



Workshop Dunadd

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Topics Covered

- Multi Species Grazing Crops
- Grass Mixture Formulation
- Forage Brassica Crops
- Establishment costs
- Forage Brassica Blends



Multi Species Winter Grazing Crop

Mission:

Establish a diverse crop through minimum soil disturbance to provide a sustainable winter ration for grazing ruminants and enhance soil health and biodiversity.

Method:

Sow a wide range of species during peak grass production to deliver a large volume of flowering and seeding plants for grazing with livestock during winter and early spring.

Multi Species Winter Grazing Crop

- Forage Rye
- Kale/Kale Hybrid
- Forage Rape
- Turnip
- Vetch
- Sainfoin
- Birdsfoot Trefoil
- Fodder Radish
- Crimson Clover
- Cereals



Multi Species Winter Grazing Crop

Benefits

- Fertility return through intensive animal grazing
- Reduce wintering costs
- Maintain healthy animals through diversity and selective grazing.
- A complete ration from grazing
- Improve soil health and fertility.
- Improve drainage and aeration
- Tap root plants to open soil compacted soils
- Scavenging plants to improve soil chemistry
- Legumes for nitrogen fixation
- Diverse herbage for minerals and trace elements

Grass Mixture Formulation



Key Factors

- Environment Soil Type, Topography, Rain Fall
- Planned Utilisation
- Grazing - Class of Livestock, Grazing System, Winter Use, Turnout Date
- Silage - Duration. How many Cuts, Class of Livestock, Target D Value, Target Dry Matter,
- Dual Purpose Use - All of the above
- Historical performance



Species

- Ryegrass
- Timothy
- White Clover
- Red Clover
- Cocksfoot
- Strong Creeping Red Fescue
- Meadow Fescue
- Tall Fescue
- Sheeps Fescue
- Festuelolium

Alternative Species

- Chicory
- Plantain
- Sheeps Parsley
- Sainfoin
- Trefoil
- Ag Yarrow
- Sheeps Burnet

Perennial Ryegrass

85 Recommended Varieties

Diploids

- Persistent
- Dense Growth
- High Tiller Number
- Smaller cells

Tetraploids

- Winter Hardy
- High D Value
- High Cutting yields
- Early Leaf Production
- Deep Rooting



Timothy

6 recommended varieties

- A Bulbous plant
- Perform well in a wide range of environments including wet and peat soils.
- Extremely palatable under grazing
- Landrace Variety available
- Consistent spring growth



Cocksfoot

8 Varieties Scottish recommended List (Index Only)

- Cool Season growth - Spring, Autumn and Winter
- Fast regrowth
- Ideal for rotational and deferred grazing
- Deep rooting
- Performs well on a wide range of soils

White Clover

23 Recommended Varieties

- Stoloniferous
- Performs well on a wide range of soils
- Nitrogen Fixation (110-170Kgs/Ha)
- Shallow Rooting
- Wide range of varieties and leaf size
- Extremely persistent small leaved varieties



Red Clover

15 Recommended varieties

- Tap Root
- High Yields
- Fast Lamb growth
- Nitrogen Fixation
- Deep Rooting
- Complimentary to white clover
- **REMEMBER High oestrogen**



Strong Creeping Red Fescue

- Dense
- Persistent
- Soil Stabiliser

Meadow Fescue

- Performs well in rich wet and heavy soils
- Persistent
- Can grow to 1.2m on fertile site

Tall Fescue

- Bunch Grass Spreads by seed only
- Cool Season
- Performs well in drought or dry hillside locations
- Performs well in wet soils and short periods of flooding

Sheeps Fescue

- The great ability to adapt in poor or disturbed soils is due to mycorrhizal fungi which increase nutrient and water absorption. The symbiosis with fungi increases mineral nitrogen and phosphate absorption to the grass itself but also to exchange nutrients with neighbouring plants
- Wide ecological tolerance
- Often found on acidic soils
- Ideal for reinstatement of mining sites and spoil heaps

Festulolium - 3 Varieties on Scottish List (Index Only)

- Deep Rooting
- Increased Cool Season Growth
- High Cutting Yields
- Particularly suited to drought prone locations

Italian Ryegrass – 12 Recommended varieties

- Early Spring Growth
- High conservation yield
- Fast Establishment
- Very palatable Spring Growth

