

Are fungal communities different among rhododendrons from different nurseries, container vs. field soils, or three cultivars?

Nik Grunwald and Zach Foster



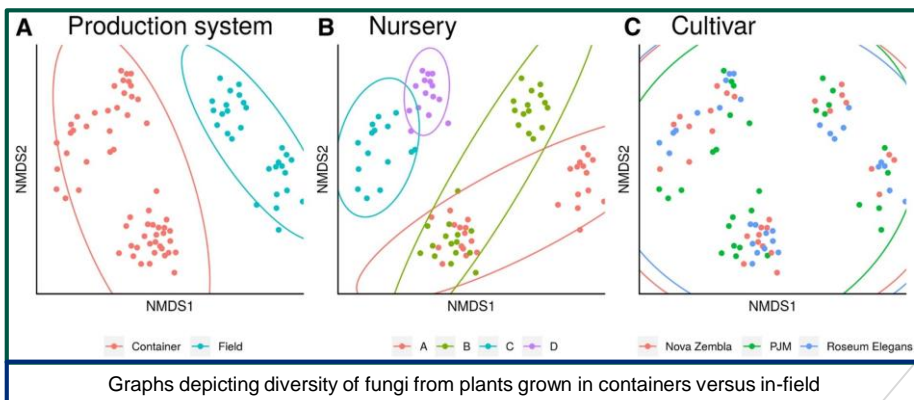
Zach Foster defending his thesis!

Our recent graduate student, Zach Foster, tackled this question.

The microbes associated with agricultural crops influence processes such as nutrient absorption, drought stress, and susceptibility to pathogens. We were interested in studying the fungi and oomycetes associated with rhododendron plants in commercial nurseries.

We compared how the fungal and oomycete microbiomes of rhododendrons from Oregon nurseries differed among cultivars, growth conditions (e.g. field-grown vs. container grown plants), and nurseries. Roots were sampled from randomly selected container and field-grown plants of three cultivars of rhododendron at four nurseries. We used a sequencing technique able to identify presence of all fungal/oomycete species in a sample.

After sequencing barcodes for fungal and oomycete community members, we compared diversity and community composition among nurseries, growth conditions and nurseries. Overall, fungal communities were dominated by saprobes and mutualists. Nurseries that grew plants in containers and in-field had a significantly higher diversity of fungi than those that only grew plants in containers:



Microbiome composition differed significantly among growth conditions and nurseries, but not among cultivars. This suggests that, among these cultivars of rhododendron, environment is important in structuring the root microbiome, but cultivar is not.

Pacific West Area – Horticultural Crops Research Unit

3420 NW Orchard Ave. Corvallis, OR 97330-5098

Voice: 541-738-4021 Fax: 541-738-4025