



# NUTRIENT WISE

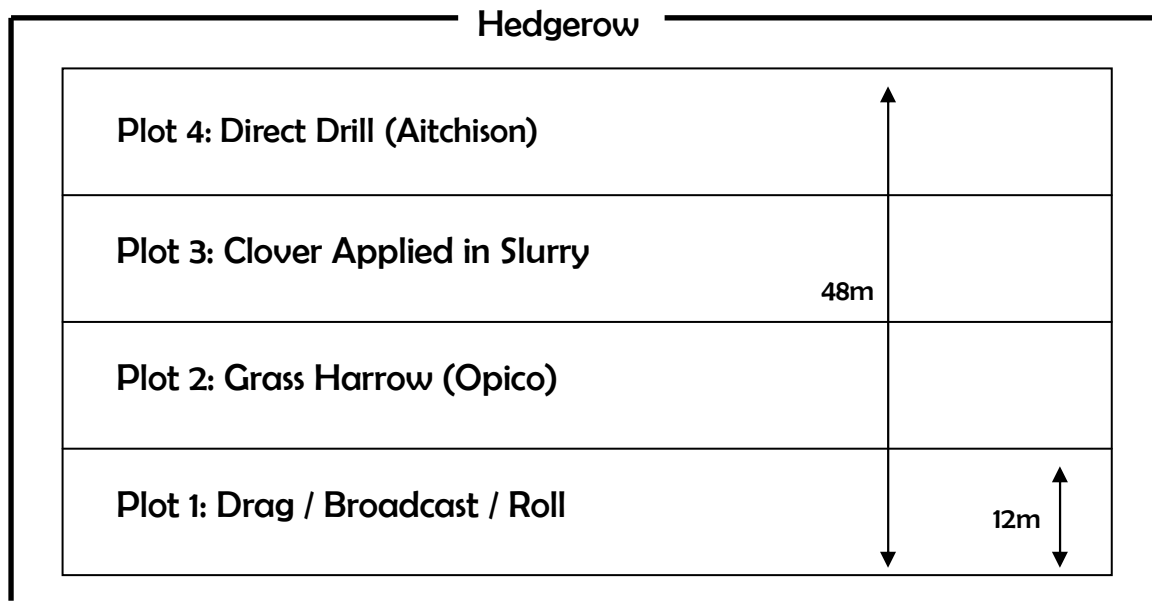
## Establishing White Clover in Grass Swards to Save on Nitrogen Fertiliser

This demonstration aims to compare different methods of establishing white clover in a grass sward.

### FIELD MANAGEMENT

- Soil analysis (15<sup>th</sup> May 2009) pH 5.7, P Index 3, K Index 1, SNS moderate
- Soil type sandy clay loam.
- Fertilised 15th July 2009 with basic slag (3t/ha) and 80kg/ha of Potash (applied as Muriate of Potash).
- Sprayed 24th May 2009 with Doxstar (folia acting herbicide containing fluroxypyr and triclopyr) to remove broad leaf weeds and clover.
- Field grazed down with dry stock to 1800kgDM/ha for 1st establishment and 1500kgDM/ha for 2nd establishment.
- Medium leaved white clover (varieties Aberdai, Riesling and Aberherald) established by 4 methods at a seed rate of 7.5kg/ha on 10<sup>th</sup> July 2009. The clover emerged well but failed after a couple of weeks.
- Clover was re sown (using a treated seed of the same variety) on 11<sup>th</sup> August 2009.
- 10 days post establishment field grazed with dry stock to 1500kgDM/ha to limit competition by grass.

### PLAN OF PLOTS AND CLOVER ESTABLISHMENT METHODS



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## CLOVER FACTS AND FIGURES

### Nitrogen Production

- Bacteria on the root nodules of the clover root convert nitrogen from the air into a form that can be utilised by the plant in a process called nitrogen fixation.
- 10% clover content within a sward will provide approximately 50kgN/ha/yr
- Target clover content commonly 30% clover content as at this level clover provides half the annual N requirement of the sward (150kgN/ha/yr). The clover plant really becomes active in summer. In the June - September period (120 days) in the region of 1.25kgN/ha/day is released. Such levels provide enough nitrogen for summer grass growth.
- Clover content of sward will vary through the growing season. From a low level in early spring, the proportion of clover can increase to 30-40% of the sward by late summer/autumn

### Assessing Clover Content

- As a rough guide in the main growing season 16 plants/m<sup>2</sup> is equivalent to approximately 20% of the content of the sward.
- Even in swards appearing to be predominantly clover the actual content is rarely more than 50%



### Fertilising Clover / Grass Swards

- Fertilising grazed swards
  - Generally little nitrogen is needed on swards with an appreciable clover content (approx 30%). However some nitrogen may need to be applied to grass/clover swards to encourage early spring or late autumn growth. Typically apply up to 50kgN/ha in mid February - early March if early grass growth is required and up to 50kgN/ha in late august - early September if autumn grass is required. (RB209 7<sup>th</sup> Edition 2000 MAFF)
- Fertilising cutting swards
  - Do not apply any nitrogen if a silage crop is taken from a grass/clover sward if the clover content needs to be maintained.
  - Do not apply any nitrogen to red clover or lucerne conservation.
  - Apply P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O as you would a pure grass sward.

### Establishing Clover in an Existing Sward (Over-sowing)

- A blend of medium and large leafed clover varieties is recommended for the most productive dairy pastures with medium to large leafed for grazing and large leafed for cutting/grazing fields.
- Sow the seed early in spring or mid season (after a silage cut) to minimise grass competition
- Control weeds adequately before sowing
- Reduce grass competition immediately prior to sowing by heavy grazing or cutting for silage.
- Place seed on or near soil surface in close contact with the soil.
- Stock heavily after sowing for short periods of time to control the grass during establishment.