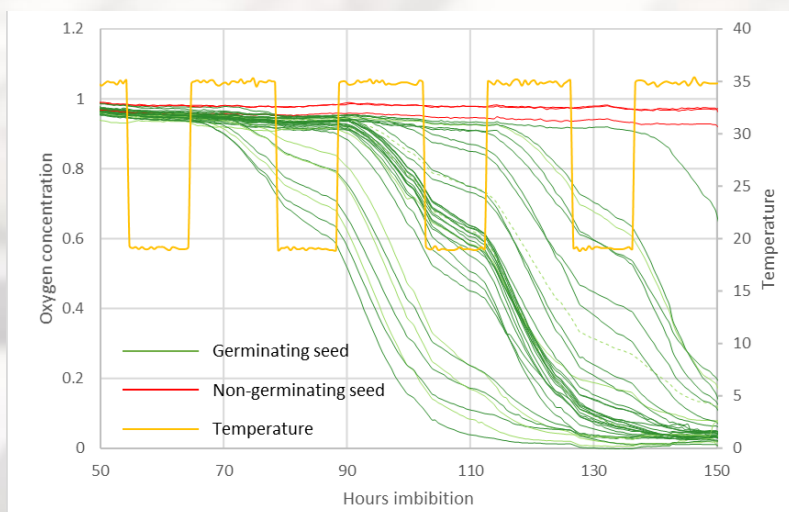


# Seed Respiration Analyser (SRA)

## Effects of Temperature

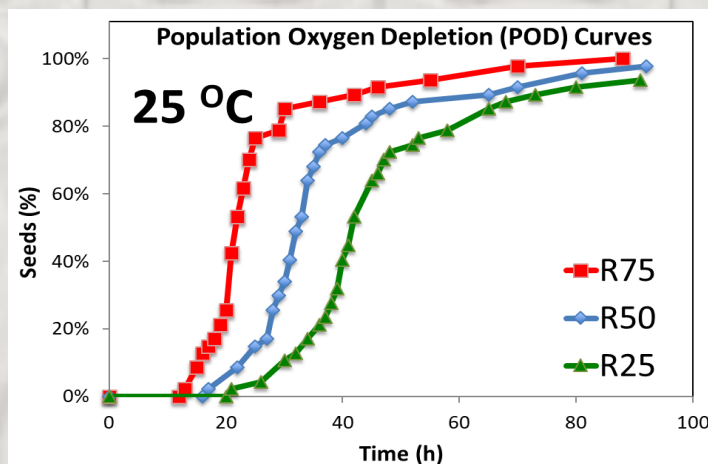
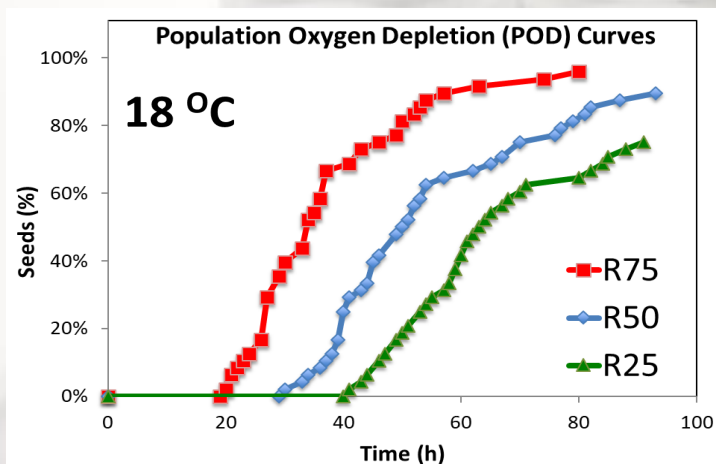
The SRA can support traditional seed testing, providing information unavailable through traditional means. The SRA has four discrete temperature zones, making it possible to easily compare germination and seed respiration responses to multiple temperature regimes. The SRA can also assist in predicting field germination at different temperatures.



*'SRA can assist in evaluation and quantification of effects of temperature on seed performance'*

### Example 1. Response of oxygen use during germination in a Day-Night temperature cycle

Example 1 shows the seed respiration response in a day-night temperature cycle. Accelerated respiration is closely linked to germination. Each line represents the respiration curve of one individual seed. The chart shows that most seeds start germinating in the first half of the (higher temperature) day during the day-night cycle. With SRA it is quite easy to visualise and quantify germination response to a day-night temperature cycle and simulate a temperature cycle in field conditions.



### Example 2. Population Oxygen Depletion Analysis of oxygen use of germinating seeds at 18 (left side) and 25 °C (right side)

Example 2 shows the more advanced Population Oxygen Depletion analysis (Bello and Bradford, Seed Science Research (2016) 26, 199–221), comparing oxygen use of seed batches germinated at two different temperatures. The shorter time for the R curves to start for seeds at a higher temperature suggests a faster initiation of the germination process at higher temperature (about twice as fast). The more steep curves at higher temperature indicate a higher homogeneity and the smaller time difference between R75 and R25 curves at 25 °C as compared to 18 °C suggests higher metabolic activity at higher temperature. The MS Excel-based POD Analysis software is freely available and 100% compatible with SRA.