

LONG-TERM EFFECTS OF UREASE AND NITRIFICATION INHIBITOR ENHANCED FERTILISERS

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Fertiliser nitrogen (N) is a cornerstone input in many intensive agricultural systems including those prevalent in Irish temperate grassland. Increased new pressures to meet environmental commitments in addition to achieving agronomic potential economically has brought renewed interest to the subject of fertilizer nitrogen source and enhanced efficiency fertilizers. Field studies often examine the effects of fertilizer nitrogen options over single or a couple of growing seasons due to the nature of funding cycles. The present study examines the effect of a suite of N fertilizers applied to the same plots over the long-term (6 years and continuing). The fertilizers include; calcium ammonium nitrate (CAN), urea, urea + N- (n-butyl) thiophosphoric triamide (NBPT), urea + dicyandiamide (DCD) and urea+NBPT+DCD. This suite of fertilisers has, in previously published research, been shown to differ significantly in terms of gaseous N emissions. However, yield and nitrogen efficiency over single year trials have been more difficult to detect. Evidence of difference in agronomic performance between fertilisers in the current long-term trials is beginning to emerge. Results will be presented. The findings are important because changes in fertilizer practice at farm level occur not just in the short-term but in the long term.

Editor's note: *An extended manuscript has not been submitted for this presentation.*
