



# Nitrogen (N) for 2024



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[www.teagasc.ie/dairycon23](http://www.teagasc.ie/dairycon23)

# Spring N fertiliser

## 3 N rates

1. 30 Kg
2. 60 Kg
3. 90 Kg

## 3 N splits (Feb:March)

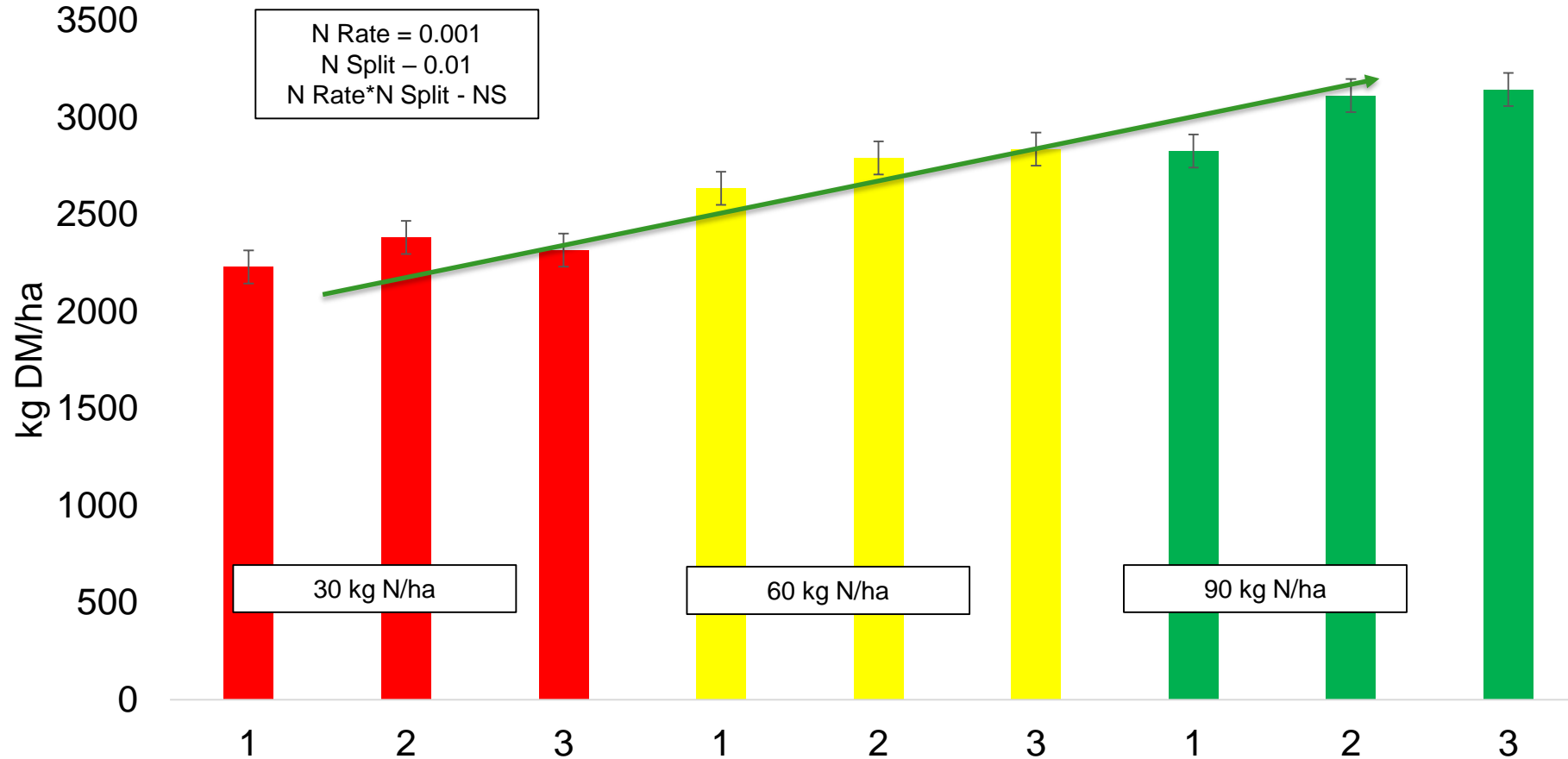
1. 0 : 100
2. 50 : 50
3. 33 : 66

N Rate by April (kg N/ha)	30			60			90		
Feb Application (kg N/ha)	0	15	10	0	30	20	0	45	30
March Application (kg N/ha)	30	15	20	60	30	40	90	45	60
<b>Total N (kg N/ha)</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>90</b>	<b>90</b>	<b>90</b>

- Nitrogen applied on Feb 3<sup>rd</sup> and March 16<sup>th</sup> both years
  - First defoliation took place on March 15<sup>th</sup> (40 days post N)
  - Second defoliation took place on April 23<sup>rd</sup> (38 days post N)

# Spring herbage

Spring Herbage yield (kg DM/ha)



