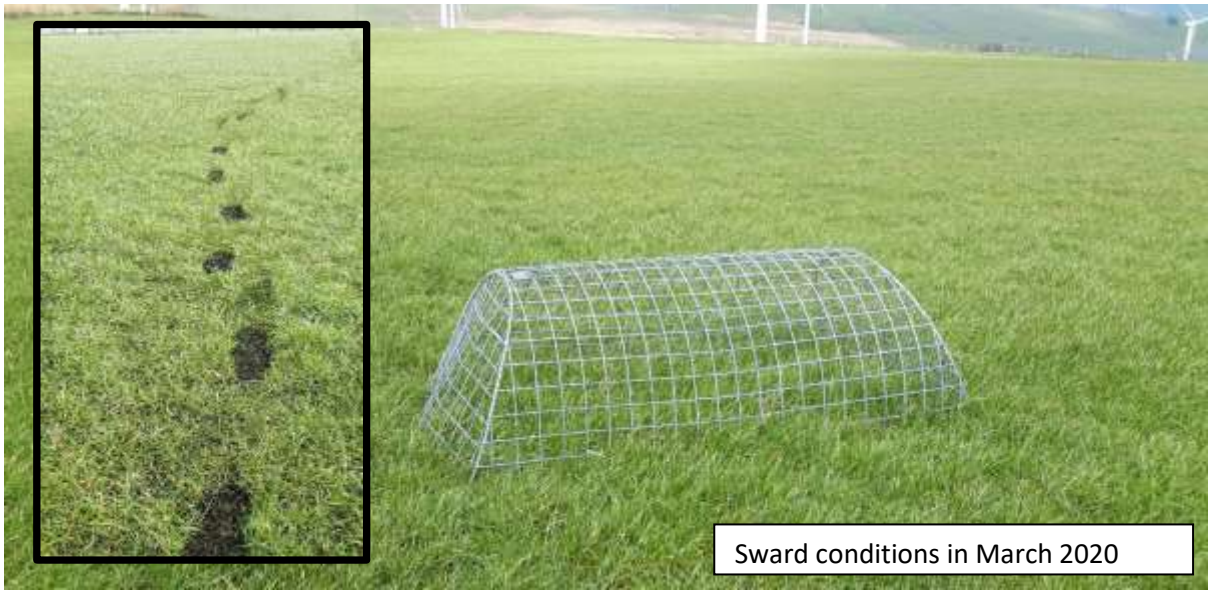
EIP 21 - Sustainable intensification in upland grazing production systems

Report following site visit and sward assessments - May 2020

Sward assessments were made from the exclusion areas on each of the plots on 25th May – assessing yields and sward composition.

Due to the growth stage and the amount of stem/headed material it was decided to delay forage quality assessment until the following sampling date.

The exclusion areas were plate metered on 5th March 2020 (conditions too wet and muddy to do baseline cuts) – so growth was recorded for an 81 day period



Sward conditions in March 2020

Table 1 displays the average growth rates for the 3 reps in each plot – with a plot range of 19kgDM/ha/day on plot 4 to over 45kgDM/day on plot 3. This range is a combination of soil conditions (plots 2 and 4 are particularly wet) – and the herbage mass carried into spring due to lack of winter grazing.

There is considerable variation within plots – so may be quite difficult for a statistician to find anything too significant. There is also no clear trend with plot performance recorded last autumn and this spring (Table 2)

The whole trial average of 33.9kgDM/ha/day is quite impressive – and the low productivity of the control area (Plot 9) a nice reminder of the value of reseeding.

