



Getting the best out of all N sources on your farm

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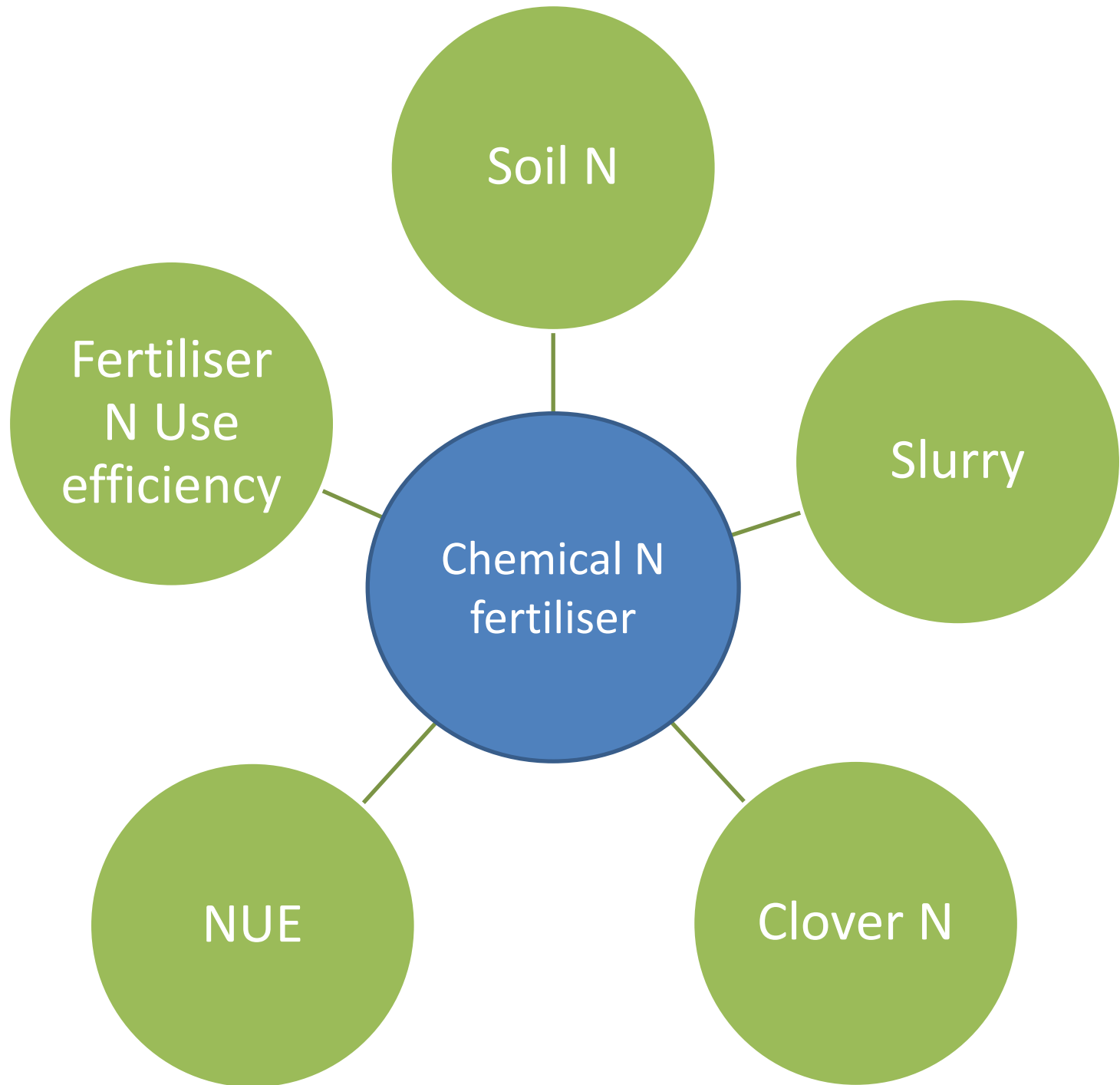
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The challenges

- Water quality
- GHG emissions
- Ammonia emissions
- 20% reduction in fertiliser N: EU Green Deal