\* N Split: 1= 0 N spread in application 1 and 100% in application 2, 2= 50% in application 1 and 50% in application 2 and 3= 33% in application 1 66% in application 2.

(Walsh et al., 2023)

# N response to spring N

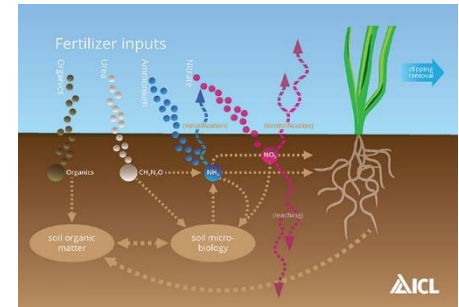
N rate (kg N/ha)	30			60			90			P-Values		
	N split <sup>1</sup>	0:100	50:50	33:66	0:100	50:50	33:66	0:100	50:50	33:66	SE	N rate
Nitrogen response defoliation 1 (kg DM/kg N applied)	-	14.0	16.4	-	9.3	11.5	-	5.9	8.9	3.15	0.055	-
Nitrogen response defoliation 2 (kg DM/kg N applied)	16.9	30.3	21.7	14.6	26.5	22.2	11.5	25.1	19.3	1.27	0.005	<0.001
Nitrogen response cumulative spring (defoliation 1 & 2) (kg DM/kg N applied)	-	22.1	19.9	-	17.8	18.6	-	15.5	15.8	1.71	0.013	-

- Increasing the level of N in February reduces N response
- However when no N applied in Feb – N response in March reduced



# What do spread?

- What are we trying to do?
  - Maximise herbage production
  - Increase N response
  - Reduce environmental losses

