

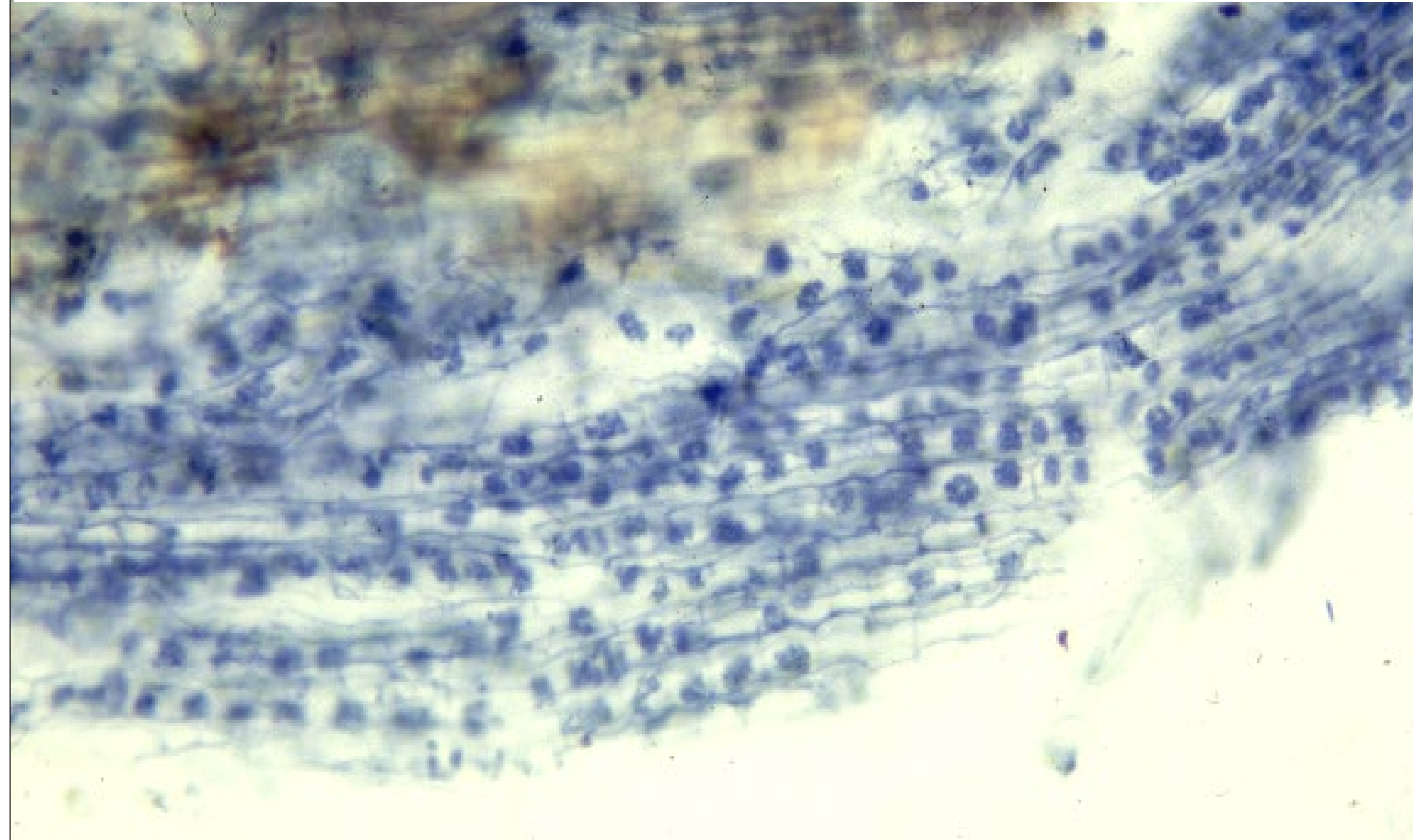
How does N affect mycorrhizal fungi and their association with grapevines?

Tian Tian, Viticulture farm advisor, UCCE Kern

