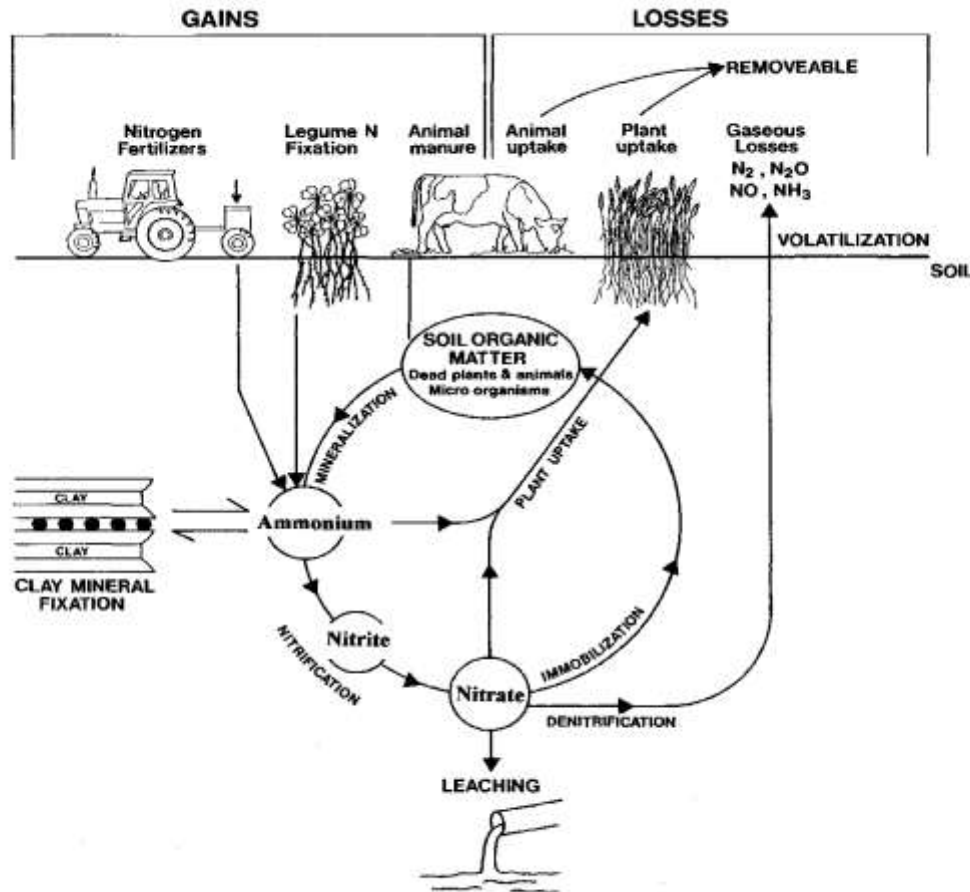


# Nitrogen fertiliser management and N loss



# Minimising direct fertiliser N loss used on pastures and crops

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- **Right Product**
- **Right Time**
- **Right Rate**
- **Right Place**

# Right Product

- Most N fertiliser highly soluble
- Some contain other nutrients
- Some contain 2 forms of N
- Some have special purpose coatings



