**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:**  Assessment of the reduction of sugar losses by adopting a direct transfer ‘Chaser’-based harvesting system |
| **BBRO project no:**  | 17/08 |
| **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)** |
| The use of chaser bins are not an entirely new concept and have been used widely in Australia and North America transferring grain from combine to road truck for many years. The potential benefits of using a chaser-based system will depend on whether the crop is being directly loaded for just in time delivery to the factory or whether it is being used simply as a more efficient indirect system i.e. to unload the harvester in-field and transfer crop to a temporary pile or clamp before loading to the factory. The use of chasers in sugar beet has not been widely adopted but producers are beginning to consider the benefits. There is little independent data available on the advantages this system may deliver. |
| **Short summary of key objectives** |
| * Assess the advantages of sugar recovery through the use a of chaser- based harvest system for direct loading situation.
* The systems were assessed after either immediate delivery to factory or after 7 days in a temporary field heap (‘Days’ treatment on graph). This was to assess the impact of any differences between treatments on subsequent root yield and sugar content recovery.
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| LSD = 5.105 t/hahttp://www.continentalsoiltechnology.com/wp-content/uploads/2016/05/DSC_2739.jpg |
| **Outcomes/Key messages for growers and industry** |
| * This first year of the project saw replicated strip trials conducted at two sites in January and February of 2018; Lakenheath and Freckenham.
* The data was inconclusive with regards to which harvester-to-lorry delivery system resulted in the lowest losses. However, minimising the handling of the crop (Chaser direct to lorry) and immediate delivery to the factor, unsurprisingly favours improved crop recovery.
* The root breakage results were significant at both sites. With the Chaser system causing the more yield loss (just under 2% more) than the tractor-trailer system. However, these root breakages were only assessed at the clamps of two treatments and we therefore cannot be sure where in the systems these root breakages are occurring.
* These root breakages are more likely to become lost yield in a situation where the beet is placed in a clamp or a cleaner loader before going to the factory – Loading straight from the chaser to the lorry will mitigate some of this loss by delivering the larger broken roots to the factory. Many crops may need further cleaning (in addition to the Chaser cleaning system) to reduce soil tare and this is likely to be influenced by soil type and condition.
* The relative advantage of using a chaser to direct deliver to the lorry, even with possibly elevated root breakage levels against the use of a trailer, tipped to floor and then through a cleaner loader needs to be more carefully assessed across a range of conditions. This first year has given us many insights into how best to test these harvest-to-lorry systems and we hope to use this knowledge to better tailor the protocol in coming years to help us truly understand where the benefits of using chasers may lie.
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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: |