**BBRO PROJECT REPORT FORM**

**Please note the details on page 2 will be used to formulate the BBRO printed Annual Report.**

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| **Project Title:**  Evaluation of the use of placed nitrogen and phosphate fertiliser for the more efficient use of nutrients and improve crop yields. |
| **BBRO project no:**  | 16/04 |
| **Project sponsor:**  | BBRO |
|  **Interim report** |
| **Project lead or student name:** | Simon Bowen |
| **Project mentor or supervisors:** |  |
| **Report Date:** | April 2018 |
| **Reporting period covered:****(e.g. 1/1/16 - 31/12/16)** | 1/4/17 - 31/3/18 |
| **Timeline (e.g. Year 1 of 4)** | Year 1 |
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| BBRO use only | Date assessed:  |
|  Assessors comments |  |
|  Action required |  |

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| **Project summary (no more than 300 words)** |
| Nitrogen application technologies that minimise losses and maximise N uptake have been linked to improved fresh weight and sugar yields. This is attributed in part to earlier canopy establishment and improved nitrogen use efficiency. Work by the Nordic Beet Research (NBR) Institute has also indicated small but consistent responses in terms of crop yield and sugar content to the use of placed nitrogen and phosphate fertiliser. In the USA, the use of placed N fertilisers and placed phosphate as a starter fertiliser to encourage early plant establishment is widely recommended by advisors and practiced by growers. For the UK, it is important to understand in more detail the interaction between fertiliser placement, soil texture and soil mineral N content to assess in what circumstances yield benefit is seen, as well as opportunities for improved N use efficiency and reduced N inputs.  |
| **Short summary of key objectives** |
| * Assess both the efficiency of nutrient utilisation and the practical and financial aspects of fertiliser placement.
* To collect data on a range of nitrogen rates and use of placed starter phosphate across a range of soil types and nitrogen rates to support fertiliser recommendations in the next planned edition The Nutrient Management Guide (RB 209 ) in 2019
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| **Outcomes/Key messages for growers and industry** |
| * There were no significant effects of different fertiliser regimes on sugar yield. Plots receiving 60Kg yielded the same as plots receiving 120kg/ha. The effects of phosphate was not tested in 2017 but will be tested in subsequent seasons.
* The absence of responses is likely due to the very favourable weather conditions in 2017. Post germination temperatures and rainfall facilitated very rapid plant growth. Plants reached full crop cover very rapidly with no differences in canopy growth between treatments. The warm temperature and moist soils would have also encouraged elevated levels of soil mineralisation of nitrogen throughout the growth period, reducing reliance on applied nitrogen and masking differences between treatments. Differences between these treatments are likely to be more pronounced in a challenging season, especially in the period between emergence and establishment (6-leaf stage).
* This represents the first year of data and over the next few years, as this data set begins to build, we will have a better understanding of how different nitrogen application techniques can be best used to enhance yields.

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| **Section 1: To be completed by Project Lead:** |
| **Other project objectives (not listed on previous page)** |
| **Milestones for current period** |
| **Note: mentors will be asked to comment on the status of this project (yellow column) using the scoring system shown below** |
| **Status - Mentor’s scoring system for interim reports.** |
| RED | “Major concern - escalate to the next level" Slippage greater than 10% of remaining time or budget, or quality severely compromised. Corrective Action not in place, or not effective. Unlikely to deliver on time to budget or quality requirements. |
| AMBER | "Minor concern – being actively managed” Slippage less than 10% of remaining time or budget, or quality impact is minor. Remedial plan in place. |
| GREEN | "Normal level of attention" No material slippage. No additional attention needed |
| Milestones | Comments + Any Action required | Status R/A/G |
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| **Summary of results (including figures and tables)*****For Project Annual report****: please provide a 2 page summary of key findings from the reporting year.****For Project Final report:*** *please provide a summary of project findings and outcomes with relevant supporting data.* |
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| **Annual report: Key issues to be addressed next year:** |
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| **Publication of results to date/planned publications**: |
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| **Section 2: To be completed by project mentor** |
| **Is the project on track to meet the stated objectives? (please comment in relation to milestones and the status score awarded in section 1).** |
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| **Please comment on any proposed changes to milestones.** |
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| **Are conclusions scientifically robust? (please comment on data analysis/interpretation)** |
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| **For final reports only:**  |
| **How would you rate the project against the following criteria (please give a score out of 10, with 10 being highest)**1 ) The project met its original objectives:2) Contribution to scientific knowledge:3) Direct relevance to growers: |