Urea



GAS



DAP



CAN



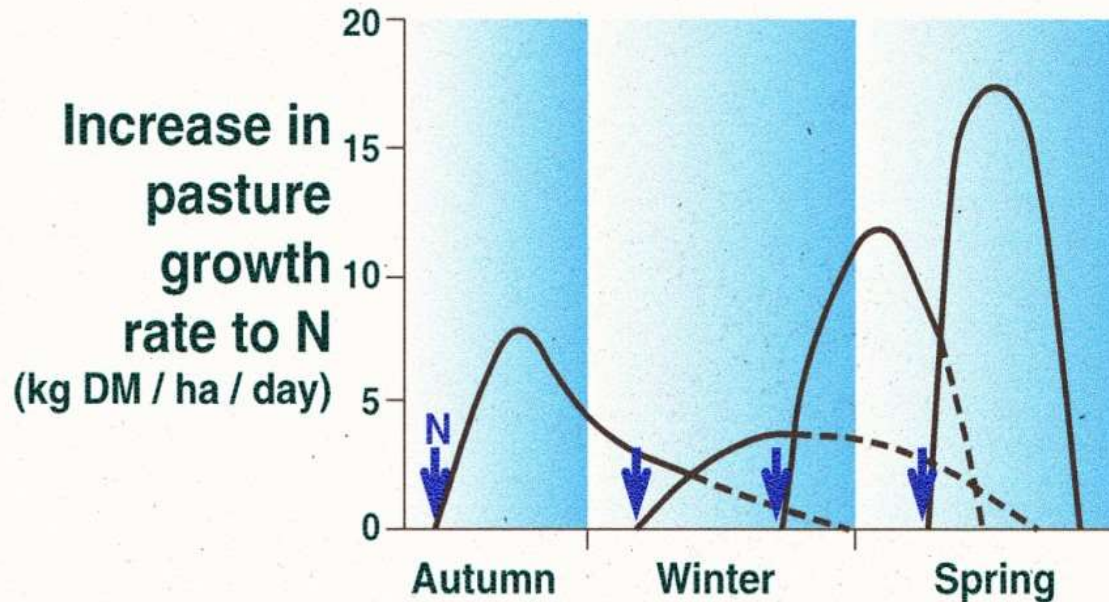
Controlled N



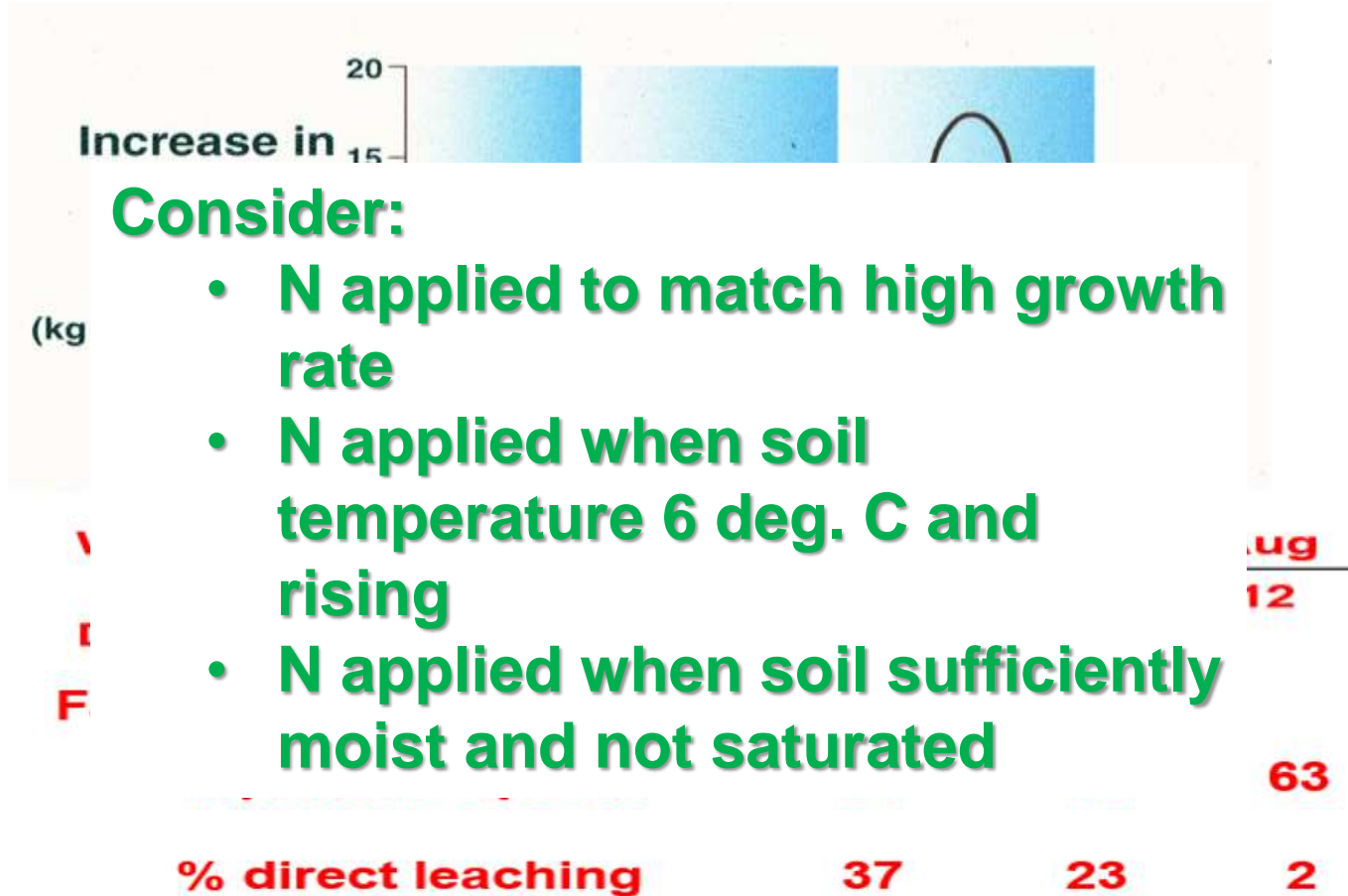
N Protect

# Right Time

Plant uptake is best when actively growing



# Right time



# Right rate

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**Response efficiency decreases with increasing application rate**