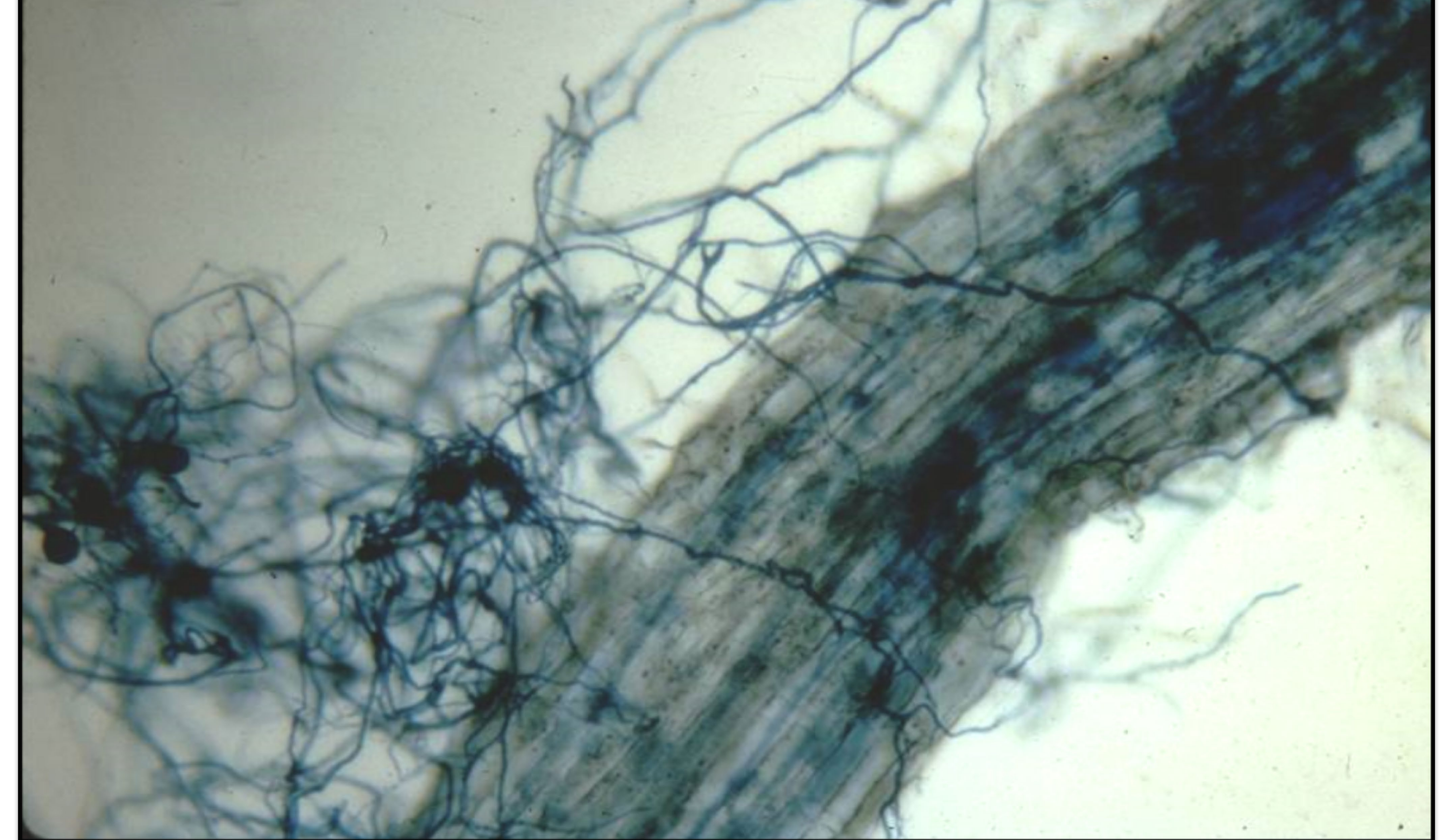


# Arbuscular Mycorrhizal Fungi (AMF)

Internal fungal structure in fine roots