Nitrogen fertiliser allowances

Kg organic N/ha	Lu/ha @ 85kg N/cow Old	Lu/ha @ 89kg N/cow Current	Fertiliser N units/acre (kg N/ha)	10% reduction in Fertiliser N- Starting point?	20% reduction in Fertiliser N- Green deal
<170	<2	<1.91	165 (206)	149 (185)	132 (165)
171-210	2-2.5	1.91-2.36	225 (282)	202 (252)	180 (225)
210-250	2.5-2.95	2.36-2.8	200 (250)	180 (225)	160 (200)
>250	>2.95	>2.8	200 (250)	180 (225)	160 (200)



Soil N

Fertiliser
N Use
efficiency

Slurry

Chemical N
fertiliser

NUE

Clover N

Rotation number	Graze date	Rotation length	Fertiliser date	Fertiliser N units/slurry	Blanket /Follow cows	Fertiliser product
			25-Jan	Slurry 2,500 gal/acre		
			01-Feb	23	Blanket	½ bag Urea/acre
1	05-Feb	60	05-Mar	46	Blanket	1 bag urea/acre
2	05-Apr	27	07-Apr	30	Follow cows	1.1 bags CAN/acre
3	02-May	22	04-May	27	Follow cows	1 bag CAN/acre
What is your fertiliser strategy?						
4	24-May	19	20-May	27	Follow cows	1 bag CAN/acre
5	12-Jun	22	14-Jun	27	Follow cows	1 bag CAN/acre
6	04-Jul	23	06-Jul	27	Follow cows	1 bag CAN/acre
7	27-Jul	23	29-Jul	27	Follow cows	1 bag CAN/acre
8	19-Aug	28	30-Aug	30	Blanket	1.5 bag CAN/acre
9	16-Sep	35				
10	21-Oct			264	Example paddock	

Rotation number	Graze date	Rotation length	Fertiliser date	Fertiliser N units/slurry	Blanket /Follow cows	Fertiliser product	
			01-Feb	2,500 Slurry gals/acres	Blanket		
1	05-Feb	60	05-Mar	46	Blanket	1 bag 46% Protected urea/acre	
2	05-Apr	27	07-Apr	30	Follow cows	¾ bag 38:0:0:7 protected urea/acre	
3	02-May	22	Strategy for now?			WS	0.65 bag 38:0:0:7 protected urea/acre
4	24-May	19		23	Follow cows	0.6 bag 38:0:0:7 protected urea/acre	
5	12-Jun	22		23	Follow cows	0.6 bag 38:0:0:7 protected urea/acre	
6	04-Jul	23		23	Follow cows	½ bag 46% Protected urea/acre	
7	27-Jul	23		23	Follow cows	½ bag 46% Protected urea/acre	
8	19-Aug	28	30-Aug	30	Blanket	0.65 bag 46% Protected urea/acre	
9	16-Sep	35					
10	21-Oct		Chemical N	223	Example paddock		



2,500 Slurry gals/acres

70 units by 1st April

Strategy for now?



Rotation number	Graze date	Rotation length	Fertiliser date	Fertiliser N units/slurry	Blanket /Follow cows	Fertiliser product
			01-Feb	2,500 Slurry gals/acres	Blanket	
1	05-Feb	60	05-Mar	46	Blanket	0.86 bags 46% protected urea/acre
2	05-Apr	27	07-Apr	30	Follow cows	$\frac{3}{4}$ bag 38:0:0:7 protected urea/acre
3	02-May	22	04-May	25	Follow cows	0.65 bag 38:0:0:7 protected urea/acre
4	24-May					0.65 bag 38:0:0:7 protected urea/acre
5	12-Jun	22	14-Jun	15	Follow cows	0.5 bag 29:0:14:3 protected urea/acre
6	04-Jul	23	06-Jul	15	Follow cows	0.5 bag 29:0:14:3 protected urea/acre
7	27-Jul	23	29-Jul	15	Follow cows	0.5 bag 29:0:14:3 protected urea/acre
8	19-Aug	28	30-Aug	23	Blanket	0.5 bags 46% protected urea/acre
9	16-Sep	35				
10	21-Oct			194	Example Paddock	

10% reduction strategy?

