

Seed Respiration Analyser (SRA)

Fungicide treatment

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 assessing germination and respiration response to different seed treatments, such as application of fungicide (containing coatings).

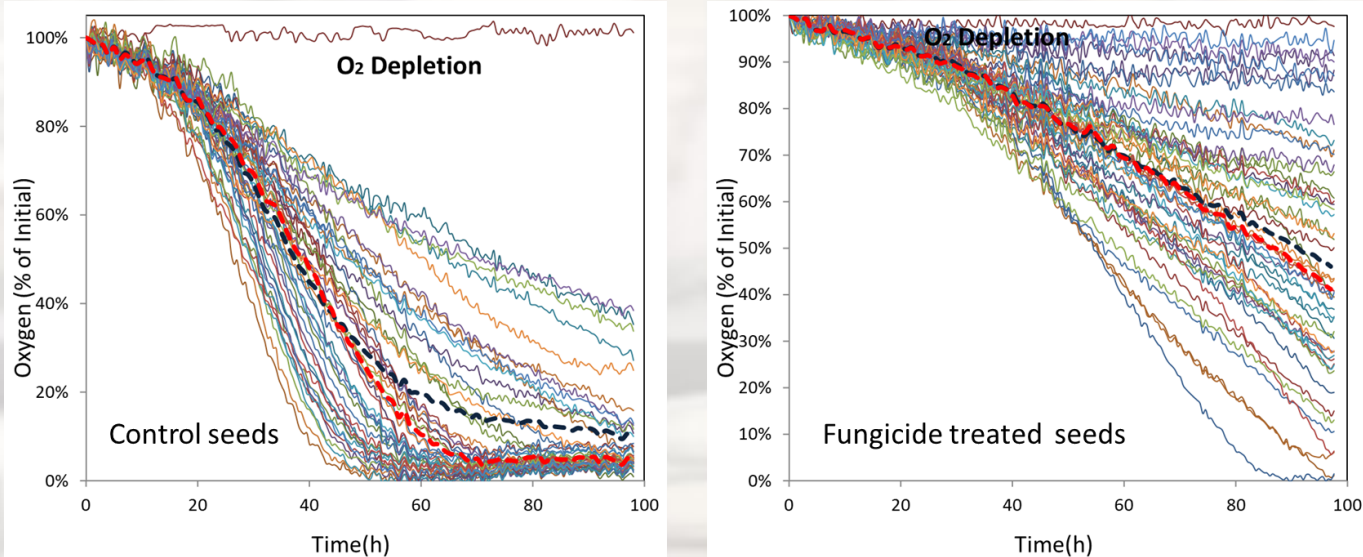


Figure 1. Respiration response of control (left) and fungicide treated wheat seeds (right). Each line represents a single seed. Dashed lines represent average (blue) and median (red).

The example above shows the seed respiration response of control and fungicide treated wheat seeds. Control seeds show earlier and more homogenous germination and respiration. SRA can assist in comparing different seed treatment methods, e.g. different fungicides and differences between dosing. Respiration plots give quick insight in exact differences between treatments.

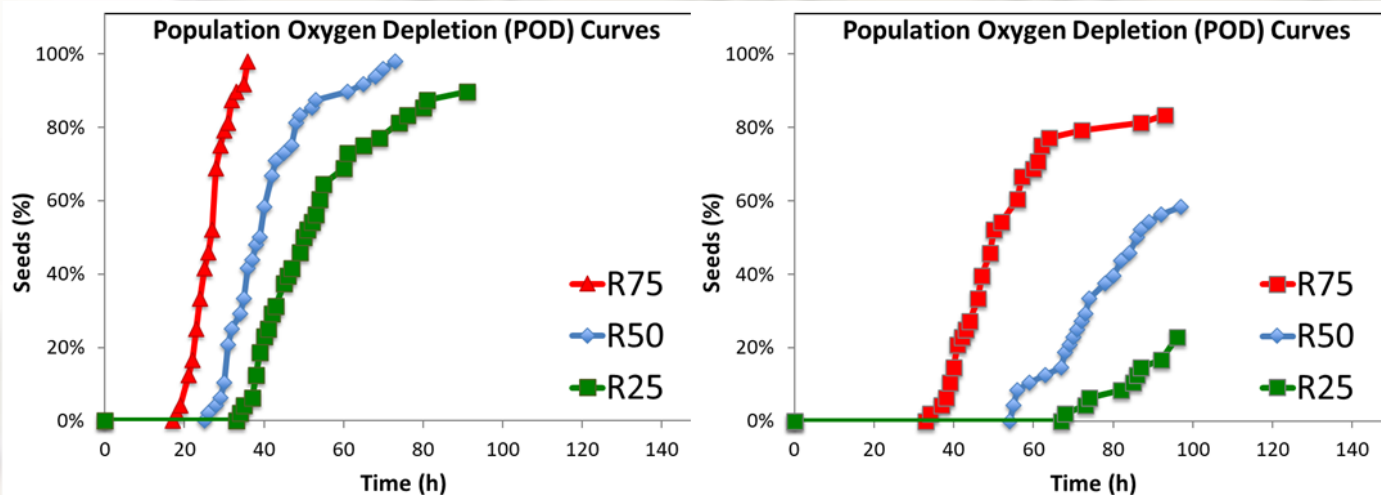


Figure 2. Population Oxygen Depletion Analysis of Respiration Response of control (left side) and fungicide treated (left side) seeds.

The figure above shows the more advanced Population Oxygen Depletion analysis (Bello and Bradford, Seed Science Research (2016) 26, 199–221), applied to the data from figure 1. Percentage of seeds crossing a threshold (e.g. R75 threshold meaning 75% of initial oxygen remaining) is shown on the vertical axis. Steep vertical straight lines indicate high homogeneity. The smaller time difference between R75 and R25 curves for control seeds as compared to fungicide treated seeds suggests higher metabolic activity for the control seeds. The shorter time for the R curves to start for control seeds suggests a faster initiation of the germination process in primed seeds.