External fungal hyphae

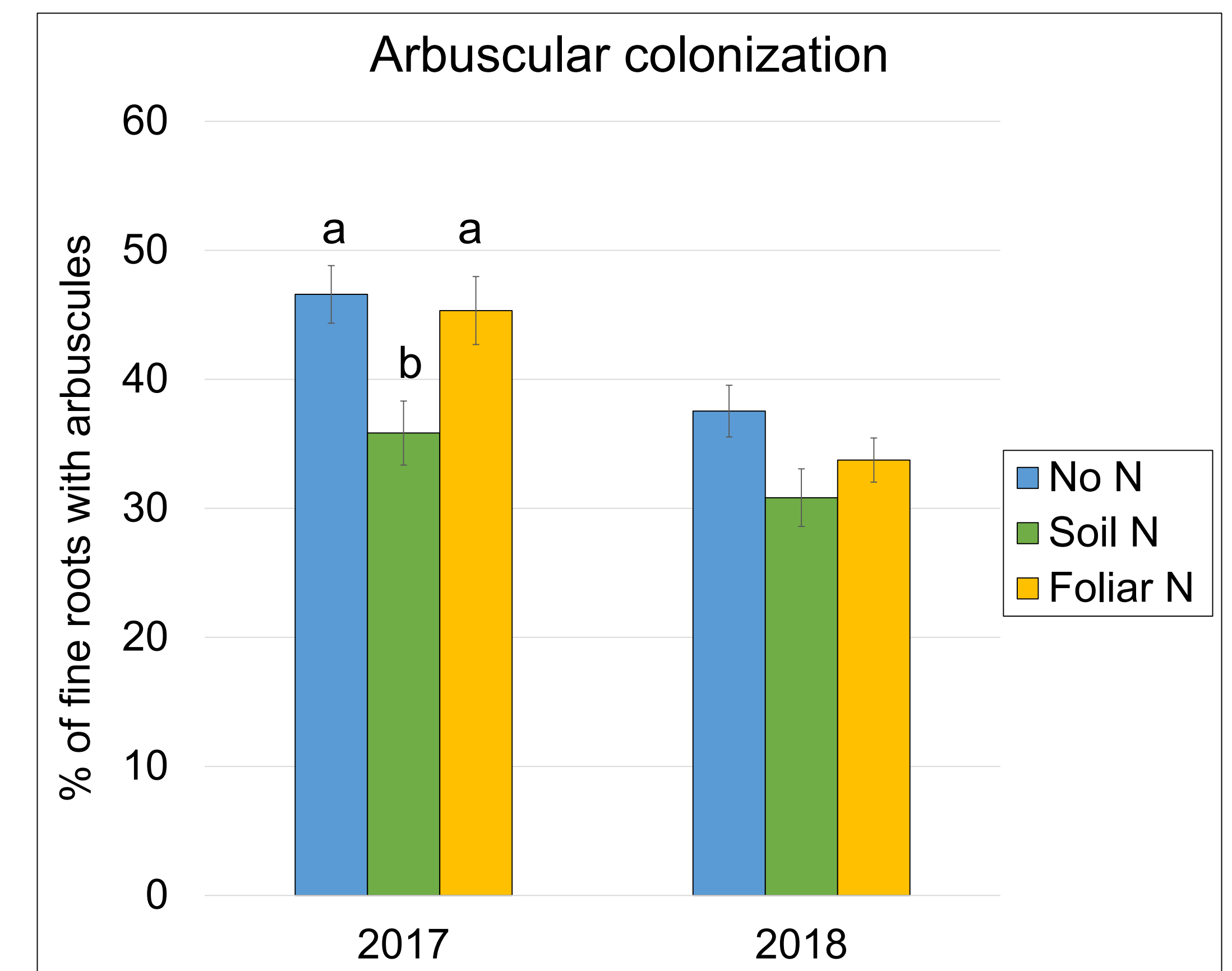
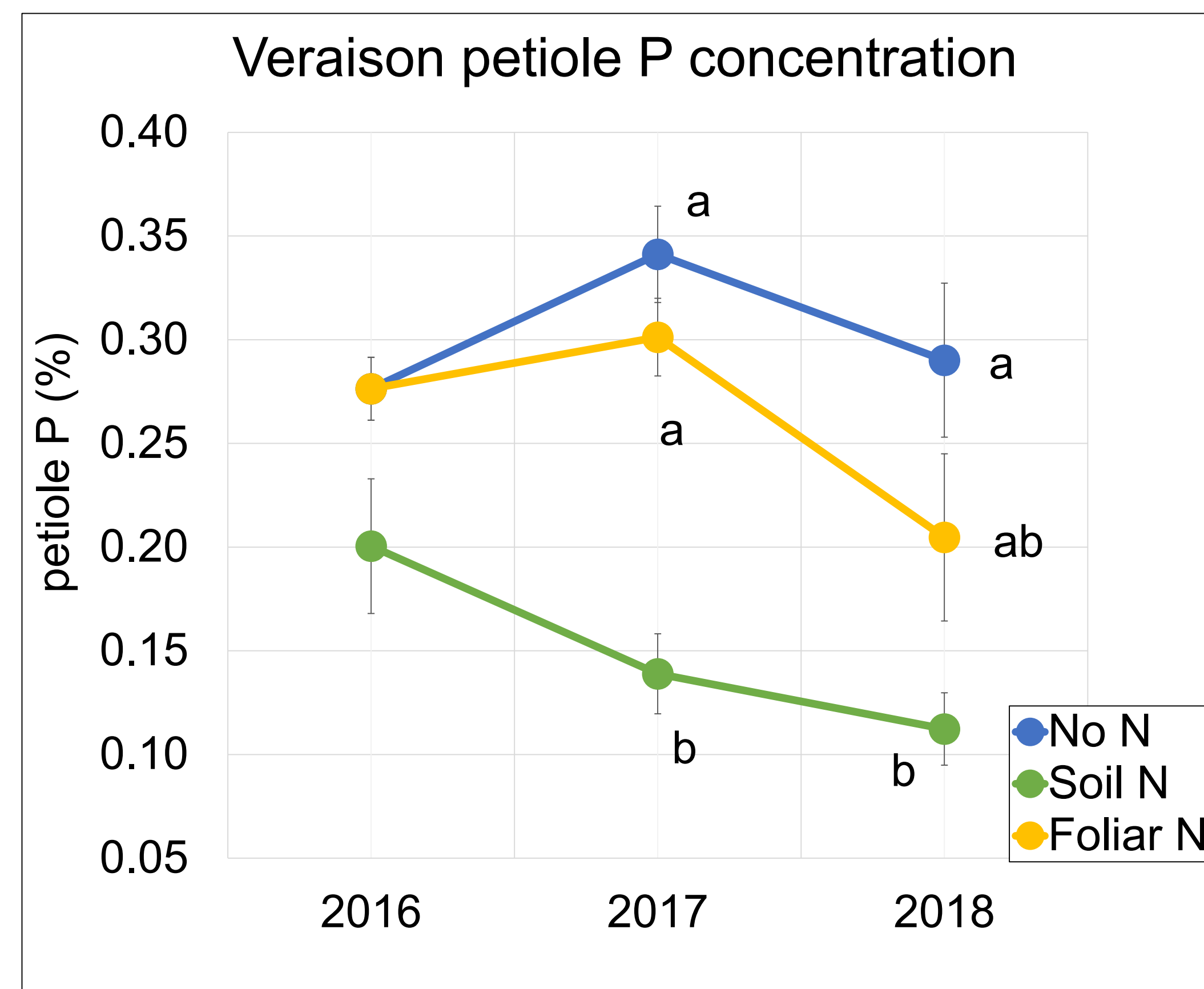
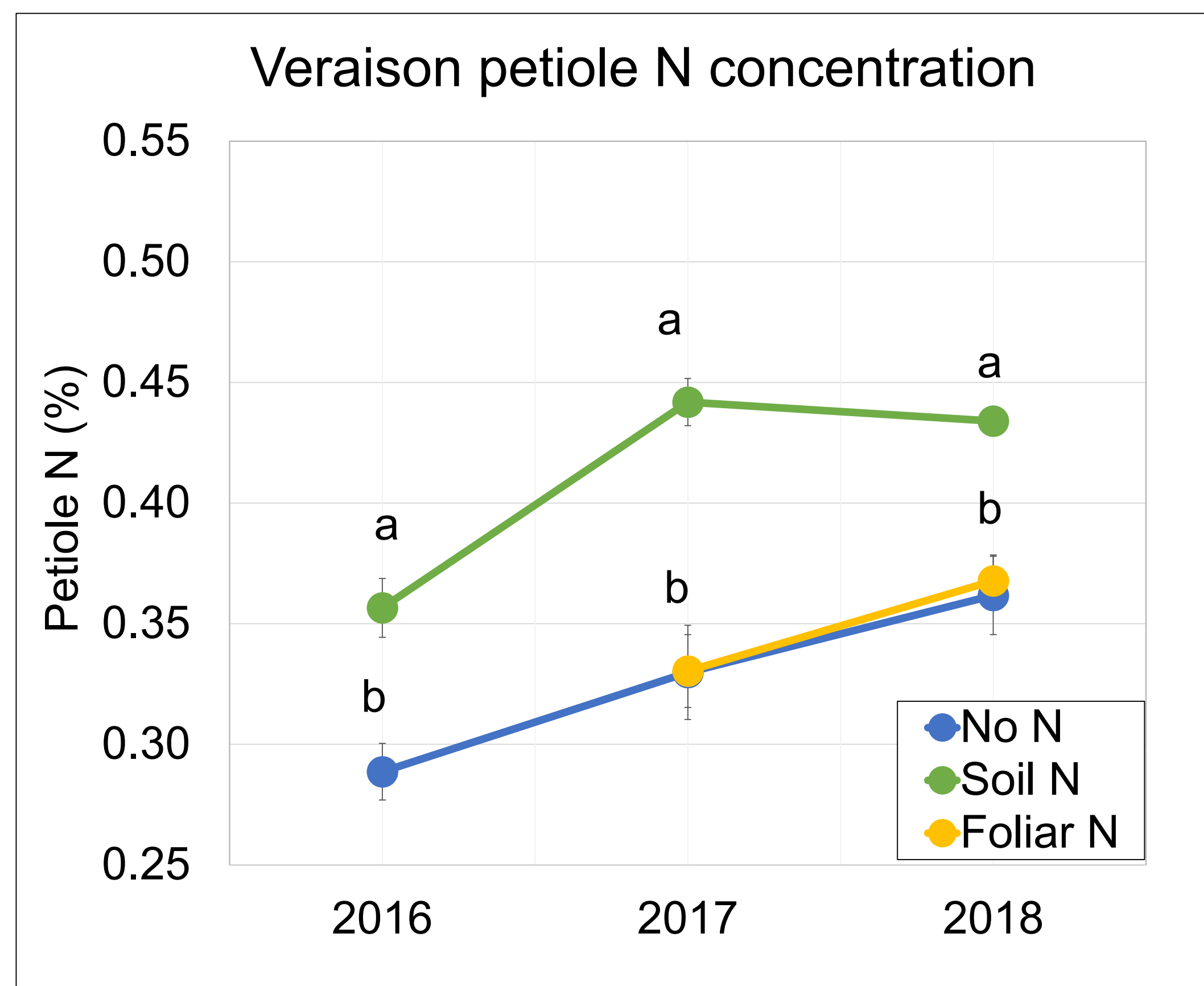