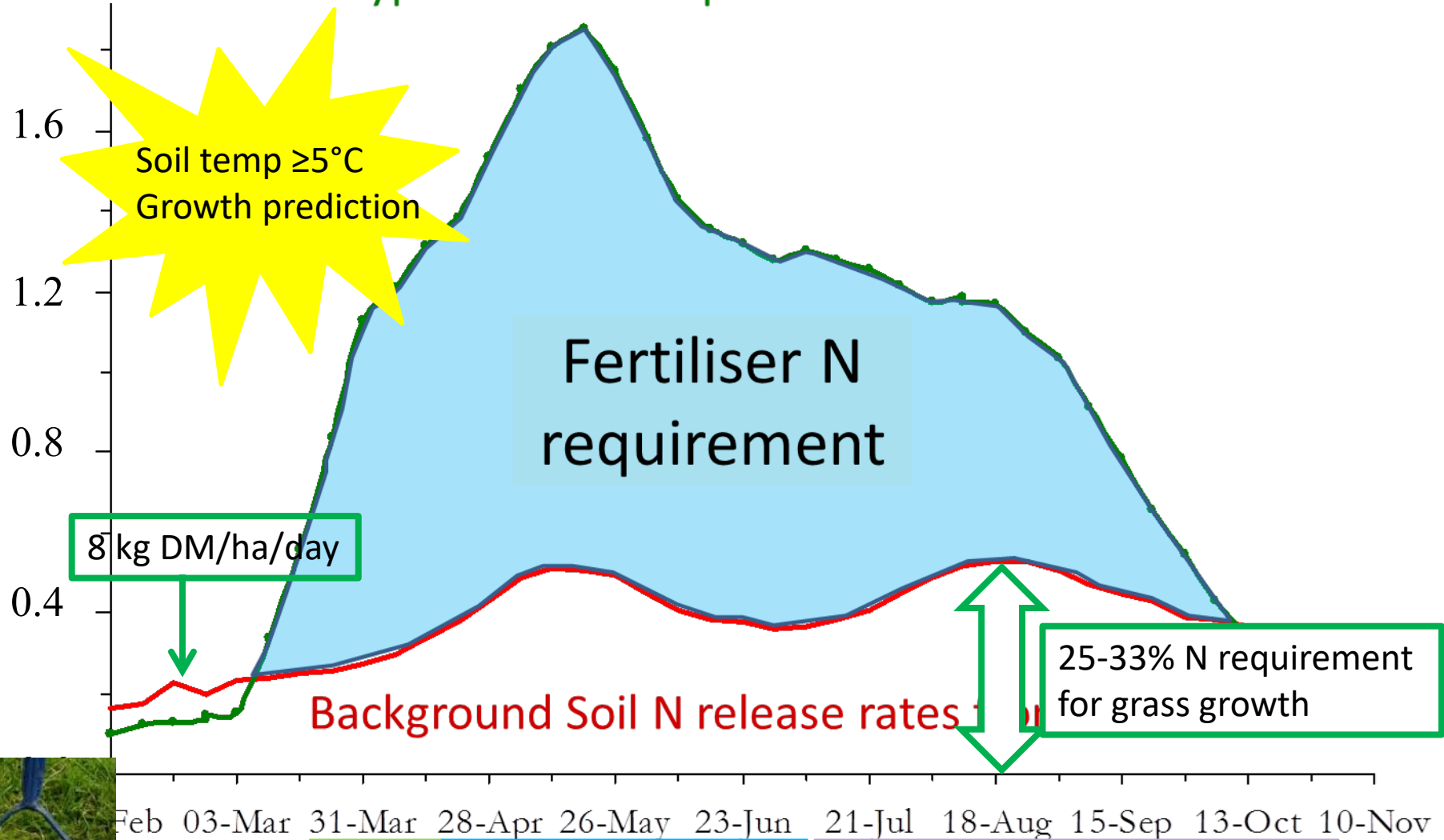
Slurry N

Splash plate Summer	LESS Spring
121,000 gallons	121,000 gallons
3 units/1,000 gal	9 units/1,000 gal
0.67 tonnes CAN	2 tonnes CAN
3.6 units N/acre	10.9 units N/acre