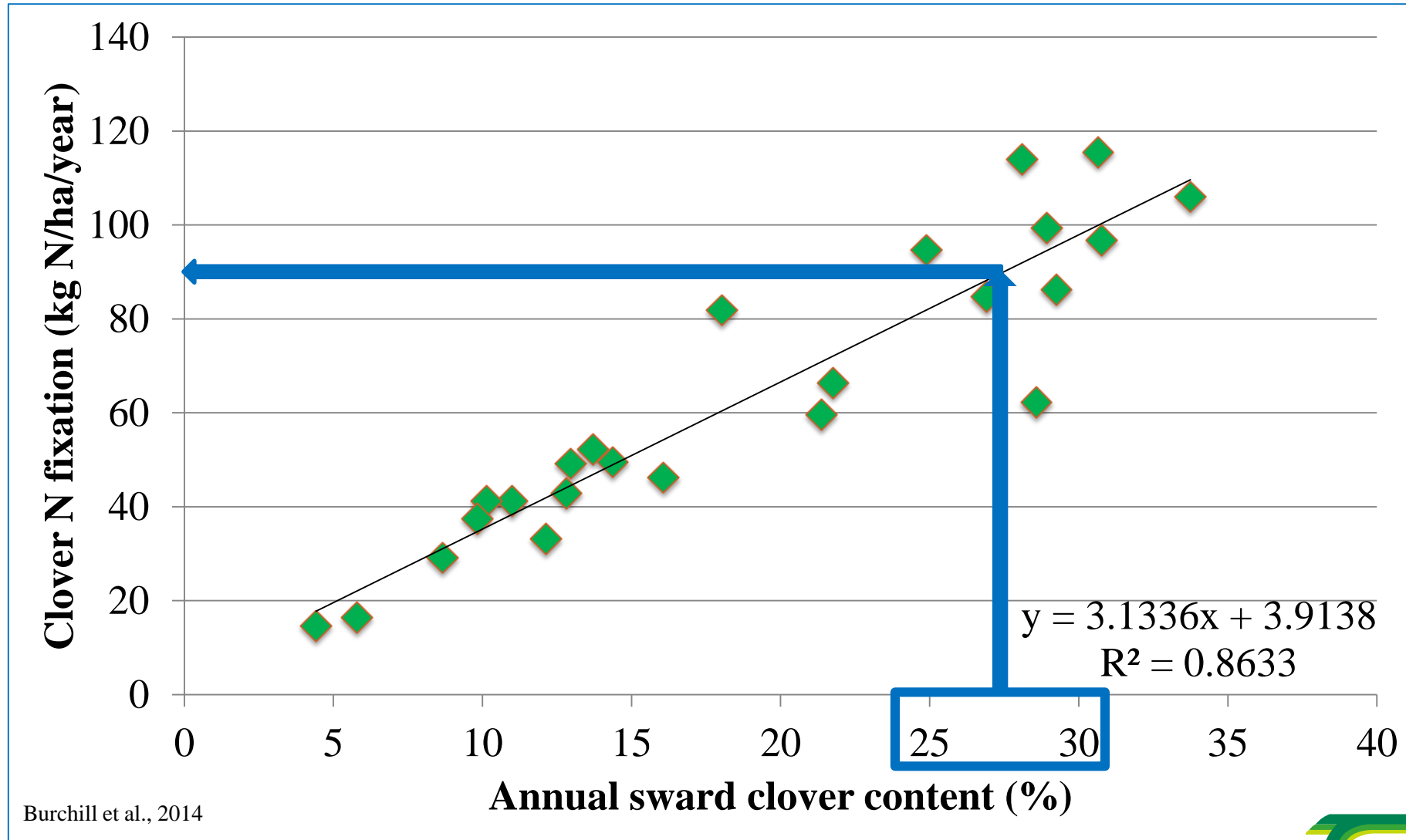


	30 kg N/ha	60 kg N/ha	90 kg N/ha
Kg DM/ha	2315	2835	3143
N Response (kg DM/kg N)	19.9	18.6	15.8
N Recovery (kg DM/kg N) (%)	18.6 (62%)	37.5 (63%)	53.3 (59%)

