

Use of forage brassicas and bio-active chicory/plantain/clover mixtures for lamb finishing

John Vipond, Annuk Veldhuis
Stephanie Matheson and Jos
Houdijk

New directions: lamb finishing

- Use forages less for 'extending the grazing season'
- Use them more to improved diet quality allowing faster finishing, seasonally import or chill lamb
- Faster finishing means less days maintenance, higher efficiency –more resources for ewes
- New bio-active crops such as chicory to control worms –but are they economic?
- Welfare and cleanliness issues with late winter finishing are current problems resulting in lambs having to be taken off /belly clipped pre- slaughter.

Trial objectives

- Evaluate a range of alternative forage brassicas for lamb finishing
- Compare bio-active forage mixes and brassicas
- Evaluate effects on cleanliness of lambs of the crops, finishing dates and lamb breed

Materials and Methods Year 1

- 5 plots each 0.33ha +grass runback
- Crops sown 9th July (Kale 1month earlier)
- 15 lambs /plot grazed Nov 3- Dec 12 (39d)
- 3 breeds :
 - Highlander X Blackface heavy fleece 4-5Kg
 - Mule – medium fleece 2-3Kg
 - Easycare X Blackface – wool shedding

Keeping lambs clean on forage crops is important in the autumn

Lambs :EasycareX Highlander X BF and Mule

Hybrid Brassica Swift

Chicory /plantain/clover/timothy

Short fleeces, control of worms using chicory and plantain in mixes may reduce dagginess

Year 1 Lambs on forage brassicas

Crop	Crop Yield (Ton/Ha.Fresh)	Daily Gain (g/day)	Carcass gain (g/day)	KO %
Hybrids	51	246	143	45.1
Kale	58	210	132	45.7
Mixes	44	251	135	44.2
S. turnips	114	209	133	45.4
Rape	40	185	128	46.7
s.e.d	na	24	9.8	0.84
Level of sig.	na	P>0.05	NS	P=0.05

Conclusion

- Variety of forage brassica does not affect rate of lamb carcass gain in Nov/Dec
- Utilisation problems with stubble turnips
- Varietal choice dependant on when field becomes available
- Farmers liked performance and yield of July sown hybrids e.g. Swift

Materials and Methods Year 2

- 5 plots each 0.33ha +grass runback
- Crops sown May 30
- 15 lambs /plot grazed 18 Aug –17 sept (43d)
- 3 breeds :
 - Highlander X Blackface heavy fleece 4-5Kg
 - Mule – medium fleece 2-3Kg
 - Easycare F2 – fully wool shedding

Bioactive crops

↑
Plantain

↑
Chicory

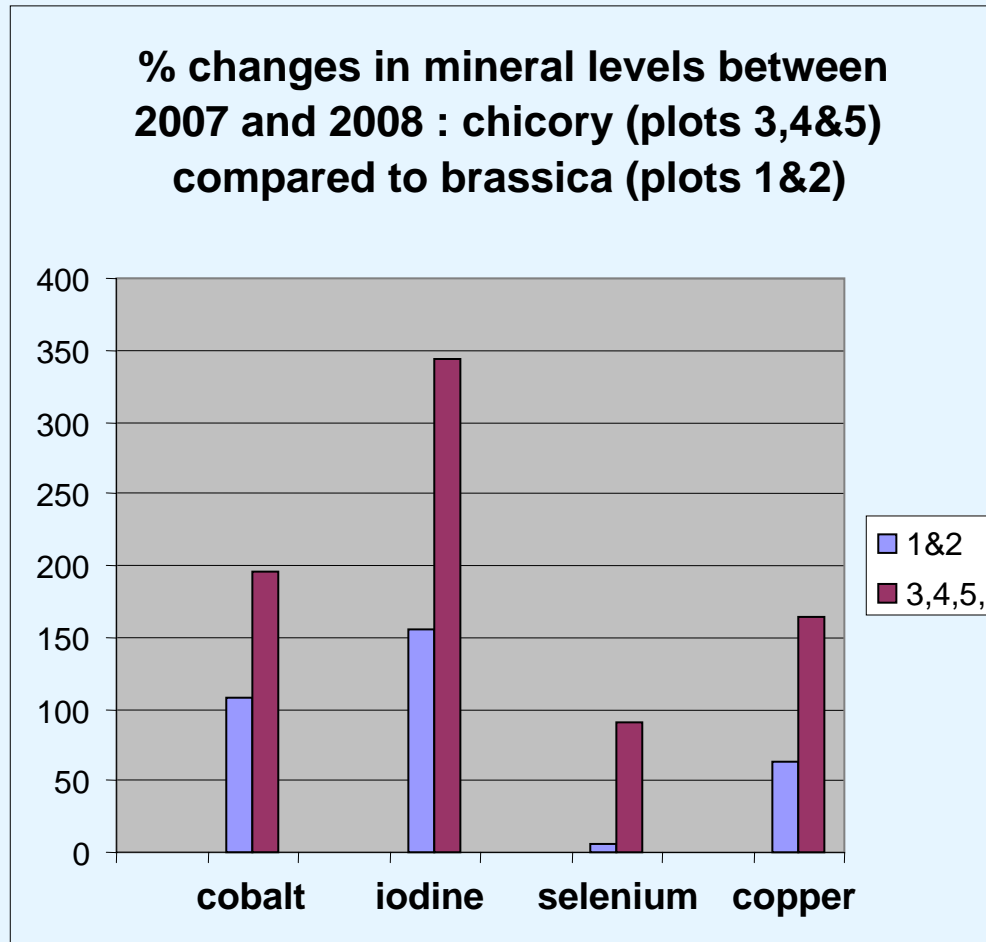
Year 2 forage brassicas vs chicory mixes