Soil N & Fertiliser N efficiency

Units N/acre/day

Typical Grass N Uptake rates over the season



Soil temp $\geq 5^{\circ}\text{C}$
Growth prediction

Fertiliser N
requirement

8 kg DM/ha/day

Background Soil N release rates

25-33% N requirement
for grass growth

Feb 03-Mar 31-Mar 28-Apr 26-May 23-Jun 21-Jul 18-Aug 15-Sep 13-Oct 10-Nov

P

Sulphur

K

Lime

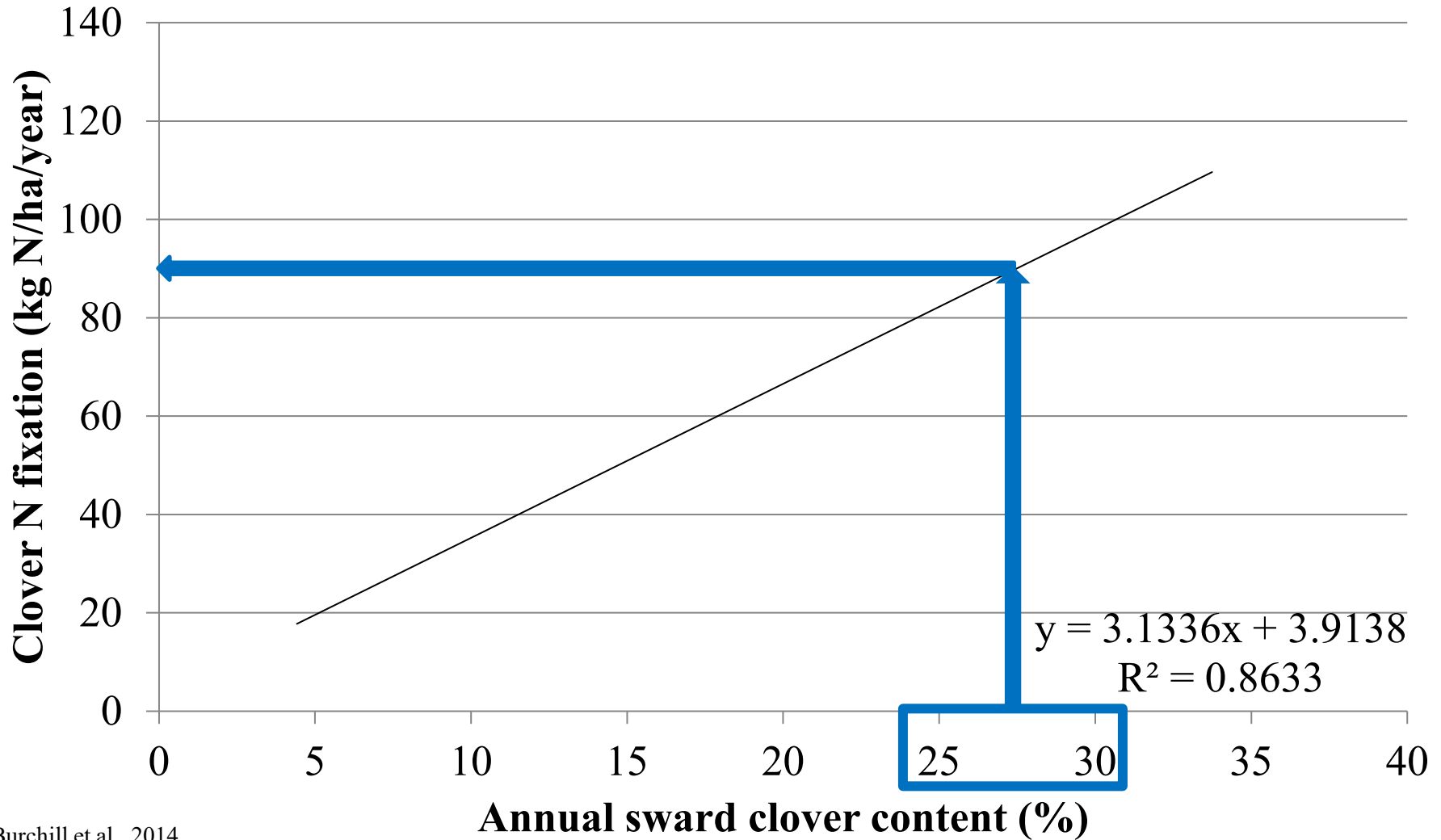


Clover N

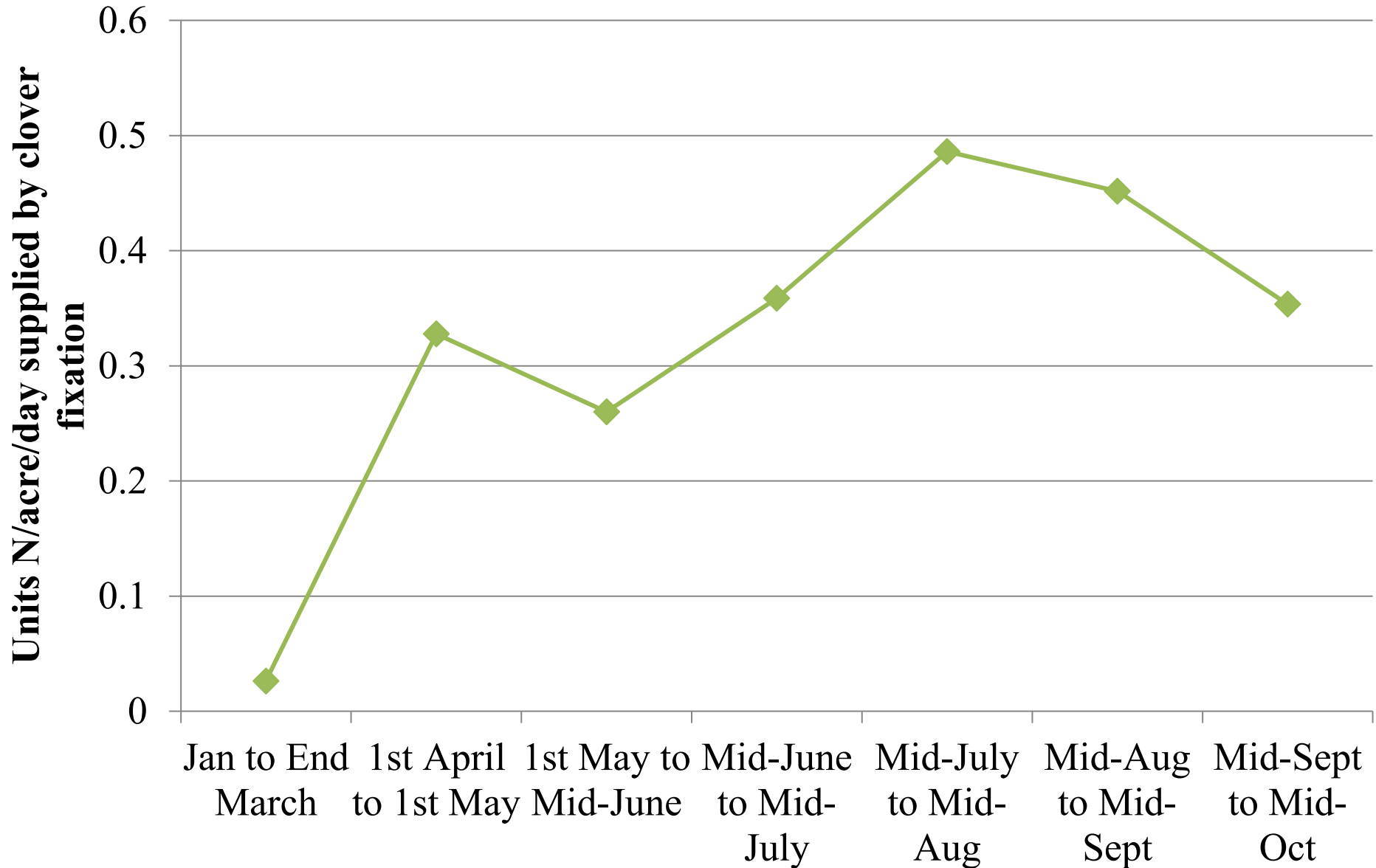
- White clover=N fixation 80 to 120 units/acre/year
- Red clover= N fixation 120 to 160 units/acre/year



Importance of sward clover content

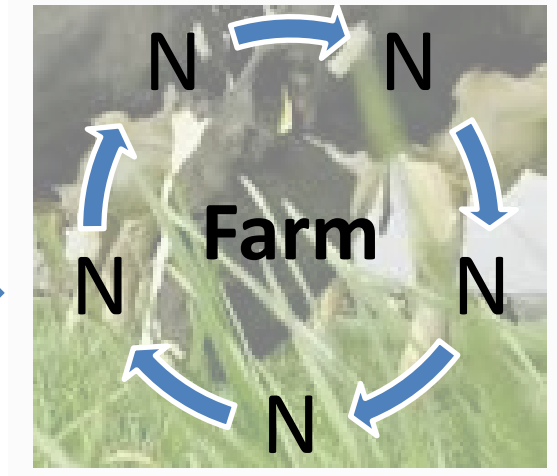


When does clover supply N?



Farm gate N use efficiency

N entering the farm



N leaving the farm



**Industry target – 35%
N use efficiency**

Take home messages

Step 1

- Soil fertility

Step 2

- Slurry N

Step 3

- Fertiliser N efficiency

Step 4

- Clover





Thank you

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