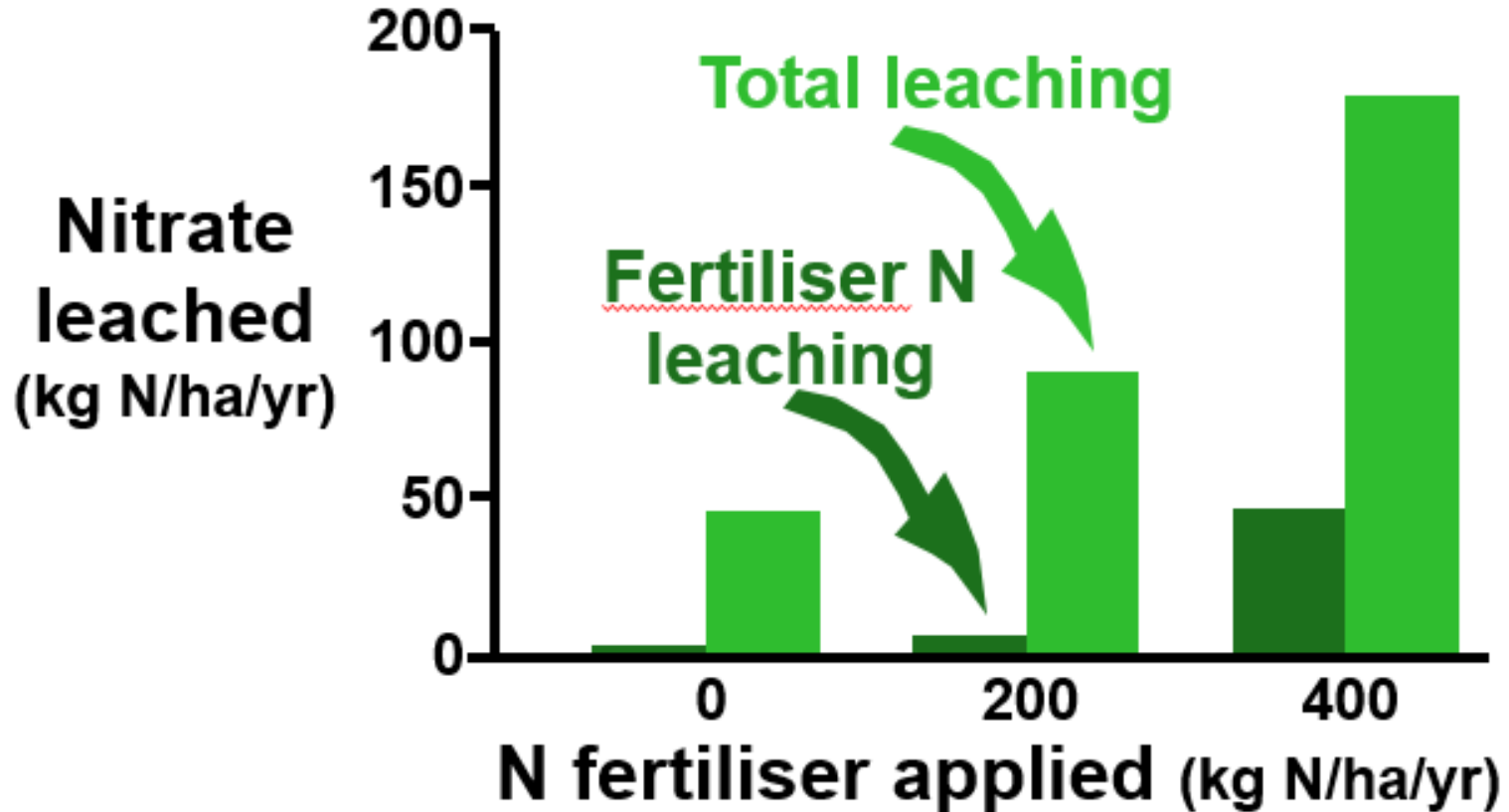
## **Consider:**

- **Soil/plant tests**
- **Crop type, yield and quality**
- **Previous crop/fertiliser history**
- **Climatic conditions (moisture/temperature) especially after application**
- **Lower rates more often?**

