

Plant biomass and height calibration

Biomass

Plant cuts were taken to calibrate the Encoder. Cuts were 1.5 pvc quadrants in length and 2 rows wide. It was observed that canola readings (Fig 1) had less variation than the oats (Fig 2). This is attributed to plant structure with canola plants providing more resistance to the PVC quadrant than oats.

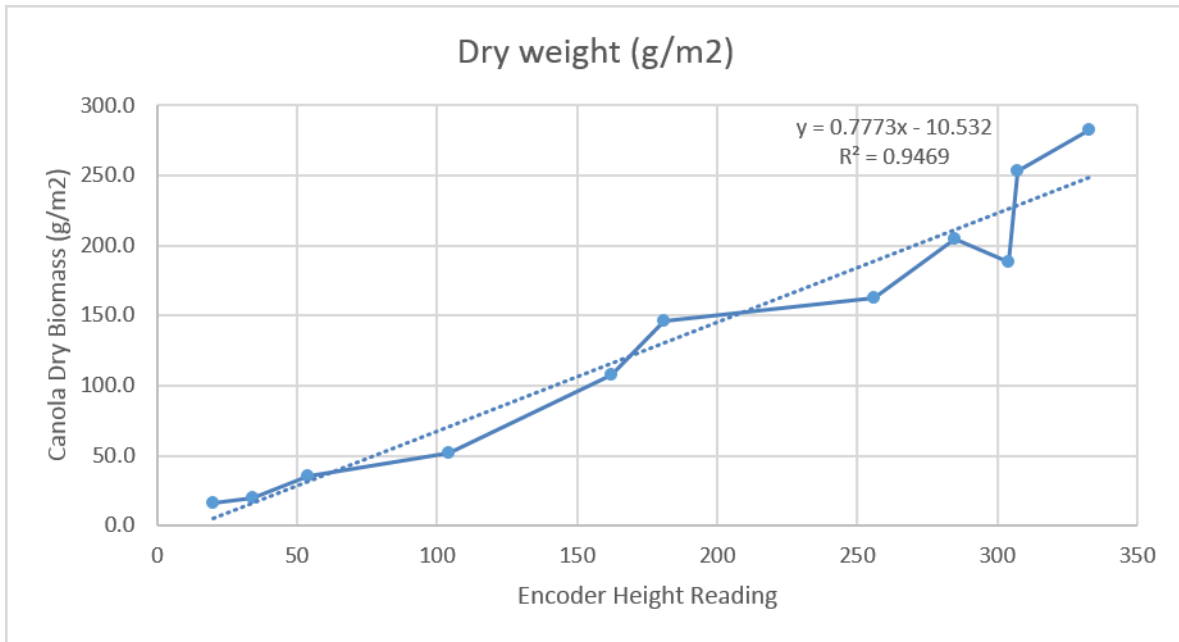


Figure 1: Biomass calibration results for canola.