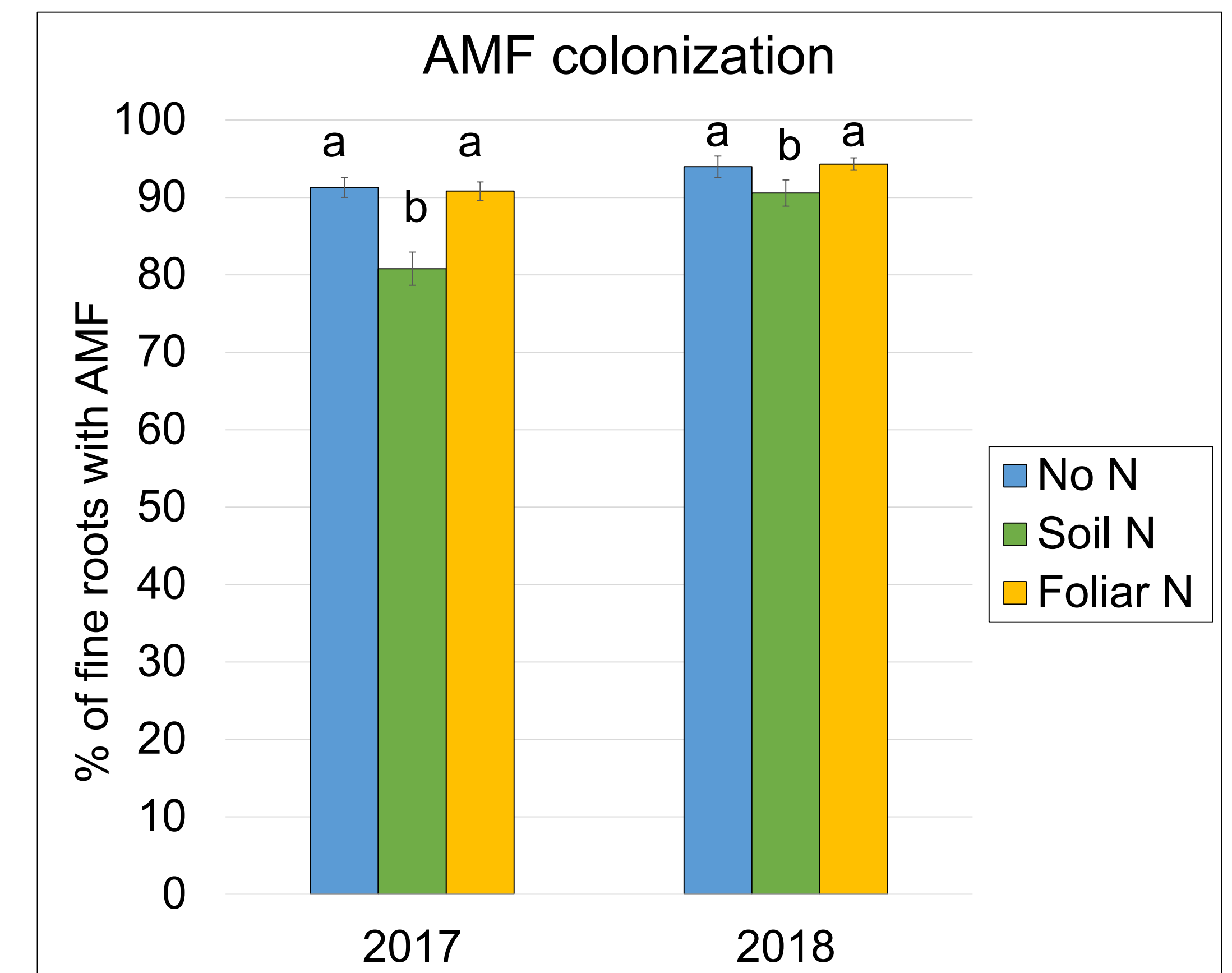
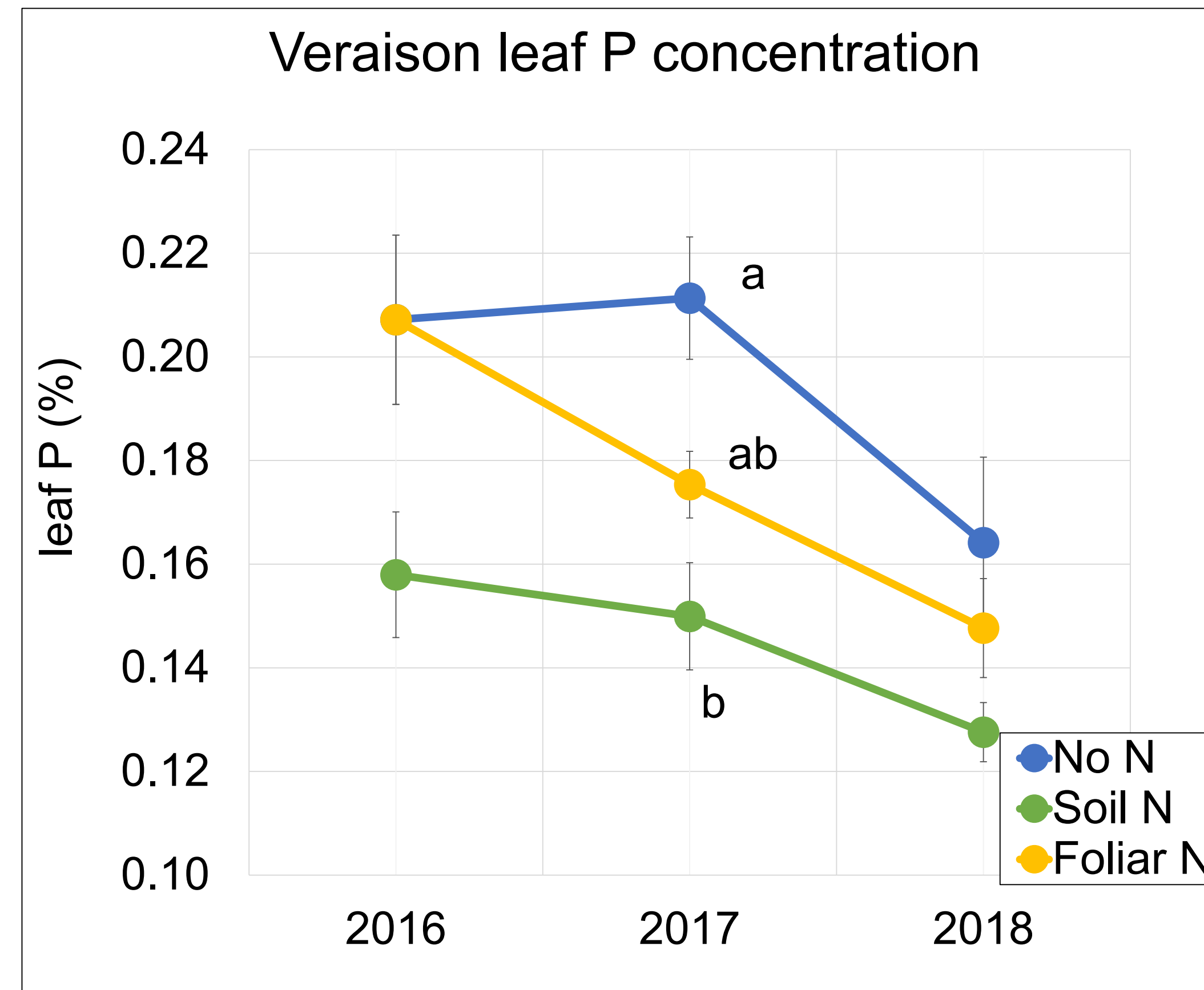
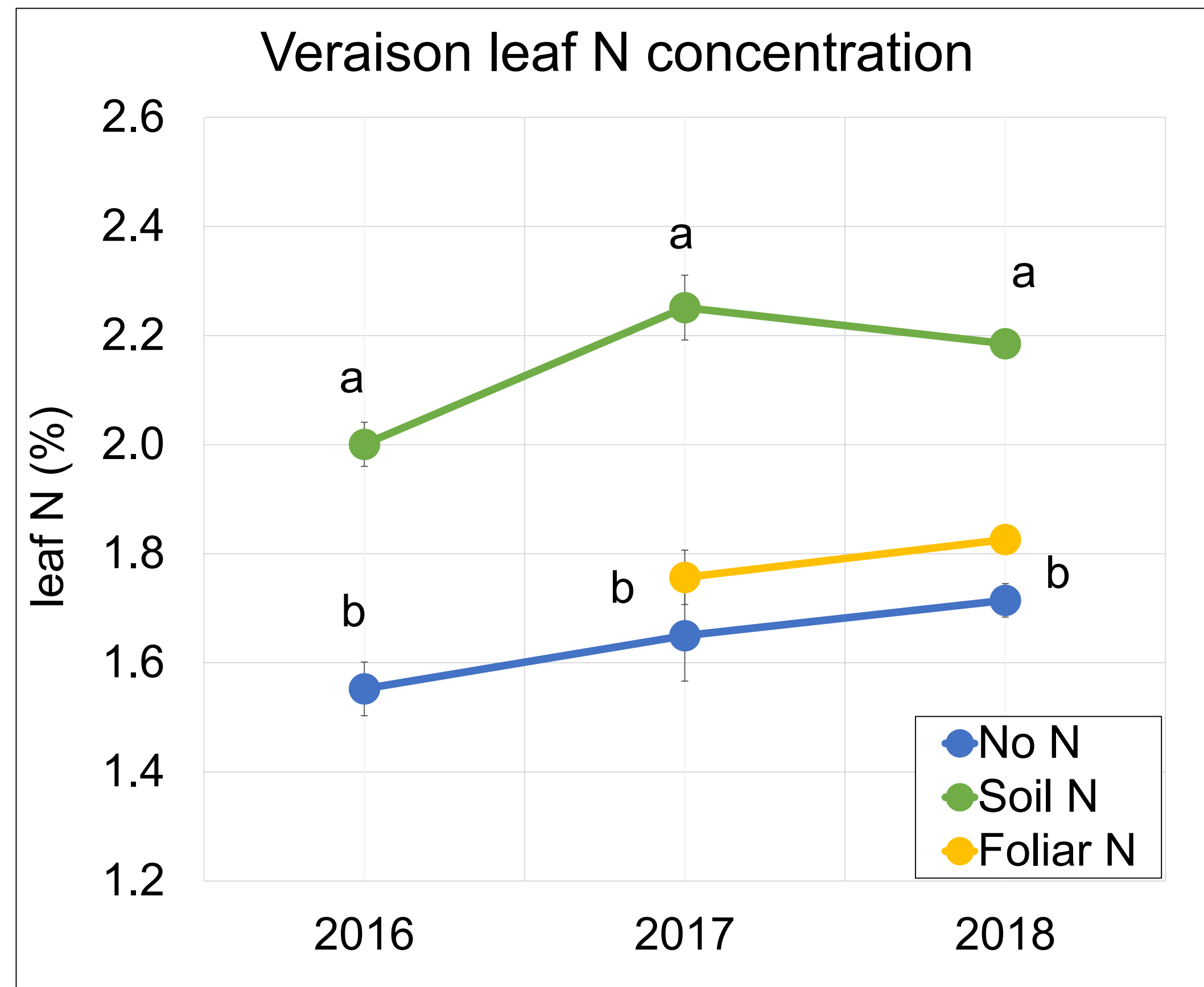


Arbuscule



