

# Management of Grass/White Clover Swards



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# Benefits of Grass/White Clover Swards



## Introduction

- The recognition of the nitrogen (N) fixation, benefits in animal performance of grass-white clover pastures has led to a increase in clover seed sales by **40%** from 2022-2025
- Improved management practices are required to ensure that grass-white clover swards persist on grassland farms

## Benefits

- Grass/white clover benefits occur from late April/early May onwards as clover content rises as the season progresses

### Nitrogen Fixation

Clover can fix 70-100 kg N/ha/year



### Reduced N requirement

Reduce N to maintain herbage production



### Increased animal intake

5 – 8% increased animal dry matter intake – Summer and Autumn



### Animal Performance

Higher animal performance: 8–10% improvement



### Clover Management

Focus on: Grazing/Nutrient/ Soil Fertility/Management



# Establishment



## Establishment Plan

- 
- 
- 
- 
- 

Reseeding



Oversowing



Target Area  
reseeded (%)



Target area  
over-sown (%)

Year 1

5-10%

10%-15%

Year 2

5-10%

10%-15%

Year 3

5-10%

10%-15%

Year 4

5-10%

10%-15%

Year 5+

On-going process to maintain clover  
proportion

Establishing white clover swards requires a combination of reseeding and oversowing.

Incorporating white clover in a full reseed is the most reliable method of clover establishment.

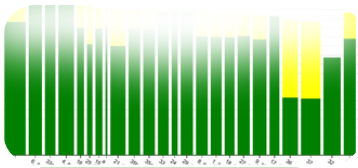
Over-sowing is a simple and low cost method of maintaining white clover swards. High soil fertility, weather conditions and post-sowing grazing management are critical factors for oversowing success.

# Reseeding

01

## Identify underperforming paddocks

- Use the annual tonnage report on PastureBase Ireland to identify underperforming paddocks
- Reseed in spring



02

## Spray off paddock

- Use glyphosate – allow a minimum of 10 days before cultivating



03

## Prepare a fine, firm seedbed

- Use most appropriate cultivation method for the paddock
- Ensure good cultivation



04

## Choose suitable varieties

- Use the Irish Recommended List for grass and clover varieties
- Sowing rate  $\left\{ \begin{array}{l} \text{Grass} - 28 \text{ kg/ha} \\ \text{Clover} - 5 \text{ kg/ha} \end{array} \right.$



05

## Spreading N, P, K

- Use most recent soil tests
- Lime for soil pH  $\geq 6.3$
- Phosphorus (P) for root development
- K (Potassium) for persistence



06

## Roll after sowing

- It is important to roll directly post-sowing to ensure adequate soil - seed contact



07

## Post emergence spray.

- Apply a clover safe spray after 6 weeks post-sowing



08

## Grazing Management

- Graze reseeded paddocks at low covers ( $< 1100 \text{ kg DM/ha}$ )
- Graze regularly



# Over Sowing



## Paddock Selection

- High perennial ryegrass content/open swards
- Optimal soil fertility
- Little to no weeds



## Timing & Conditions

- Over sow in April
- Over sow directly after a tight grazing (<4 cm)



## Seeding & Method

- Sow at 6 kg/ha
- Recommended list varieties



## Grazing Management

- Regular grazing
- Pre-grazing <1,100 kg DM/ha
- Post-grazing height: 4 cm

## Machinery

Ensure machine has the correct settings (sowing rate (6 kg/ha) and not burying seed too deep (10 mm)

Once machine is set correct and procedure followed - minimal variation between method

