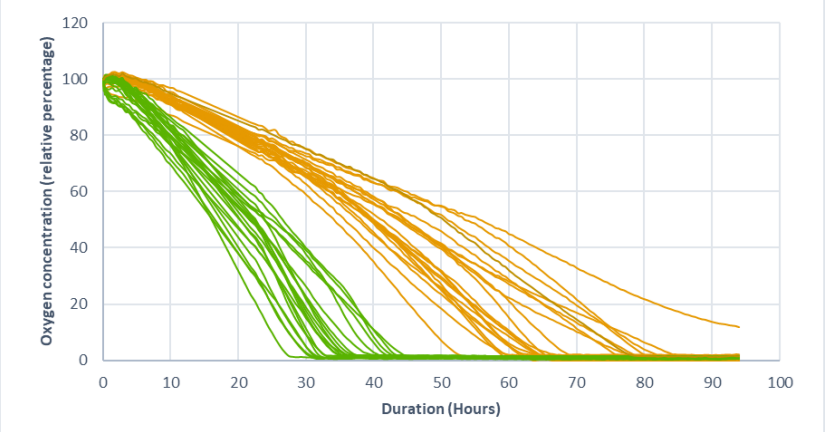
Seed Respiration Analyser (SRA)

Seed Priming

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 priming methods.



'SRA can assist in evaluation and quantification of effects of priming methods on seed performance'

Figure 1. Respiration response of primed (green) and controle seed (orange).

The example above shows the seed respiration response of primed germinating pepper seeds. Green lines represent primed seeds, orange lines represent untreated seeds. Primed seeds show earlier and more homogenous germination and respiration. SRA can assist in comparing different priming methods. Respiration plots give quick insight in germination time and homogeneity.

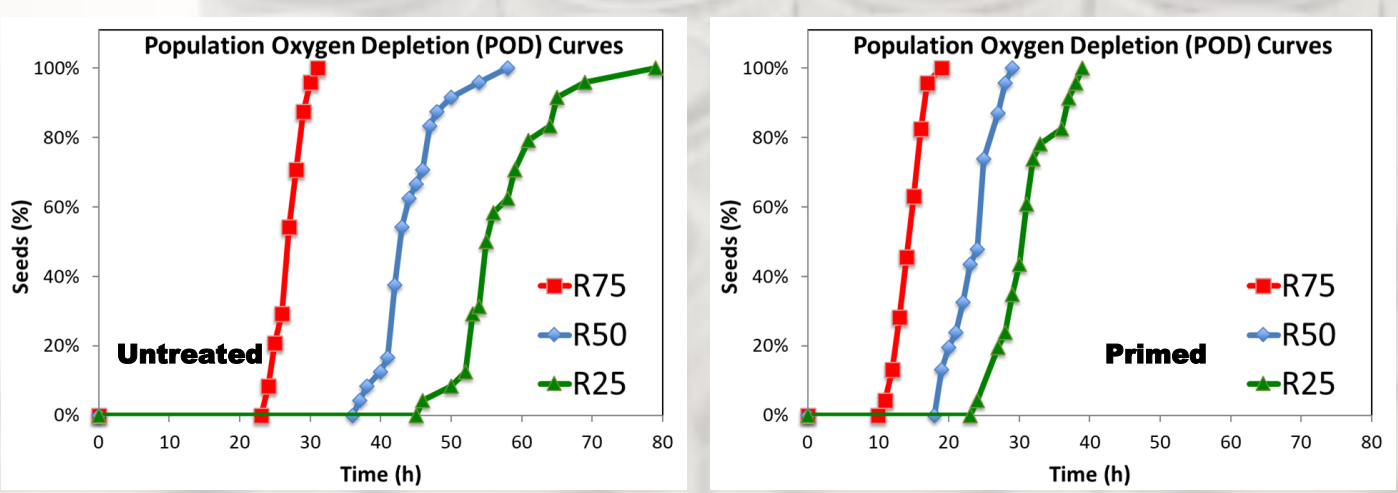


Figure 2. Population Oxygen Depletion Analysis of Respiration Response of primed (right side) and control (left side) seeds.

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 for primed and control seeds. 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 primed seeds as compared to control seeds suggests higher metabolic activity for the primed seeds. The shorter time for the R curves to start for primed seeds suggests a faster initiation of the germination process in primed seeds.

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