Table 1 – Grass growth recorded March 5th to May 25th 2020

	grass sampling 25th May 2020							
		dry weigh	kgDM/ha	Plot average	Plate 5/3/20	herbage growth		daily growth rate
plot 1	a	63.5	6350					
	b	46	4600					
	c	44	4400	5117	2100	3017		37.2
plot 2	a	31.5	3150					
	b	47	4700					
	c	39	3900	3917	1560	2357		29.1
plot 3	a	67	6700					
	b	55	5500					
	c	60	6000	6067	2300	3767		46.5
plot 4	a	23	2300					
	b	20	2000					
	c	45	4500	2933	1420	1513		18.7
plot 5	a	46	4600					
	b	59	5900					
	c	58	5800	5433	2100	3333		41.2
plot 6	a	37	3700					
	b	62	6200					
	c	54	5400	5100	2200	2900		35.8
plot 7	a	33	3300					
	b	42	4200					
	c	33	3300	3600	1650	1950		24.1
plot 8	a	58	5800					
	b	63	6300					
	c	44	4400	5500	2350	3150		38.9
plot 9	a	12	1200					
	b	14	1400					
	c	18	1800	1467	1100	367		4.5
			average growth since 5/3/20			2748		33.9

Table 2 – Plot growth in ranked order (sept 2019 and May 2020)

Sep-19	May-20
6	3
3	5
2	8
8	1
7	6
1	2
4	7
5	4

The lack of winter grazing meant that swards looked well in early March – although wet there was no sign of winter kill. The ley had thickened up well – with very little bare ground, apart from the very wet areas.

Sward conditions from March through to May were not ideal – with several plots well above target sward covers. High covers will certainly not have encouraged the clover and plantain - and may have hampered the survival of any spring germinating timothy.

Wastage is likely to be high and the plots may need topping to ensure uniform residuals

All of the exclusion areas were assessed for species composition –

Table 3

		sward composition May 2020				
		%Ryegrass	%Timothy	%Plantain	%Wclover	% meadow grass
0	drill	76	0	1	2	20
	broadcast	47	0	0	4	37
10	drill	36	9	2	4	47
	broadcast	60	6	2	1	28
25	drill	57	12	3	2	17
	broadcast	63	4	3	0	28
40	drill	68	2	2	3	23
	broadcast	70	17	3	1	8
	drill	59	6	2	3	27
	broadcast	60	7	2	2	25

There is still no major differentiation in the amount of timothy in the various plots – and not enough to really impact on sward quality or animal performance. I had hoped that we may see some delayed germination of timothy – or a stronger presence in the sward as any timothy plants developed. All that seems to have happened is that meadow grass has filled in the gaps in the sward and the plantain and clover has suffered from being a bit smothered by the high winter/spring covers. There is slightly more timothy than at last survey – but still not sufficient to make them "timothy based swards" .

Table 4 – changing sward composition (Sept 2019 t May 2020)

		change in sward composition since sept 2019				
		%Ryegrass	%Timothy	%Plantain	%Wclover	% meadow grass
0	drill	7	0	-11	1	30
	broadcast	44	0	-26	-15	16
10	drill	3	9	-15	-10	40
	broadcast	8	4	-8	-2	26
25	drill	-21	2	0	1	13
	broadcast	-16	2	-9	-3	25
40	drill	-12	-1	-2	-7	22
	broadcast	17	5	-8	-10	3
	drill	-6	3	-7	-4	26
	broadcast	14	3	-13	-7	18

Project summary

To date the project has successfully established a ryegrass dominant sward in a tricky upland situation – using two establishment methods.

The sward is a huge step forward in both production and sward quality from the sward it replaced – and from the neighbouring control.

The timothy component of the sward has not established successfully and a result there is very little to differentiate the treatments. The reasons for the lack of timothy could be:-

a) seed quality – using non-certified seed does raise the question of germination percentage and seed viability. But as there are small areas of the plots where timothy has established relatively well that is probably not the key driver.

b) low seed survival due to waterlogged conditions. The seed is very small and would be prone to just rotting off in prolonged wet conditions.

c) Deep drilling – initially I was concerned that the drill depth in the very soft soil may have compromised the timothy – but the recent sward assessments show no trend between the two establishment methods.