

**Shital Dixit, Ph.D.**

**Thursday, September 26, 11:00-11:30 a.m.**

### **Deciphering digital traits towards predicting crop yield**

Accurate phenotyping is difficult to measure due to high subjectivity. This is often the bottleneck for translation of genetic research findings into breeding practices where selection of traits like yield is based on phenotypes of the crops. To solve this problem we have developed at PhenoFab®, novel tools and methods to phenotype plants objectively, accurately and non-destructively using high throughput (HTP) platforms, under various growing conditions. Relevant traits like yield, biomass, root growth, water use efficiency, nitrogen use efficiency etc. are captured for different crops using proprietary image analysis algorithms and analyzed using statistical growth models. These phenotypic traits can then be linked with the underlying genes using forward genetic methods and tools. Furthermore, these early digital traits can be correlated with traits that appear much later in a crop's life that could be related to yield directly or indirectly.

Besides, early and accurate selection of traits in crops PhenoFab has successfully dissected the role of seed treatment(s) and its complex combinatorial effects on the performance of the genotype under various environmental conditions. This is a very unique application which is now available at PhenoFab for the companies involved in seed treatments.

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