

**Interpreting & Mananaging the Spatial Performance of Crops**

**Report October 2017**

* The work programme commenced in September with base line soil sampling in each of the four fields (Landing strip, Middle track, Sixteen acres & Bottom 10 acres. Samples are being processed with NRM.
* A work programme (see chart) has been finalised with David Jones highlighting key activities over an initial 5-year period. An operating procedure is being produced for each measurement/assessment activity.
* An additional field is being considered for some limited testing. Initial cultivations have indicated that there are some varied and challenging soil properties. Baseline assessments will be undertaken to characterise these and to guide any subsequent long-term monitoring.
* Agrovista have kindly agreed to undertake some additional soil scanning. This will include testing of: EC, OM, pH, slope, curve & elevation allowing us to create maps for potential yield zones, water characteristics, nitrogen leaching/losses and nutrient levels.
* The four fields are also due be 3D mapped using UAV-based cameras. This is being undertaken FOC by a local grower/UAV enthusiast.
* Interest in the project by the Farm Carbon Cutting Toolkit (FCCT) organisation. A meeting between Becky Wilson & David Jones has scoped out some potential collaboration. Simon Bowen to further discuss what areas of measurement and assessment may be covered.
* Initial meetings with Elizbeth Stockdale (Project lead for the AHDB/BBRO AHDB-BBRO Soil Biology and Soil Health Partnership) are identifying how the four fields can form part of the assessment and development of soil biological indicators.
* Simon Bowen is currently discussing with University-based statisticians the most appropriate approaches to adopt. Analysis of spatial variable data requires some specialised techniques.
* A recently published paper is the European Journal of Agricultural ‘Within-field variations in sugar beet yields and quality and their correlations with environmental variable in the East of England’ reports on work undertaken at Brooms Barn five years ago. Although quite limited in scope compared to our project it does provide some useful insight to both factors and scientific approach. Yields were positively correlated with plant population, organic matter and soil moisture. **This reinforces the potential value of the MAF/BBRO project, highlighting prospects for precision management of inputs such as variable seed rates and application of organic amendments and the use of field management zones.**