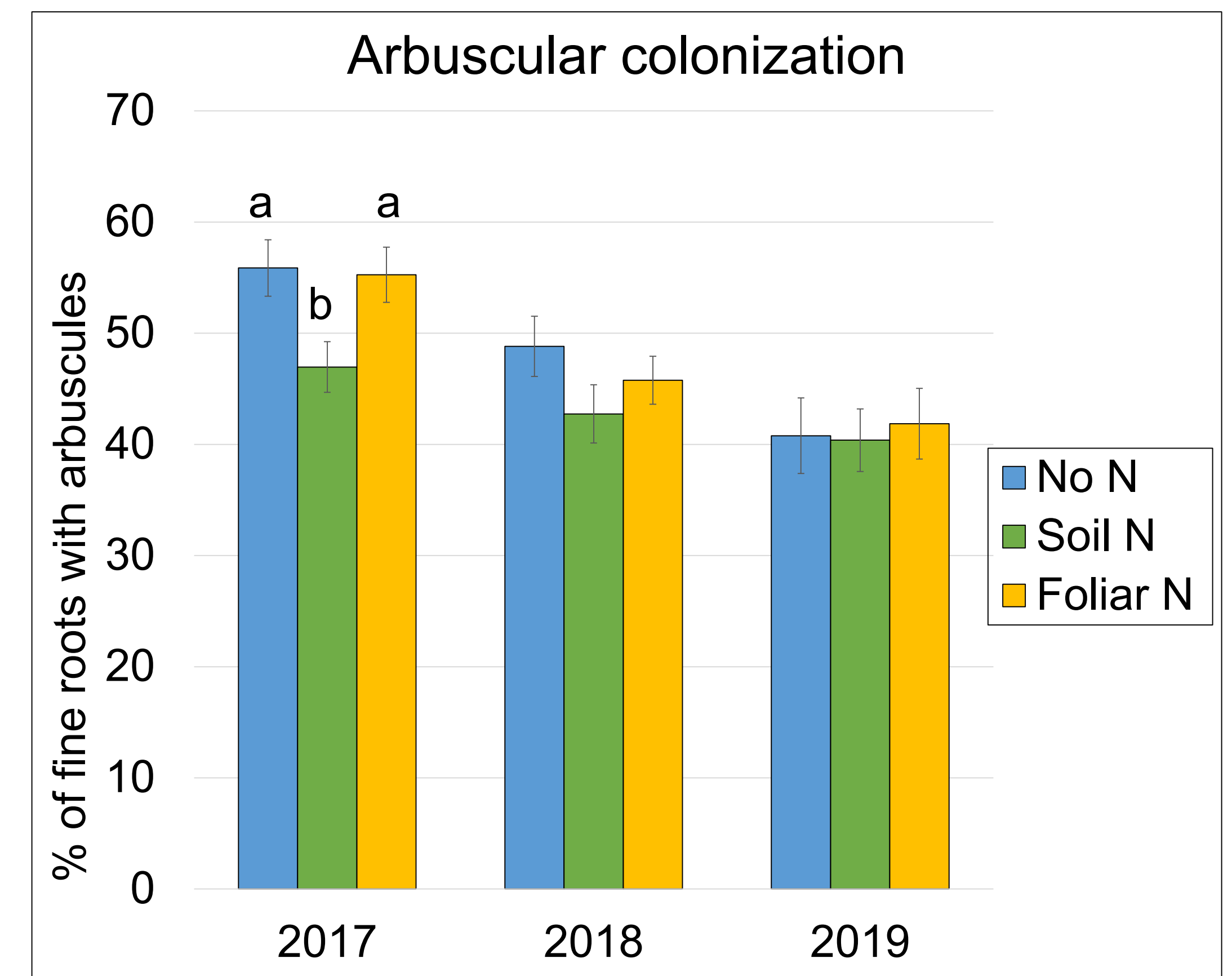
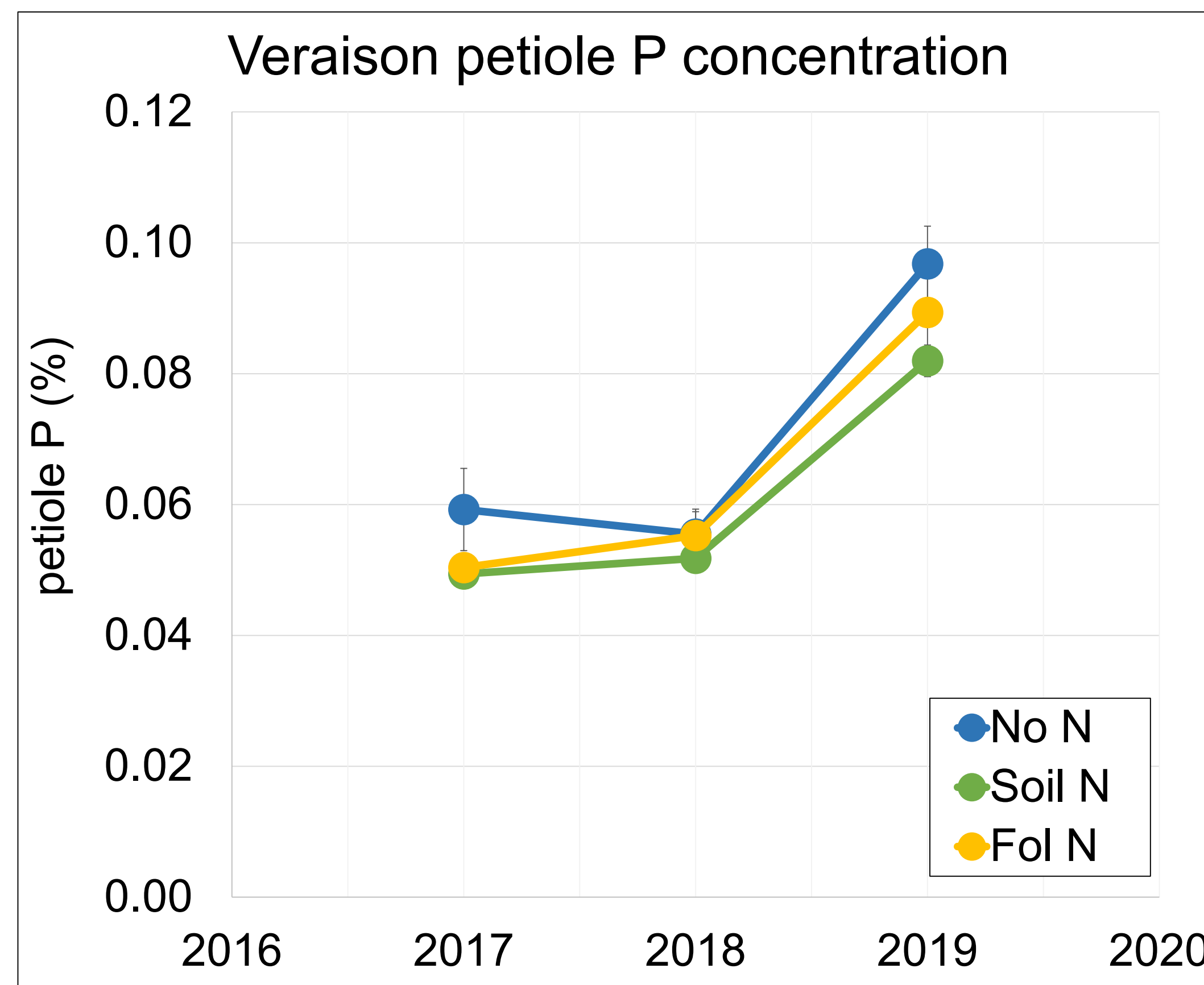
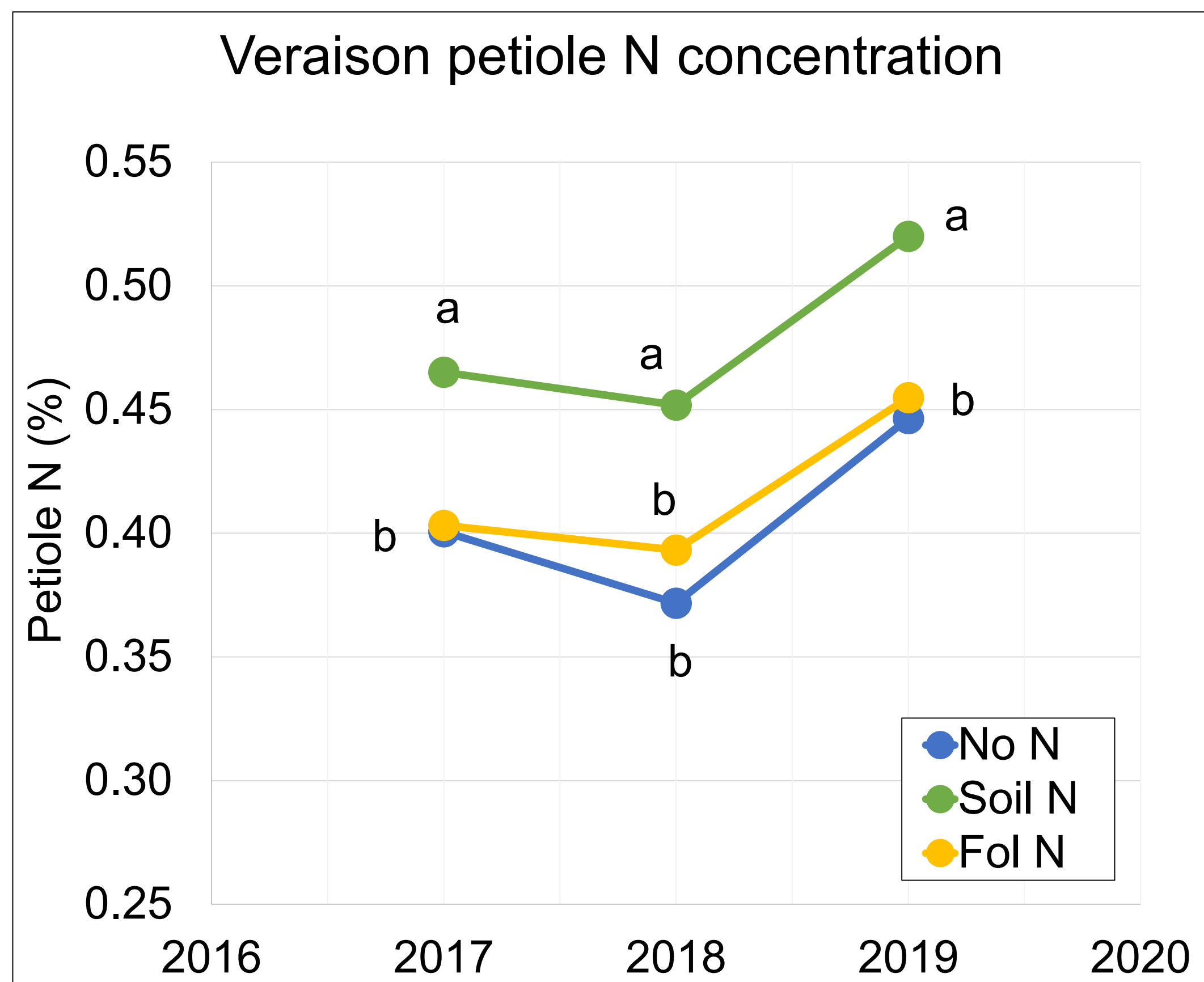
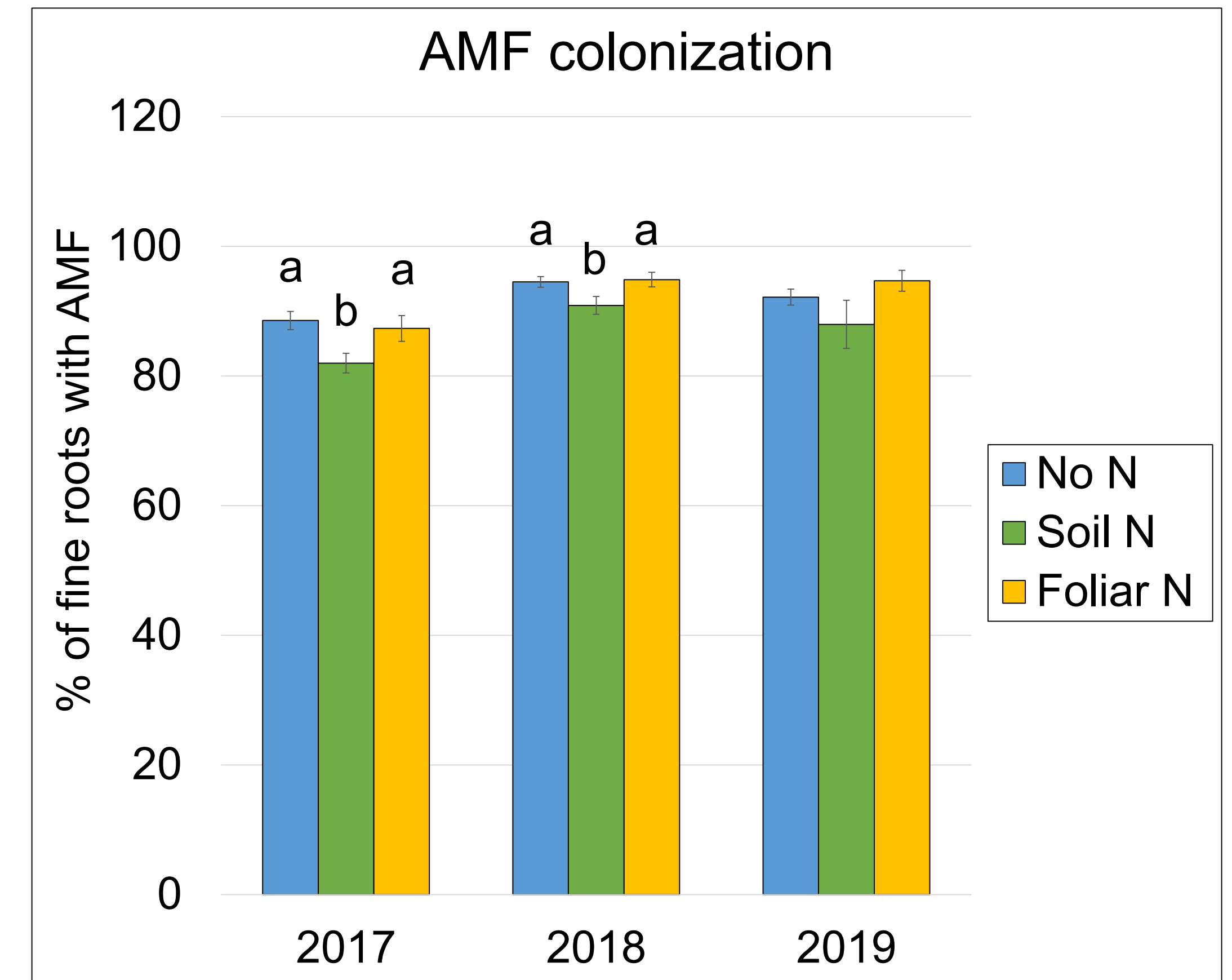