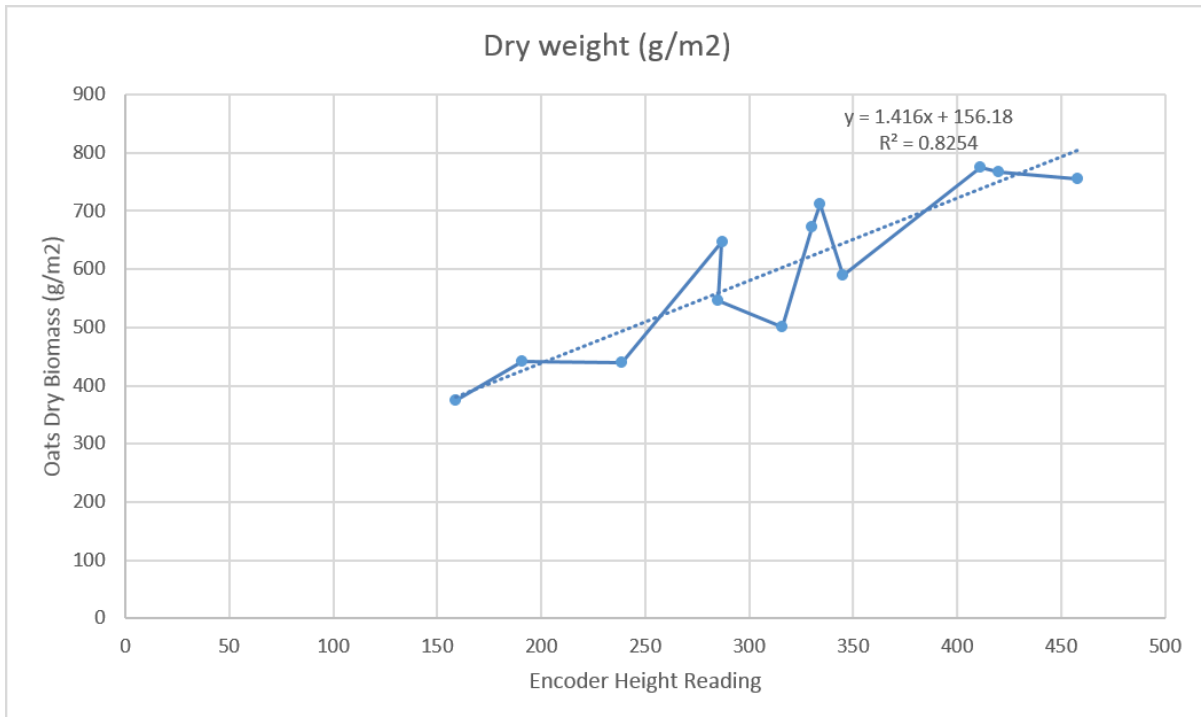


Figure 2: Biomass calibration results for oats

Plant height

To calibrate plant heights Mike took a few measurements within each plot, using a square polystyrene plate placed over two rows of the crop in two places per plot and recording heights (Fig 3). This was then repeated 3 times over the same plots moving in the same direction (Fig 4) to ensure repeatability.

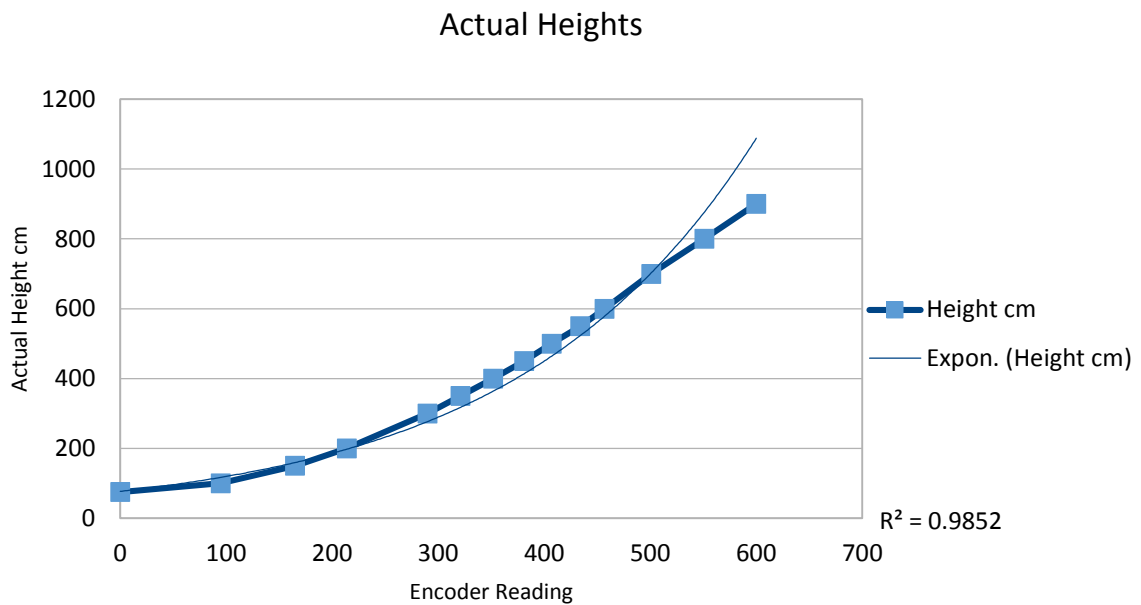


Figure 3: Actual and encoder height readings for wheat.