# White clover

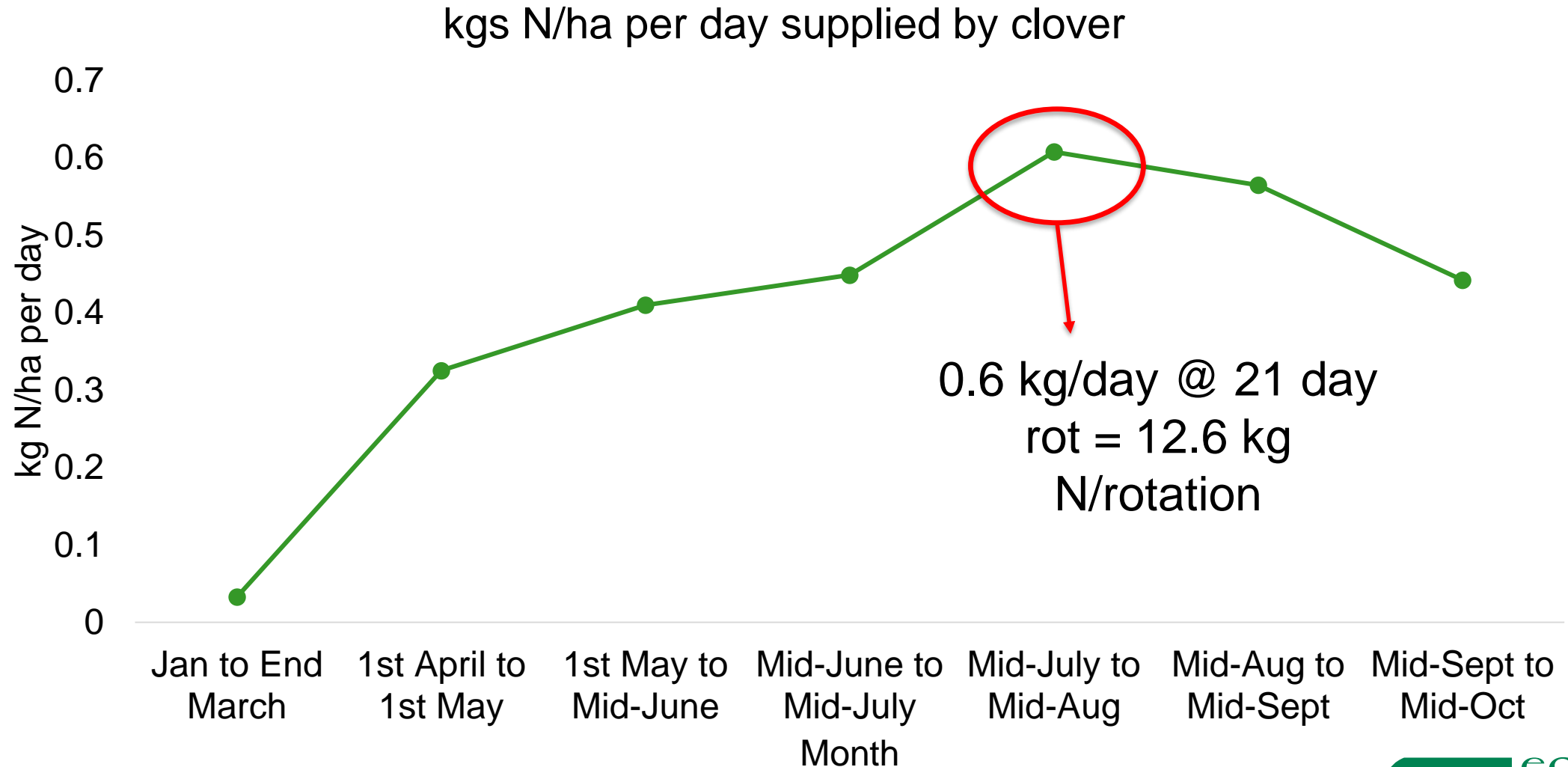
How and when can we save  
chemical N?

# Importance of sward clover content



Burchill et al., 2014

# When does clover supply N?





# Nitrogen strategy for clover %

Clover content (%)	Feb	Mar	April	May (2 rot)	June (2 rot)	July (2 rot)	Aug	Sept	Total
April	Kg N/ha	Kg N/ha	Kg N/ha	Kg N/ha	Kg N/ha	Kg N/ha	Kg N/ha	Kg N/ha	Kg N/ha
Grass sward	28	28	20	37	32	32	23	24	225
5%	28	27	20	20	20	20	20	20	175
10%	28	27	20	15	15	10	15	20	150
15%	28	27	20	15	10	*SW	10	20	130
20%	28	27	20	15	*SW	*SW	*SW	15	105

**\*SW - Soiled water used whenever zero chemical N application**

**\*25kg organic N applied**

Michael Egan, Dairy Conference, 2023