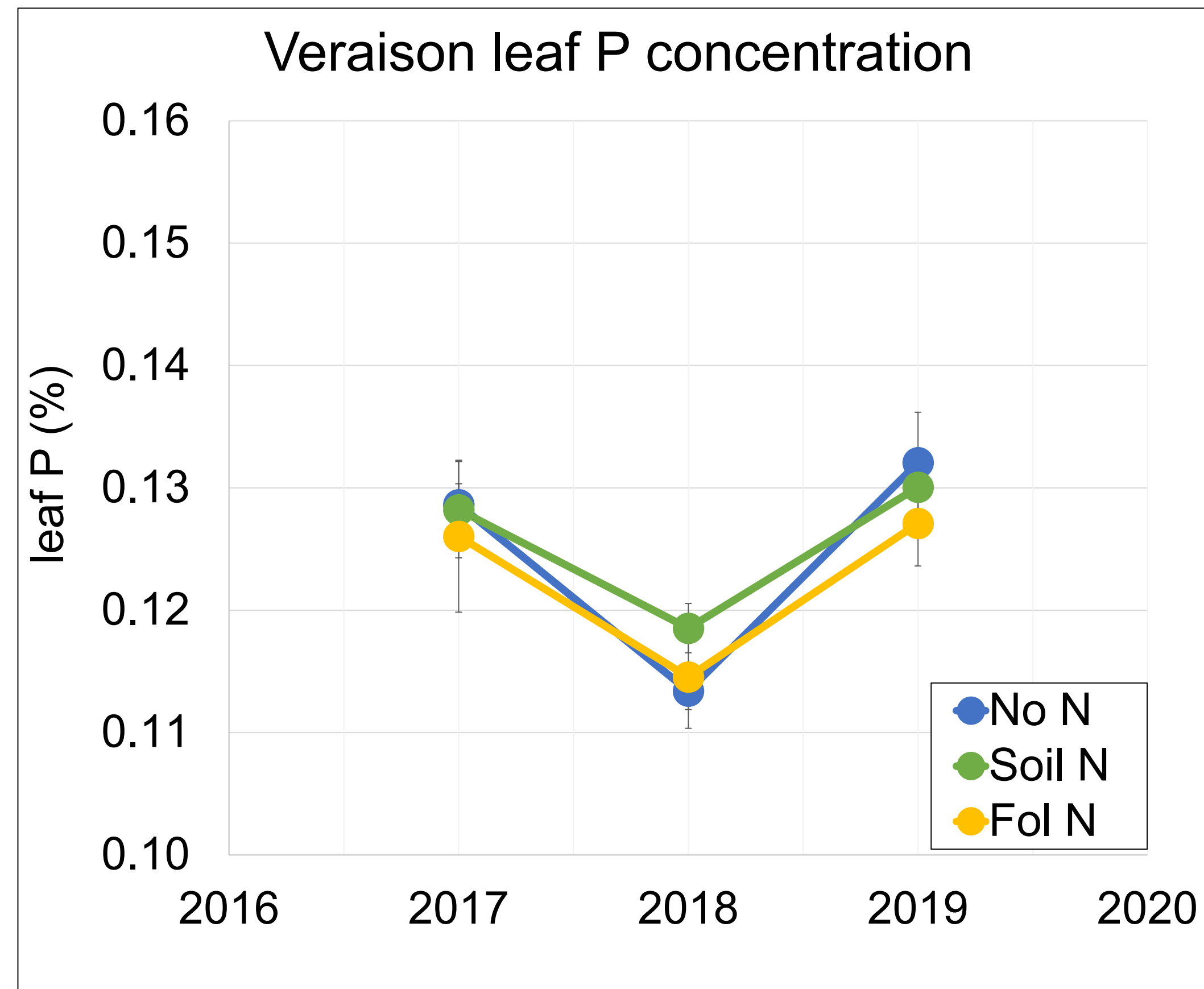
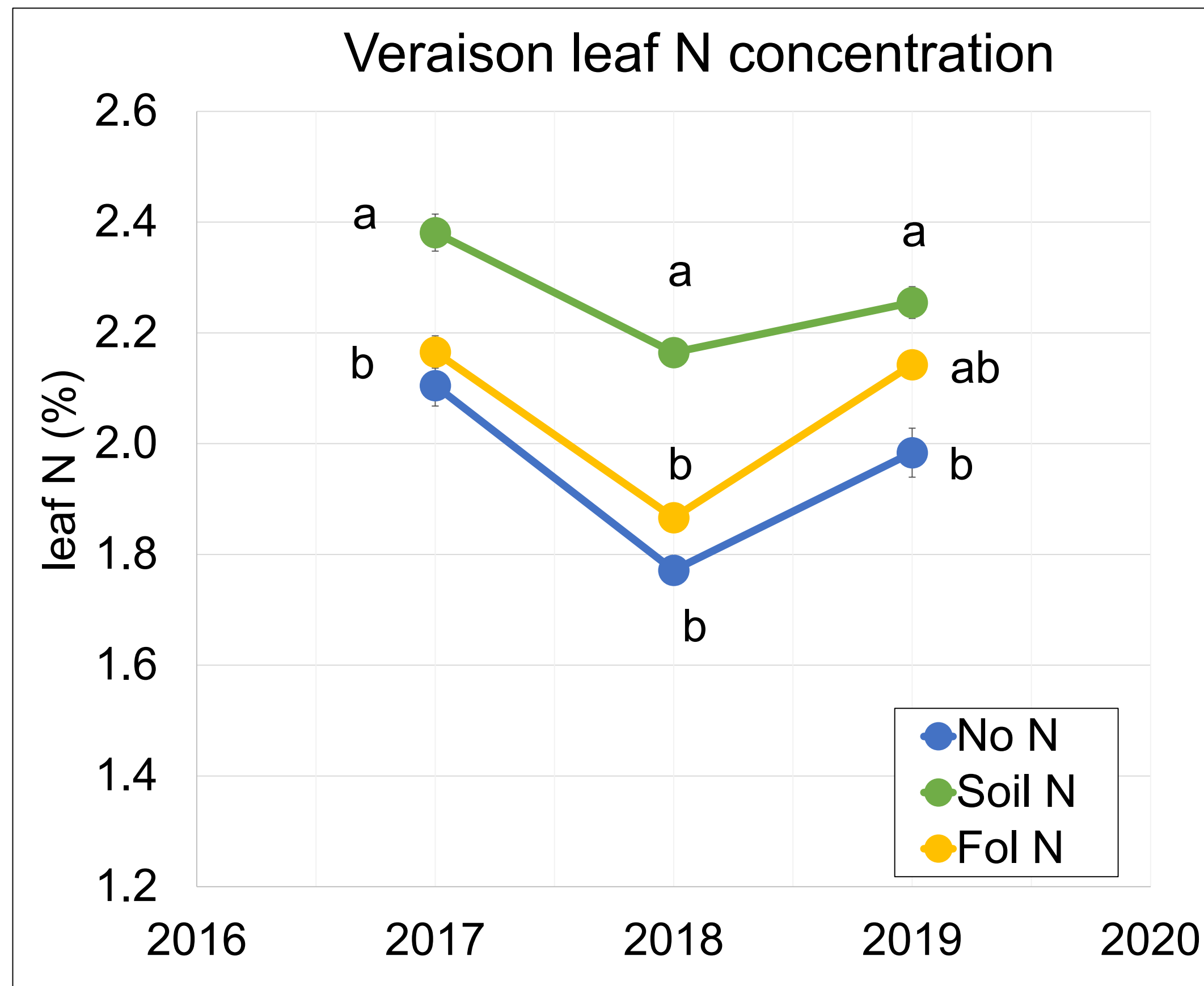


# Soil N increased vine N status but decreased vine P