.08 for same period on grass.

HF Growmore - new

- Highly palatable and nutritious
- More tolerant of lower pH
- TONIC plantain – the best variety
- No chicory
- MUST be rotationally grazed
- 15 to 18 days rest in mid summer
- Big Live Weight Gains
- Very high in protein
- Contains ASPECT the highly palatable late perennial ryegrass

- Sow at 8 kg/acre 20 kg/ha
- 20 kg bags

HF Growmore



%	VARIETY	SPECIES	GROUP
30	TONIC	PLANTAIN	
20	RED CLOVER BLEND	RED CLOVER	
15	HF GRAZING PURPOSE CLOVER BLEND	WHITE CLOVER	
35	ASPECT	LATE PRG	TET

Sow at 8 kg/acre
20 kg/ha
20 kg bags

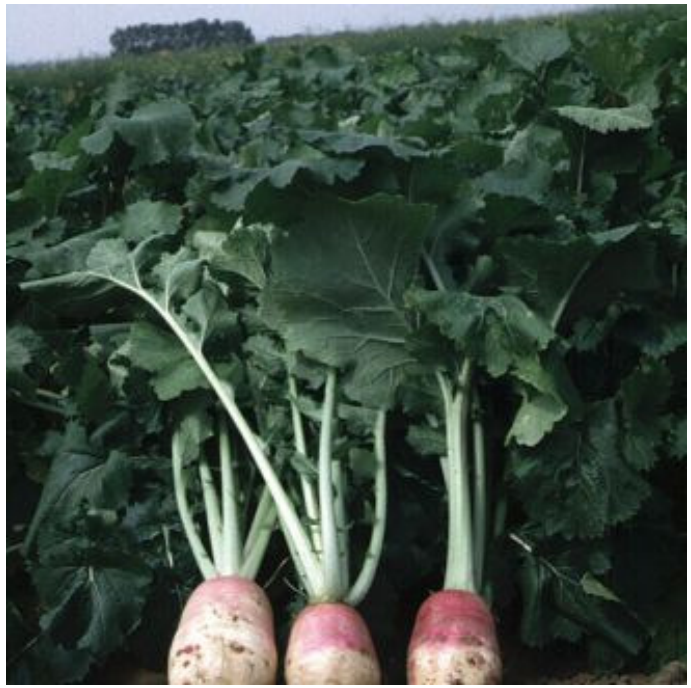
£7.80/kg to farmer

Forage Rape

- Very fast growing
- More tolerant of low fertility
- Wide spectrum of use
  - Spring sow for mid summer
  - June/ early August for autumn
- Highly palatable
- Suits both sheep and cattle
- Superb for finishing lambs
- Sow mid June to mid July
- Drill at 2.5 kg/acre
- Broadcast at 4 - 5 kg/acre
- Some varieties can be flea beetle treated

Stubble Turnips

- Palatable and digestible
- Can be utilised 10 to 12 weeks after sowing
- Cattle or sheep
- Bulb or leafy type
- Not winter hardy
- Sow mid July to mid August
- Sow after winter barley
- Or after 2nd cut silage
- Drill at 2 kg/acre
- Broadcast at 3 kg/acre



Fearn Ewes on Samson Stubble Turnips

Stubble Turnips are usually finished by mid January

In mild areas and with mild winters this extends much later

This was nearly March

Kale

- A leafy, high yielding brassica
- Can be used right through both autumn and winter
- High protein and palatable
- Cattle and sheep can use it
- Sow mid May to June
- Needs good conditions
  - pH, phosphate & nitrogen
- Drill at 2 kg/acre
- Broadcast at 3 kg/acre
- Can be flea beetle treated

A good crop of Maris Kestrel
Berwickshire September 2013

Hybrid Brassicas

Spitfire

Digestible Stems

Zoom

Multiple Harvests

Swedes

- Full season crop
- Tolerant of most frosts
- High yielding
- Generally fed in situ
- Can be lifted and stored
- High dry matter for longer life
- pH sensitive
- They “clean” the ground
- Drill end April and May
- Very low sowing rates
  - 125 to 300 grams/acre precision
  - 1 to 2 kg/acre with grain drill
- All flea beetle treated

Fodder Beet – can they be grown in Scotland?

1000 tonnes off 25 acres
EnnerMax Beet
Kelso Nov 2014

Huge yields
High ME
Can be stored or fed in situ
Lift from Oct to Feb

Monro Grazing Fodder Beet

Trial Results

Category	Variety	Dry Matter Yield %	Dry Matter Content %	Fresh Beet Yield %	% Root in Ground
High Dry Matter	Viridis (Rhz)	102.1	18.6	103	70
	Cagnotte (Rhz)	99.7	17.5	107	65
	Blizzard©	98.4	18.3	100	72
All Rounder	Splendide	98	16	113	70
Medium Dry Matter	Jamon	96.8	15.8	117	65
	Merveille	96.4	16.7	105	70
Low Dry Matter	Monro	90	14.6	117	40

Data from NIAB 2001 Descriptive List and ADBFM French Trial Results 2014-2016

- Brand new Grazing Beet (Florimond Deprez)
- Replacement for Feldherr
- Low DM for grazing
- 60% grows above the ground
- Huge fresh weight yields

Monro is the big RED one

Ecological Focus Areas - Opportunities

- Fallow Land EFAFAL Not used from 15th January to 15th July, inclusively
  - Sow a late heading grass mixture specifically for cutting in mid July
- Margins EFAM May be cut for hay or silage
- Catch Crop EFACC Undersow a spring cereal crop
  - Use a full grass mixture if leaving the field in grass for longer
  - Use an Italian Catch Crop Mixture at 3 to 4 kg/acre
- Green Cover EFA GC Improve the organic matter and physical conditions of a soil
  - Mixtures with vetches, forage rye, phacelia, mustard etc