Doctoral Dissertation Presentation

Different shoot and root responses to low phosphorus availability in Japanese cultivars of maize and soybean

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Venue C301 Lecture Room

Low phosphorus (P) availability in agricultural soils severely impacts crop productivity worldwide. Over-applicating P fertilizers is not a viable solution to overcome P deficiency because such P is a non-renewable resource. Plants have evolved morphological, physiological, and biochemical responses to P deficiency. However, these morphological, physiological, and biochemical responses to P deficiency are species - and genotype - specific. Therefore, assessing the genotypic variability of crop genotypes under low P conditions and developing P-efficient crop genotypes are crucial to keeping the momentum of sustainable agriculture. Therefore, this study evaluated Japanese core collections of maize (86 cultivars) and soybean (94 cultivars) to low P under hydroponic conditions, and ten cultivars of each species were selected for further assessment under soil conditions.

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