status and mycorrhizal colonization in Chardonnay



Soil N rate 60 lb N/acre 40 lb N/acre

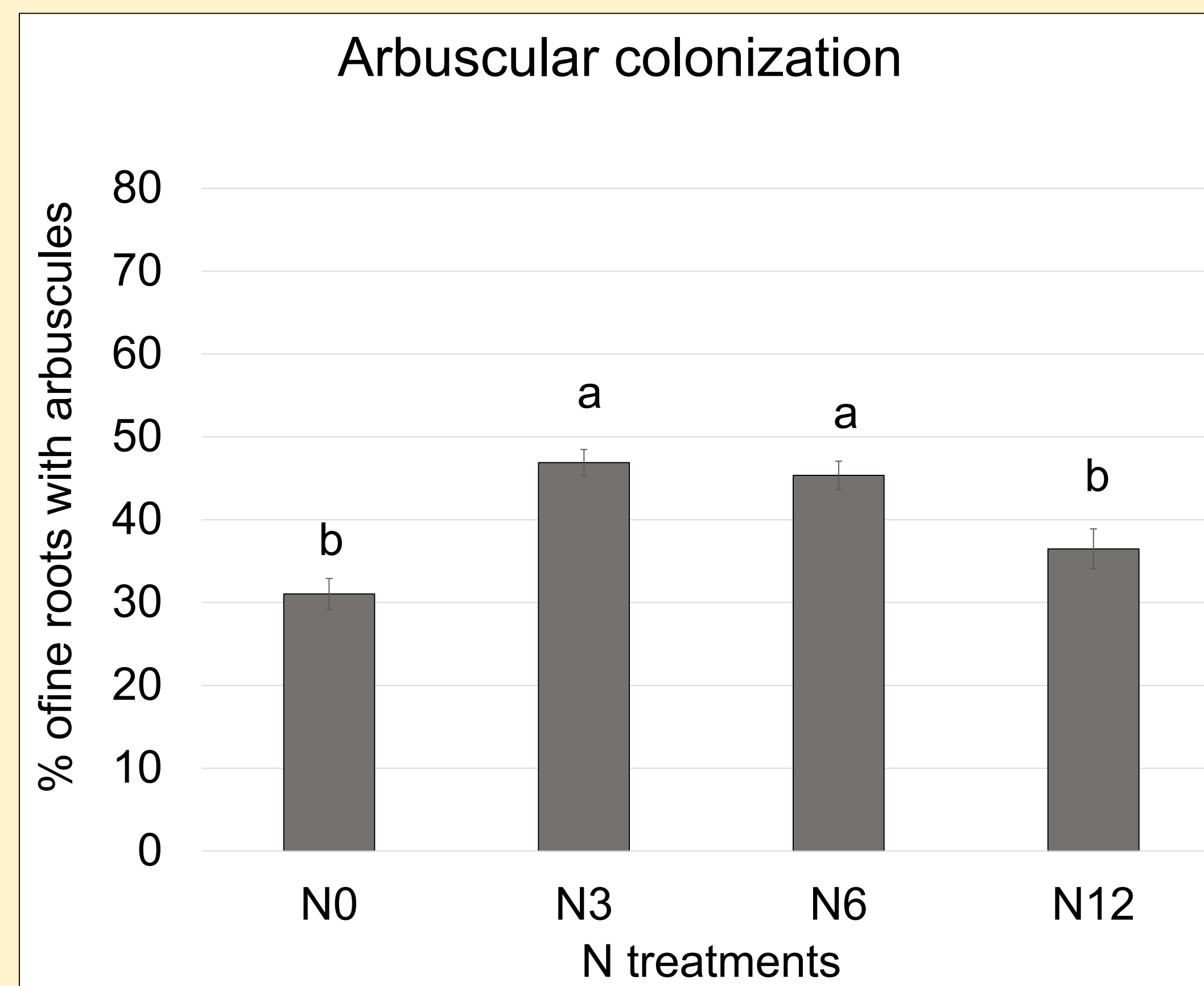