1



2



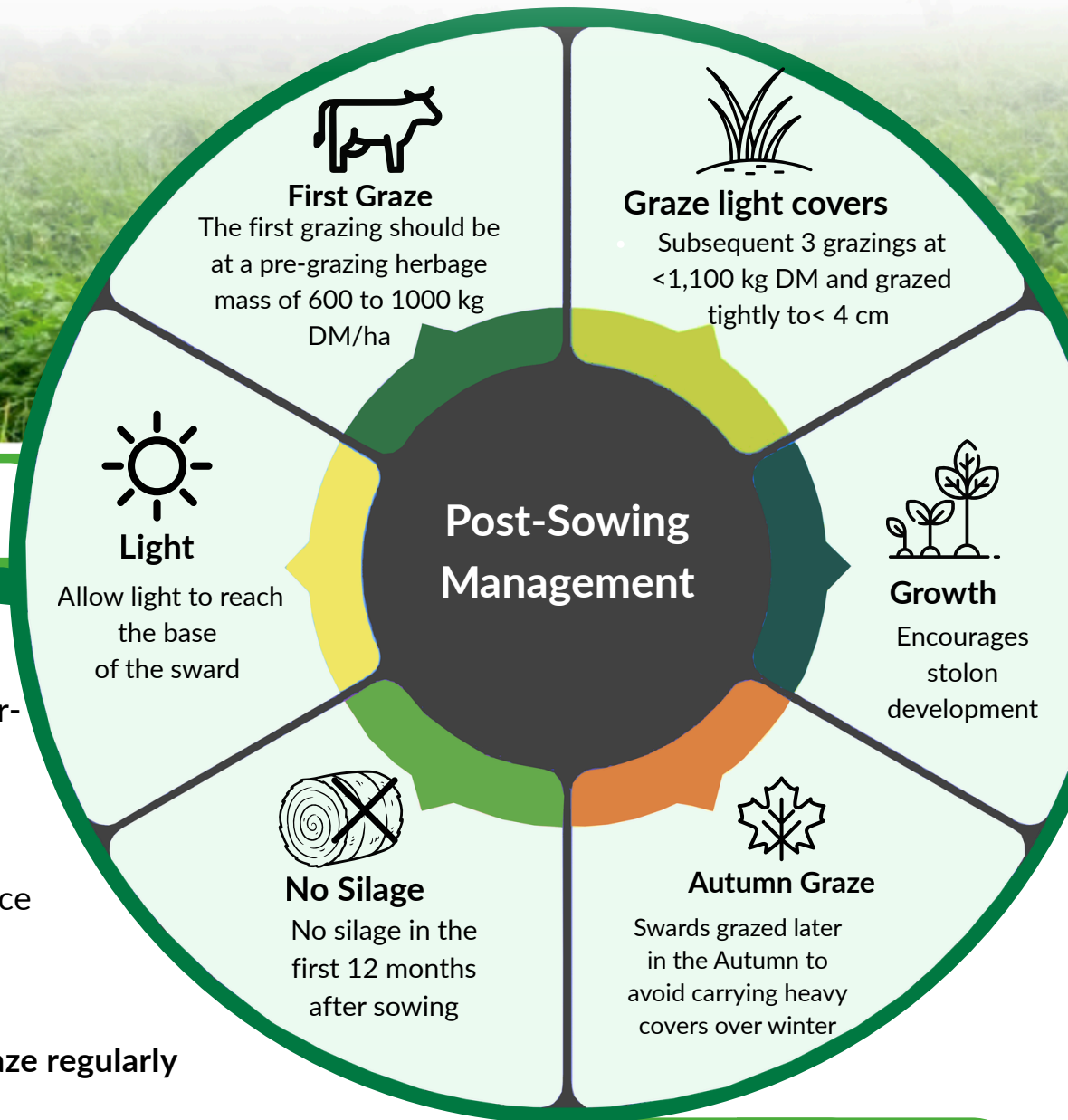
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4






# Reseeding/Oversowing Management



## → Grazing

Grazing management, post reseeding or oversowing is vital to ensure successful establishment and longer-term persistence

-  Graze regularly
-  Ensure light reaches the base of the sward
-  Nutrient Management for Grass-Clover Balance

## → Fertiliser Application

- Biological N fixation low in the first-year post sowing (<20 kg N fix/ha)
- Reseeds – 20 kg N/ha at sowing and 20 kg N/ha/month there after
- Maintain N post over-sowing - 15-20 kg N/ha/month

# Weed Control



## Over-sowing



- Weeds should be controlled in advance (previous year) in swards to be over-sowing to ensure a weed free sward
- Ensure herbicide residual timeline is adhered to

## New Reseeds



- Weeds are best controlled when the grass plant is at the three leaf stage and the clover when the trifoliate leaf has appeared
- Use white clover safe herbicides