Crops 2008	Daily gain (g/day)	Fresh yield (t/Ha)	% lambs finished
Hybrid brassicas (HB)	184	55	90
HB + chicory /plantain (CP)	215	41	90
CP + white clover * (WC)	130	39	80
CP + WC +timothy	102	34	80
CP/WC/Red clover	127	40	80
s.e.d (Level of sig)	24 (P<0.05)		
* Organic –no fert.			

Year 2 forage brassicas vs chicory mixes

Crops 2008	Initial FEC(epg)	Final FEC (epg)	Dag score
Hybrid brassicas (HB)	227	959	1.4
HB + chicory /plantain (CP)	253	656	1.4
CP + white clover (WC)	223	335	1.4
CP +WC +timothy	139	425	1.8
CP/WC/Red clover	111	258	2.0
P value		0.12	NS

Mineral content of chicory v.s Brassica grown on same plot



Conclusions :Year 2

- In a wet year crop yield and performance of lambs on chicory mixes was much poorer than hybrid brassicas
- Chicory was bio- active and reduced F.E.C
- Chicory had better mineral content than brassicas.
- No effects of crop treatments on dag score-early finished lambs were clean.

Other findings

- 70 chicory plants /m² survived the winter in the hybrid brassica +chicory plantain mix
- Potential to reduce establishment costs addressing economic issues of bioactive crops such as chicory
- F2 Easycare lambs with long tails kept clean thus tail docking not needed for this breed

Acknowledgements

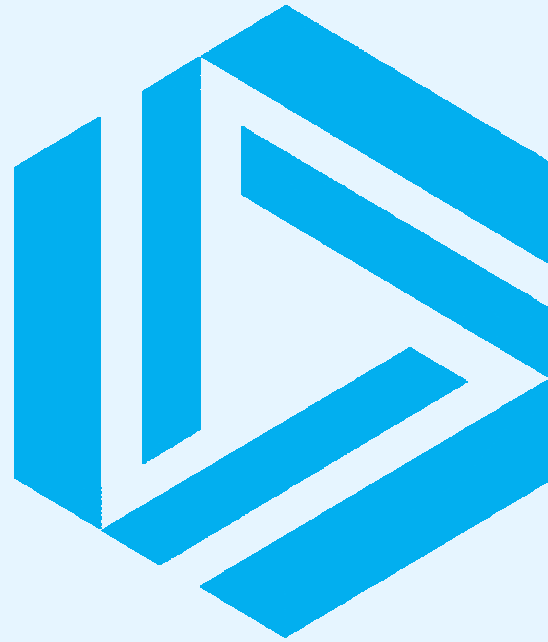
Jim Wight, Easter Fortessie

RUMENCO



Drew Guthrie, Buccleuch Estates





SAC

Success through **Knowledge**



Breed effects year 1

	Initial weight	Daily gain	Carcass gain
Breed	(Kg)	(g/day)	(g/day)
Scotch Mule	32.9	280	156
F1 Easy X BF	31.7	201	126
HighlanderX	36.3	179	120
s.e.d	0.52	18.7	7.5
Level of sig	P<0.01	P<0.001	P<0.01

Breed effects year 2

	Initial weight	Daily gain	Final dag score
Breed	(Kg)	(g/day)	
Scotch Mule	35.2	140	2.24
F2 Easy X BF	32.0	140	1.40
HighlanderX	31.0	184.5	1.44
s.e.d	1.7	17.8	0.379
Level of sig	$P < 0.01$	$P < 0.05$	$P = 0.081$

Untailed Easycare lambs are not daggy on forage crops in autumn

Belly wool not to shear at slaughter?

Carcass data Year 1

	Carcass wt	KO	Fat Score	Conf Score
Breed	(Kg)	%	2=2 4L=5	E=1 O=4
Mule	19.1	43.7	3.8	3.1
Easycare X BF	18.5	46.8	4.1	3.0
Highlander X BF	19.8	45.8	3.2	2.9
s.e.d.	0.35	0.65	0.16	0.09
Sig.	P<0.01	P<0.001	P<0.001	NS

Efficient lambs finish quickly

Weaned lambs with high growth rate need less feed to grow from 30 to 40 kg

Growth rate	Days to finish	Feed requirements	
		per day	Total
(g/d)	(d)	(kg)	(kg)
100	100	1.0	100
200	50	1.4	70
300	33	1.7	55