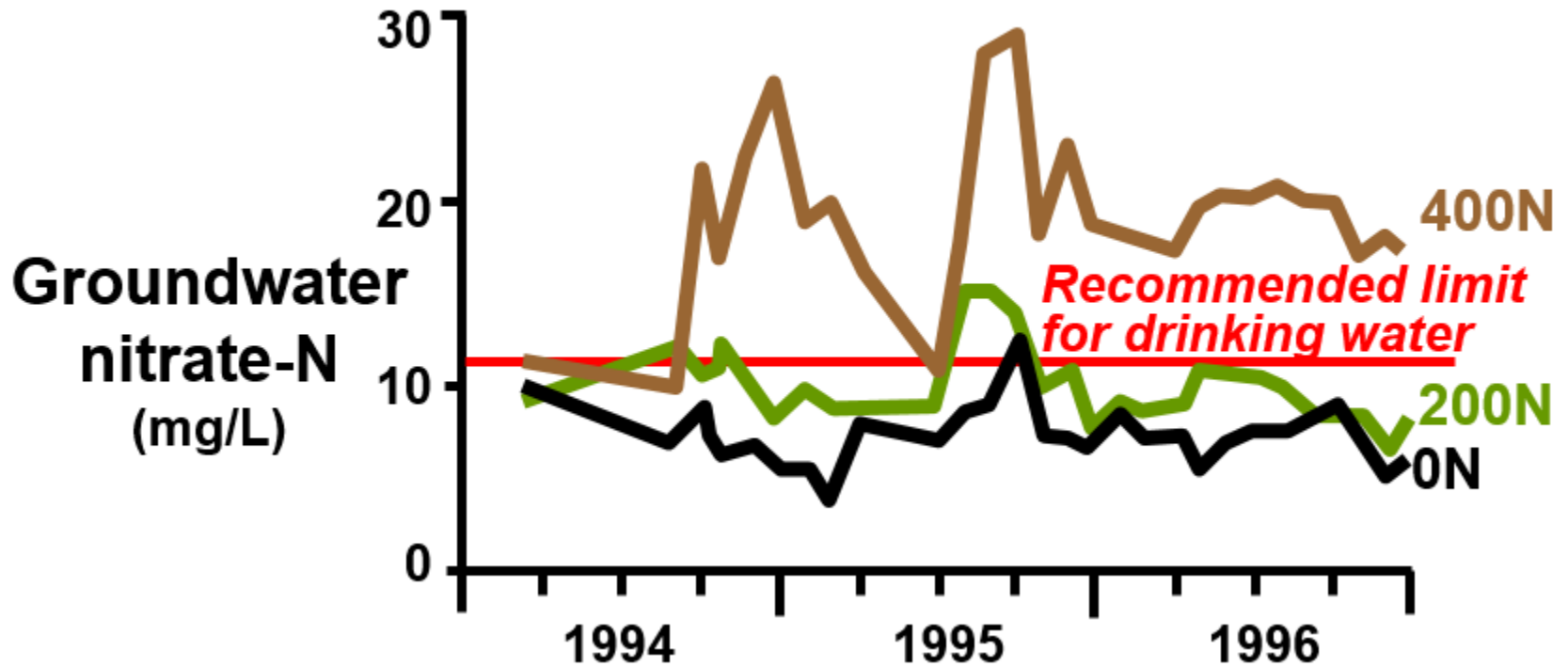


# Right rate

Waikato dairy grazing study ( ave. 5 years)