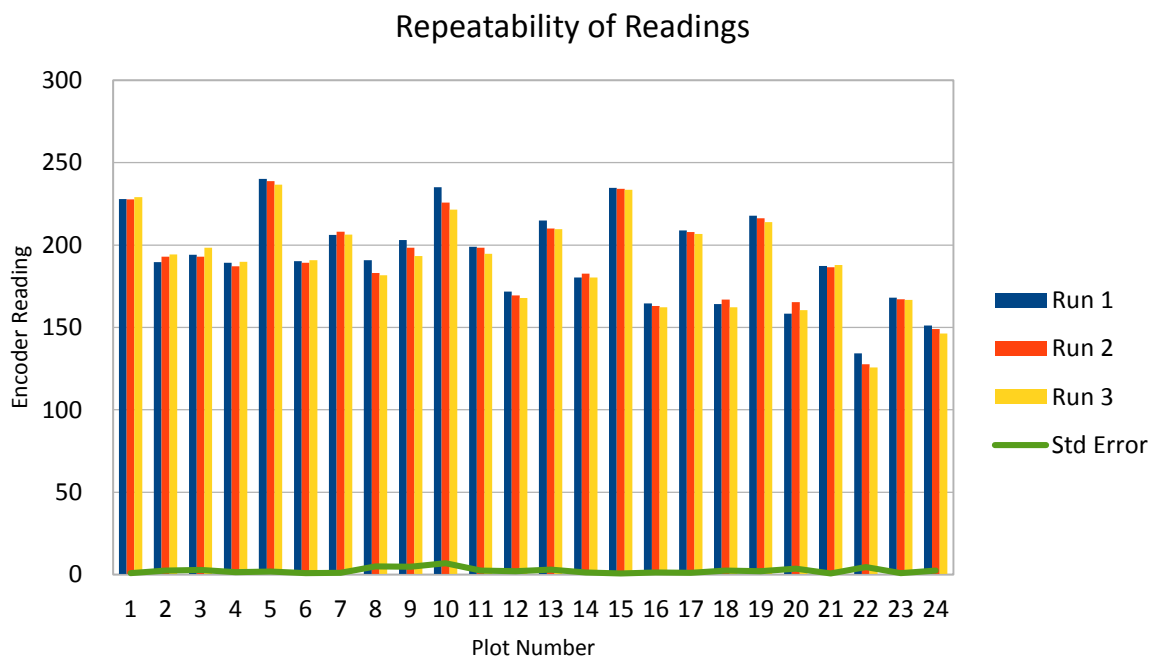


Figure 4: Encoder readings for plant height (wheat) for 3 plots moving in the same direction.

Data upload

The data is uploaded directly from the paddock as such users can easily track plant development throughout the season (Figure 5) and pick up variations between plots (Figure 6).