Italian/Perennial Hybrid Ryegrass – 8 Recommended Varieties

- More persistent than Italian



Multi Species Perennial Herbal Ley

- Sainfoin
- Birds foot Trefoil
- Perennial Chicory
- Tonic Plantain
- Sheep's Burnet
- Sheep's Parsley
- Yarrow
- Cocksfoot
- Timothy
- Perennial Ryegrass
- Red Clover
- White Clover





Forage Brassica Crops

Swedes

- Gowrie, Kenmore, Lomond, Invitation
- Sow at 500g/ha. 75-100-100kgs NPK/ha (60-80-80 Units/Acre)



Kale

- Maris Kestrel, Gruner Angeliter, Caledonian
- Sow at 6-7kgs/ha. 80-120kgs/ha N (60-100 units/Acre)
- Sowing Period: 15th May to 2nd week June



Hybrid Forage Brassica

- Redstart, Spitfire, Swift
- Sow at 7-7.5kgs/ha.
100ksN/ha (80 units)
- Sowing Period: late June - July

Forage Rape

- Stego, Gorilla, Nevin, Rampart
- Sow at 10kgs/ha. 100kgs N/ha (80 units/acre).
- Sowing Period: 3rd Week June to 1st week July



Turnip

- The Wallace, Massiff, Imperial Green Globe
- Seed rate 500g/ha precision 1.25kgs Direct Drill. 75-100-100 Kgs/ha (60-80-80 Units/acre)
- Sowing period: late May to early June

Stubble Turnips

- Samson, Whitestar, Avalon, Tyfon
- Seed Rate 5-6.25kgs/ha. 75kgs/ha (60 Units/acre).
- Sowing period: late June to August



Establishment costs

Input	£ per acre
Plough	25
Cultivate & Sow	35
Contingency	25
Share of Lime	35
Fertiliser	£ per acre
Kale	70
Hybrid	70
Forage Rape	60
Stubble Turnip	35
Direct Drill	£ per acre
Drilling cost	22
Glyphosate & application	23

Comparison Table

	DM (tns/ha)	DM%	ME (Mj/kg)	Seed £/ha	Cost (£ha)	£/t DM	Cost DD (£/ha)	£/t DM*
Swedes	9 - 12	10-12	12-14	49				
Kale	8 - 10	12-15	10-11	123	593	65.88	494	68.6
Hybrid Kale/Rape	5 - 7.5	12-14	10-11	72	542	86.25	443	88.6
Forage Rape	4 - 4.5	11-13	10-13	42	486	114.35	387	113.82
Stubble Turnips	4 - 5.5	9-12	10	34	417	99.15	318	83.68

*Direct Drilled yield estimated 80% of traditional cultivation

Forage Brassica Blends

FBWH(Cattle) - A winter hardy brassica mixture for cattle with high yielding kale and swede for outwintering cows or store cattle.

- 90% Kale
- 10% Swede

FBWH(Sheep) - A winter hardy brassica mixture of semi dwarf kale and swede for finishing lambs or feeding ewes in early spring.

- 90% Kale
- 10% Swede
- Consume January to April

Forage Brassica Blends

FBMS - A fast establishing semi-winter hardy brassica mixture for cattle and sheep. This mixture contains Hybrid Kale and main crop turnips for maximum yield from midsummer sowing. One of our most popular mixtures is widely used for sowing after first cut silage in late June to early July. With fast vigorous growth it can suppress weed competition and offer easy establishment.

- 86% Hybrid Kale/Rape
- 14% Main Crop Turnip
- Consume Mid Winter

Forage Brassica Blends

FBES(Turnip) - A fast growing easy to establish forage crop for autumn and early winter use. Ideal for finishing lambs post grass or autumn grazing for cattle, this is a low-cost option with high yields when sown in late June to early July. With both species having fast establishment, the turnip offers 'yield insurance' in a wet summer where soil become waterlogged for long periods and forage rape yields drop.

- 88% Fodder Rape
- 12% Main crop Turnip

Forage Brassica Blends

FBES(Stubble Turnip) - A fast growing option with the lowest seed cost in the range best suited to loam and free draining soils the high leaf to stem ration in this mixture provides good animal performance in late summer and early autumn. Suitable for fast finishing lambs or autumn grazing for cattle.

- 88% Fodder Rape
- 12 % Stubble Turnip

Finish

- Questions/Discussion
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