# Right rate

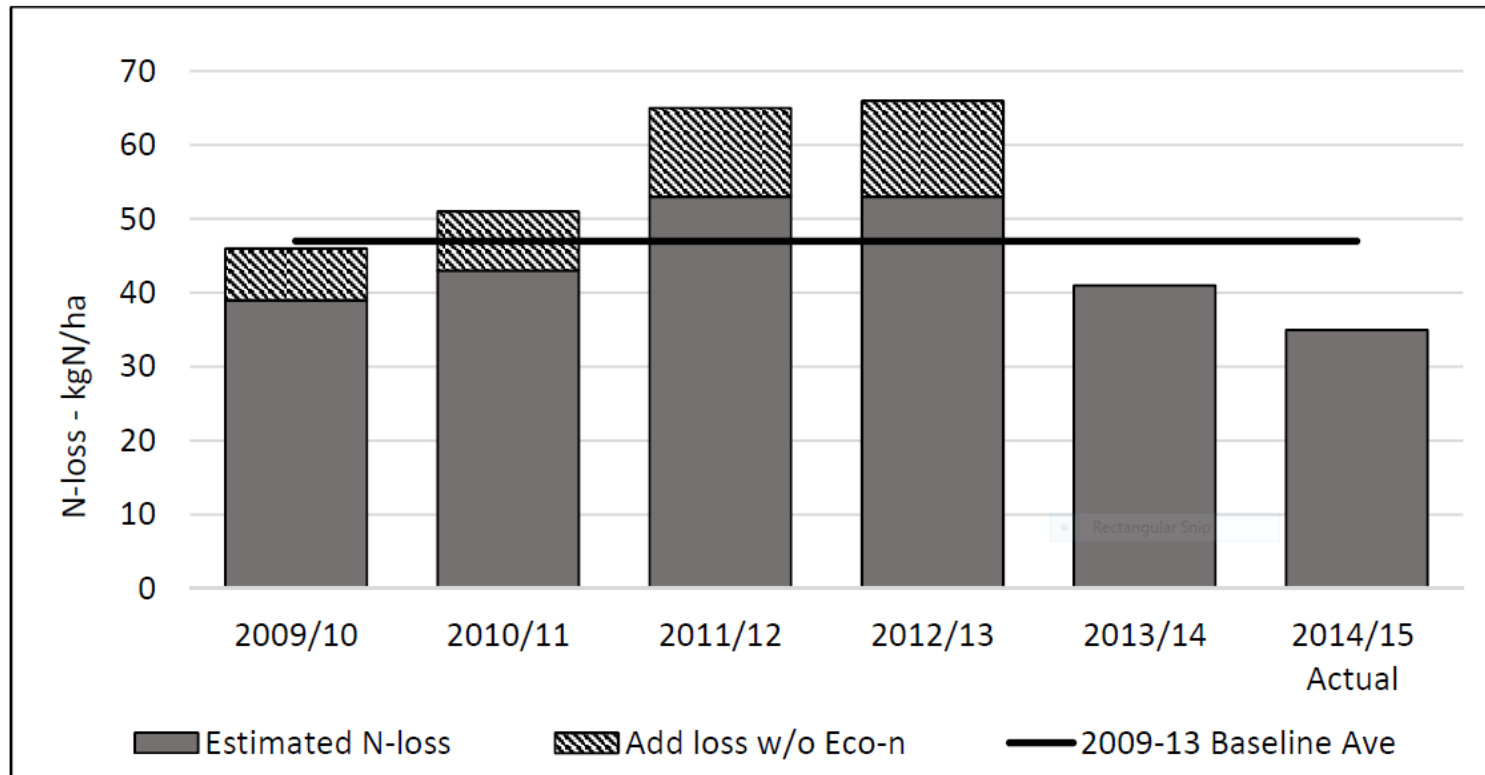




# Case Study: NOT business as usual – Lincoln Uni. Dairy Farm

## Indicative N-losses across years / farm systems at LUDF:

Figure 1: Overseer® v6.2 Estimated N-loss per hectare



# Change management at LUDF to stay at Baseline

	Baseline Years	2014/15 Season
<b>Total MS (kg)</b>	<b>284000</b>	<b>280000</b>
<b>MS/ha</b>	<b>1755</b>	<b>1750</b>
<b>Peak cows</b>	<b>650</b>	<b>560</b>
<b>Stocking rate (c/ha)</b>	<b>4.05</b>	<b>3.50</b>
<b>Supplements (kg DM/cow)</b>	<b>388</b>	<b>300</b>
<b>N fertiliser (kg N/ha)</b>	<b>285</b>	<b>150</b>
<b>Farm working expenses \$/kg MS)</b>	<b>\$3.74</b>	<b>\$4.00</b>

# Most N losses are system and NOT direct fertiliser losses

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**4R**  
Nutrient  
Stewardship

The central graphic is a blue rectangular box. On the left side of the box is a stylized green plant with several leaves and a brown root system. To the right of the plant, the text "4R" is written in large, bold, black letters. Below "4R", the words "Nutrient" and "Stewardship" are stacked vertically in a smaller, black, sans-serif font.