

- The N recommendations for winter wheat in the Fertiliser Manual equate with optimum N (Nopt)
- Nopt is defined as the Rate of applied N where the value of the increase in yield equals the cost of the increment in fertiliser applied and beyond which additional N would not repay its cost
 Sylvester Bradley, Dampney & Murray, 1984
- The N: grain price (Break-even ratio) ratio affects Nopt and is set at 5 in the Fertiliser Manual and the HGCA 'Nitrogen for winter wheat – management guidelines'
- Both yield and Nopt cannot be predicted with certainty for individual crops

How applicable are the Fertiliser Manual N recommendations to winter wheat in NI?

Figure 1 Grain yield of winter wheat in experiments at AFBI Crossnacreevy 2007-2009

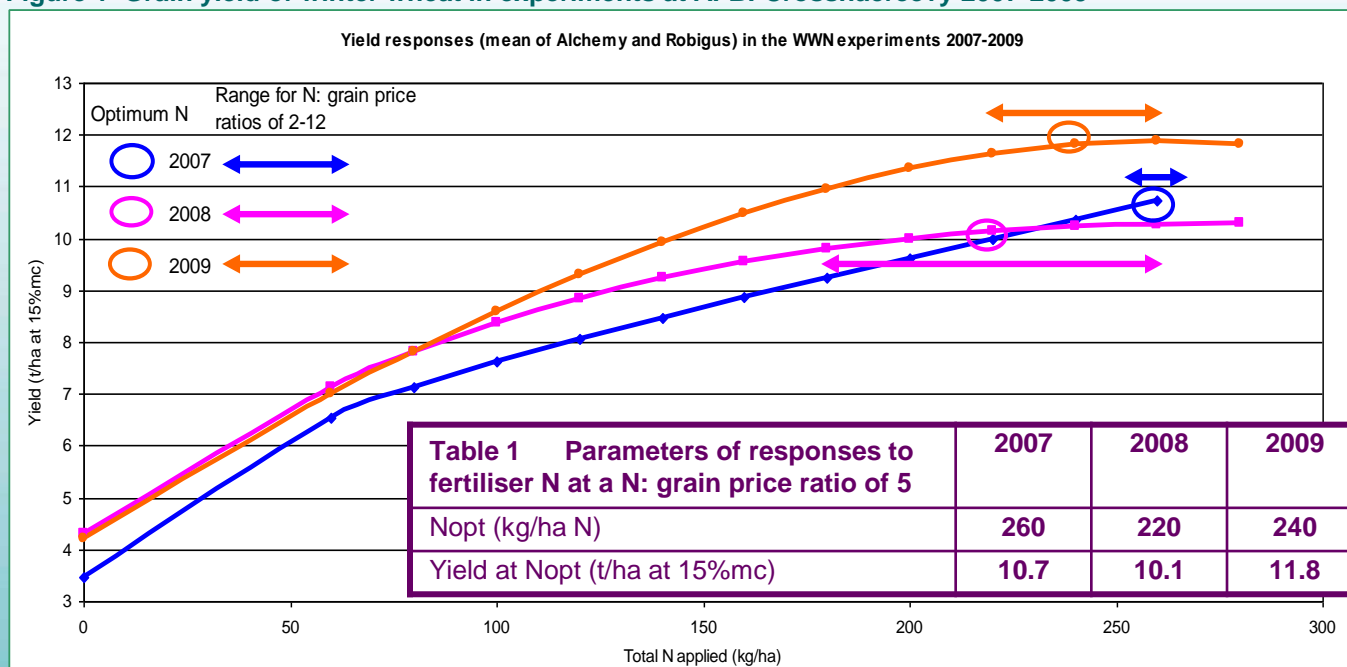


Table 2 Impact on yield and profitability of following Fertiliser Manual N recommendation of 220 kg/ha N assuming:
 SNS index 1

high rainfall area (Fertiliser Manual Table C)
 medium soil at an N: grain price ratio of 5

	2007	2008	2009
Yield at 220 kg/ha N (t/ha at 15%mc)	10.0	10.1	11.6
Loss in yield cf. N opt (t/ha at 15%mc)	0.7	0.0	0.2
Reduction in grain over fertiliser N margin cf. Nopt (£/ha)	53	0	8

Conclusions

- When Fertiliser N applied is within ± 40 ($\pm 60-80$) kg/ha of Nopt, margins will usually be **<£20** (<£50) /ha lower than at Nopt
- In the light of (1) variation in N: grain price ratio, (2) uncertainty in Nopt and (3) uncertainty in yield:
following the N recommendations in the Fertiliser Manual is the best strategy to maintain profitability

Resources:

Fertiliser Manual (formerly RB209)

Nitrogen for winter wheat – management guidelines HGCA, Autumn 2009

CAFRE Crop Nutrient Recommendation Calculator is one of the Farm Nutrient Calculators on the online services at www.ruralni.gov.uk