## Established swards

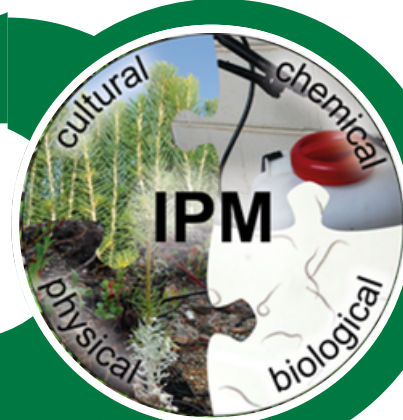


- Use clover-safe herbicides for weed control
- Spray when weeds are actively growing
- Optimal grazing management suppresses weed ingress

## Compliance



- Ensure Integrated Pest Management (IPM) is adhered to
- All pesticide users should comply with the regulations as outlined in the Sustainable Use Directive (SUD)



# White Clover Variety Selection

Variety Name	Total Yield	Leaf Size*	Clover %	Year 1 <sup>st</sup> Listed	Breeder
<sup>1</sup> Control Mean (t DM/ha): 9.9 t DM/ha					
<b>Brianna</b>	<b>100.4</b>	Very Large	47.9	2024	DLF
<b>Kakariki</b>	<b>101.5</b>	Very Large	53.0	2024	GTL/ Limagrain
<b>Clodagh</b>	<b>106.8</b>	Large	52.8	2025	Teagasc
<b>Barblanca</b>	<b>104.7</b>	Large	49.2	2009	Barenbrug
<b>Violin</b>	<b>101.2</b>	Large	45.9	2020	DLF
<b>Alice</b>	<b>100.0</b>	Large	49.0	1995	Barenbrug
<b>Dublin</b>	<b>101.8</b>	Large	49.0	2018	Teagasc
<b>Dundrum</b>	<b>105.2</b>	Medium	50.3	2026	Teagasc
<b>Dungloe</b>	<b>102.6</b>	Medium	49.7	2025	Teagasc
<b>Chieftain</b>	<b>97.2</b>	Medium	44.7	2005	Teagasc
<b>Aberswan</b>	<b>94.3</b>	Medium	49.1	2022	IBERS
<b>Buddy</b>	<b>98.4</b>	Medium	46.1	2015	Teagasc
<b>Iona</b>	<b>95.4</b>	Medium	42.0	2014	Teagasc
<b>Crusader</b>	<b>96.4</b>	Medium	45.3	2009	Barenbrug
<b>Aberherald</b>	<b>97.7</b>	Medium	44.8	2003	IBERS
<b>Coolfin</b>	<b>103.8</b>	Small	46.3	2017	Teagasc
<b>Aberpearl</b>	<b>99.6</b>	Small	44.7	2022	IBERS
<b>Aberace</b>	<b>95.1</b>	Small	32.8	2016	IBERS