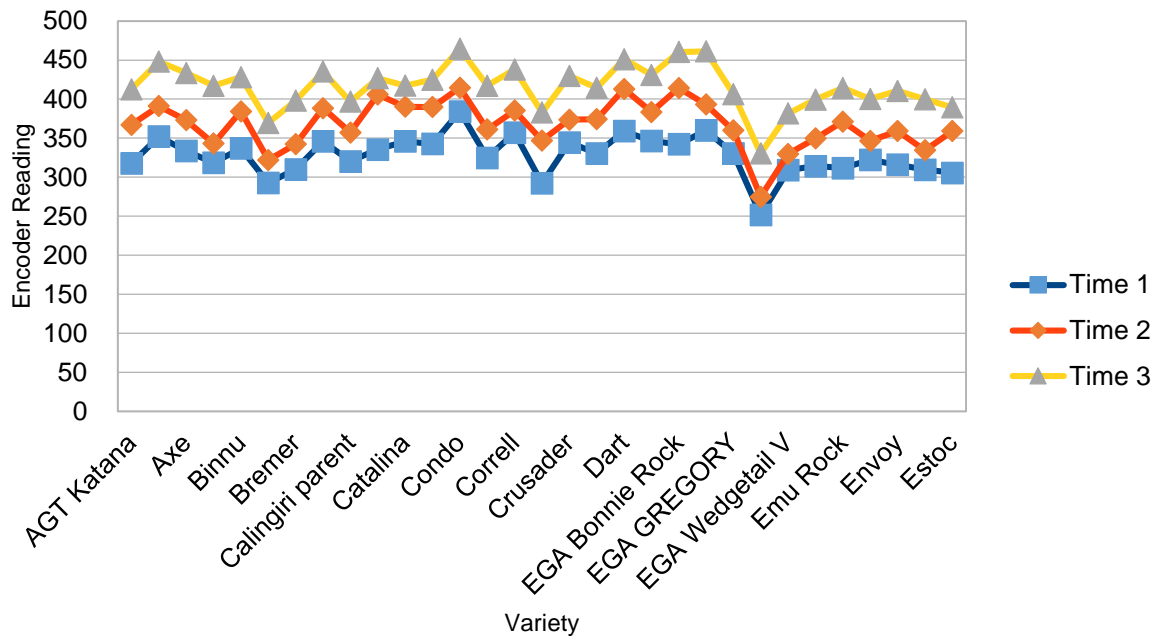


Figure 5: Successive encoder readings for several wheat varieties (3 weeks).

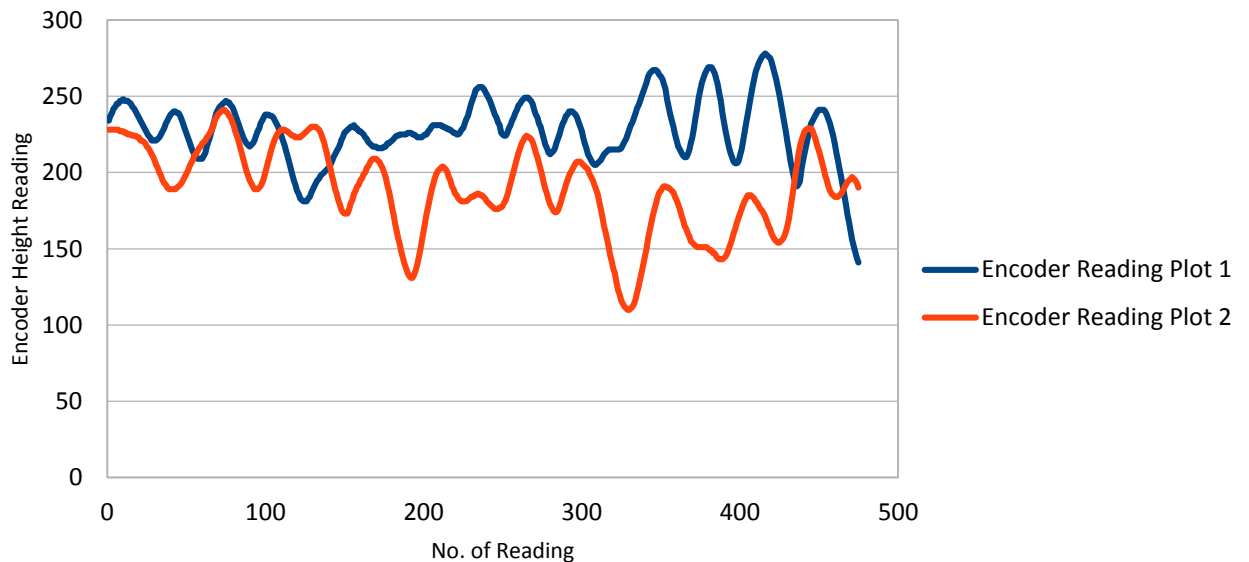


Figure 6: Plot variation / comparison