



Horticultural
Development
Company

New Project

FV 345

Establishing Best Practice for
determining Soil Nitrogen
Supply – Addition of field veg
sites to HGCA Project 3425

Project Number: FV 345

Title: Establishing Best Practice for determining Soil Nitrogen Supply – Addition of field veg sites to HGCA Project 3425

Start and end dates: 1 November 2008 to 31 March 2011

Project Leader: Dr Daniel Kindred, ADAS, Boxworth, Cambridge, CB23 4NN

Project Co-ordinator: Clive Rahn, Warwick HRI

Location: ADAS, Boxworth, Cambridge, CB23 4NN and sampling from locations around England and Scotland

Background and project objectives

This project is an add-on to an existing project funded by the HGCA. In recent years Defra have underpinned work on basic crop nutrition in the arable sector but little work has been done for horticulture. An opportunity was presented to piggy back onto this existing HGCA funded projects and gain some understanding on Soil mineral nitrogen. This approach was agreed by the FV Panel.

Project summary

Determining soil nitrogen supply (SNS), and hence N fertiliser requirements, for field crops is very uncertain. Imprecision in the N requirements used leads to large economic and environmental costs, as expensive N fertiliser is wasted or optimal yields and quality are not achieved. Data on nitrogen residues following field veg crops is very limited; more data is needed to inform field assessment methods for N fertiliser recommendations, including future revisions of RB209. Soil mineral nitrogen (SMN) testing is used widely for field veg crops, yet there are large uncertainties in the method and interpretation of results, hence a lack of confidence in the techniques exists in the industry.

The HGCA project involves: Consulting with the industry, reviewing past literature and data, comparing techniques for estimating SNS on 50 winter cereal sites per year for 3 years, including SMN sampling in autumn and spring and mineralisable N components. These crops include areas where no N fertiliser is applied throughout the season in order to allow nitrogen uptake by the crop to be measured at harvest; this measure of crop N uptake without fertiliser is used as the ultimate measure of soil N supply.

The HDC funded extension to the above project is to include an additional 5 sites per year on cereal crops following field vegetable crops. This would: allow field veg growers to learn the lessons on SNS estimation and use of SMN sampling being developed in the arable industry. Provide information on the levels of nitrogen residues that remain after field vegetable crops, and how much of this is available to the following crop.

Further information

Email the HDC office (hdc@hdc.org.uk), quoting your HDC number, alternatively contact the HDC at the address below.

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