White clover varieties are categorized by leaf size



Select from the recommended list of varieties only



Select varieties based on intended use using total yield and clover content

# Perennial Ryegrass Selection

## Pasture Profit Index values € / Ha / Year

Variety Name	Heading Ploidy	Date	Total	Sub-Indices						
			PPI	Spring Growth	Summer Growth	Autumn Growth	Quality	Stage	Persistence	Grazing Utilisation
Banbridge	T	26-May	268	97	42	19	42	53	0	15
Galgorm	D	26-May	213	57	53	34	45	26	0	-1
Barwave	T	22-May	197	107	31	20	-8	22	0	24
Tollymore	T	25-May	197	51	35	11	38	48	0	13
Aberclyde	T	25-May	187	35	46	8	71	24	0	2
Aberspey	T	27-May	174	23	42	27	65	13	0	4
Abersevern	D	4-Jun	169	-3	62	41	66	10	0	-7
Abergain	T	4-Jun	168	27	40	13	64	26	0	-2
Nashota	T	3-Jun	155	42	34	0	43	17	0	19
Gracehill	T	4-Jun	152	34	36	25	23	29	0	5
Aberplentiful	T	8-Jun	149	44	41	14	36	8	0	5
Abermagic	D	28-May	148	18	44	39	41	5	0	0
Astonconqueror	D	27-May	142	61	33	9	11	19	0	9
Ballintoy	T	4-Jun	142	36	37	12	35	14	0	7
Aberdon	D	13-Jun	141	-9	61	43	78	-10	0	-21
Silago	D	6-Jun	140	47	48	30	3	21	0	-9
Fintona	T	24-May	138	37	32	12	17	25	0	14
Glenfield	T	3-Jun	136	26	39	5	30	14	0	21
Anurad	T	5-Jun	136	41	28	2	44	7	0	14
Aberwolf	D	30-May	135	40	36	13	37	16	0	-6
Dunluce	T	29-May	128	13	37	15	42	14	0	7
Aberchoice	D	11-Jun	126	3	47	23	39	12	0	3
Melduno	T	3-Jun	126	38	33	9	36	3	0	5
Moira	D	26-May	121	91	17	18	-14	15	0	-7
Aberbann	D	10-Jun	116	-7	55	33	3	30	0	2
Abergreen	D	31-May	106	27	45	32	18	-9	0	-8
Astonenergy	T	1-Jun	106	-3	26	7	68	-8	0	16
Ballyvoy	D	3-Jun	104	41	22	10	40	-6	0	-3
Aberbite	T	1-Jun	103	-11	40	18	56	12	-18	5
Briant	T	3-Jun	84	-2	36	9	31	9	0	0
Xenon	T	7-Jun	80	-1	25	-3	40	2	0	18
Aspect	T	3-Jun	80	-1	29	-7	46	3	0	10
Astonking	D	5-Jun	74	49	30	0	-5	0	0	0
Triwarwic	T	2-Jun	69	7	31	-7	25	12	0	•
Drumbo	D	5-Jun	67	11	21	5	38	-4	0	-5
Oakpark	D	2-Jun	65	16	30	15	10	10	0	-15
Bowie	D	16-Jun	44	-1	32	16	19	9	0	-30

Perennial Ryegrass varieties should be selected from the recommended list and the Pasture Profit Index (PPI).



The PPI enables the identification of grass varieties which provide the greatest economic contribution



Farmers should carefully choose varieties appropriate for their requirements when using PPI



High PPI varieties deliver superior profitability under Irish grazing conditions

# Grazing



## Spring

- Target early grazing with 3.5–4 cm
- First closed swards should be grazed early
- Use flexible/on-off grazing with slurry and chemical N applications



## Summer

- Maintain pre-grazing herbage mass – 1300-1500 kg DM/ha
- 4 - 4.5cm residuals
- Reduce chemical N in line with sward clover content



## Autumn

- Build grass on the farm from early to mid-August - extend rotation length
- Close the farm in rotation (October)
- 4 cm residuals
- Graze newly establishing swards later in the final round



## Summary

- Target average sward clover content of 20%
- Keep pre-grazing herbage mass below 1500 kg DM/ha
- Use 4 cm grazing residuals to achieve and maintain sward clover content



- Grazing management is similar for grass-clover and grass-only swards.
- Flexibility and adapting to conditions are important when managing grass-clover swards.



- Good grazing management improves white clover persistency and production in grazed swards.
- Grass-clover swards benefit from low grazing residuals.

# Nutrient Management










## SOIL FERTILITY

- Clover requires a soil pH of 6.3 or greater
- Index 3 or 4 for P and K
- Soil P improves plant establishment
- Soil K increases stolon production

## N FERTILISER

- White clover can fix 70-100kg N/ha/year – greatest levels of BNF from May onwards
- Chemical N should only be reduced where sufficient clover content (>20%)
- A tailored farm and paddock fertiliser strategy is required

## Chemical Fertiliser (kg N/ha)

APRIL CLOVER CONTENT %	Chemical Fertiliser (kg N/ha)								Total
	MID FEB	MID MARCH	MID APRIL	MID MAY (2 ROT)	MID JUNE (2 ROT)	MID JULY (2 ROT)	MID AUG	MID SEPT	
 GRASS SWARD	24	36	20	32	30	28	21	23	214
 5%	20	35	20	20	20	20	20	20	175
 10%	20	35	20	15	15	10	15	20	150
 15%	20	35	20	15	10		10	20	130
 20%	20	35	20	15				15	105



= Soiled Water



Soiled water used when zero chemical N application



Chemical N fertiliser can be increased to 230kg N/ha in paddocks with no clover, provided whole farm N does not exceed 214kg N/ha



+25kg organic N applied