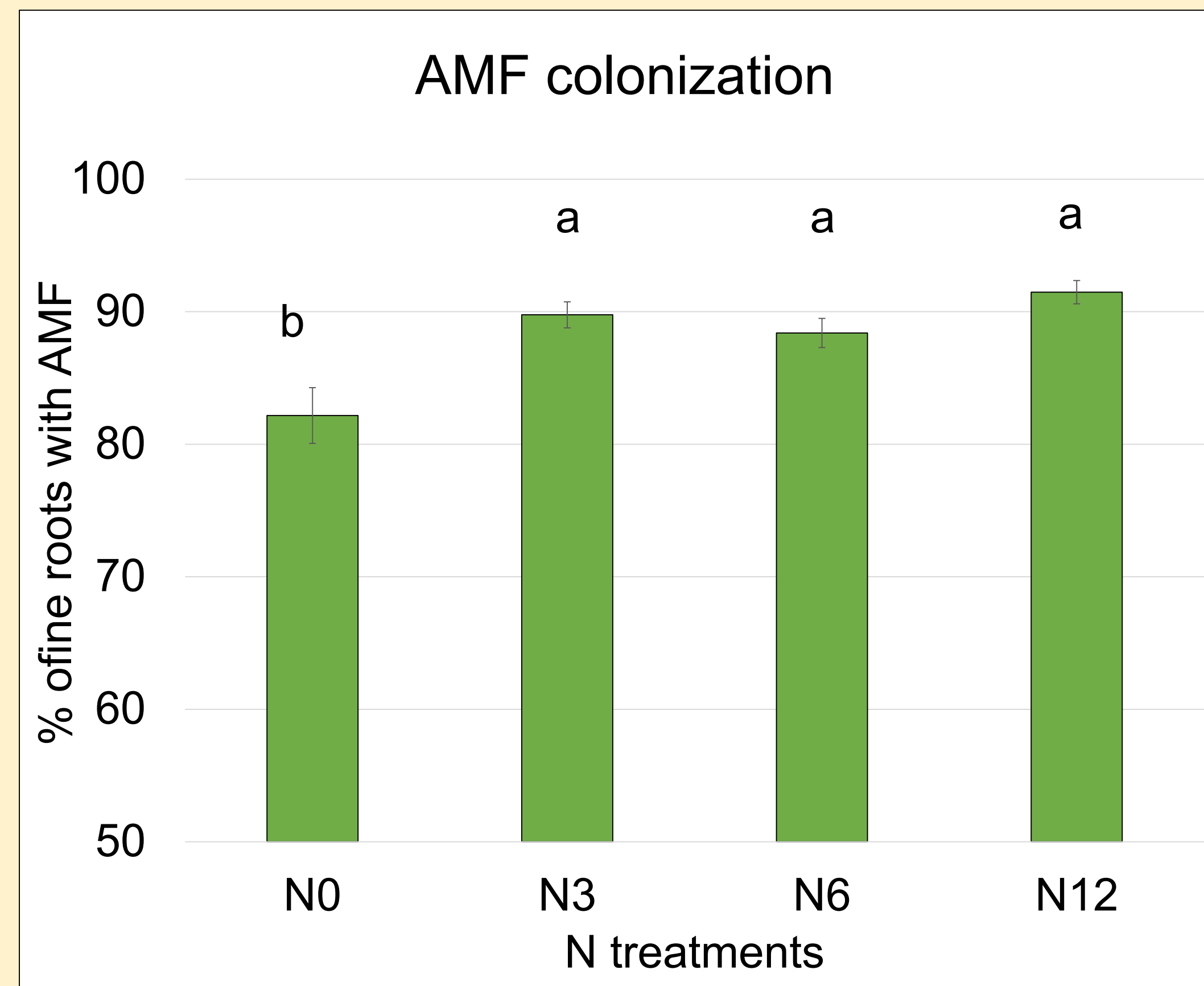
# Soil N increased vine N status, decreased mycorrhizal colonization, but did not affect vine P status in Pinot noir



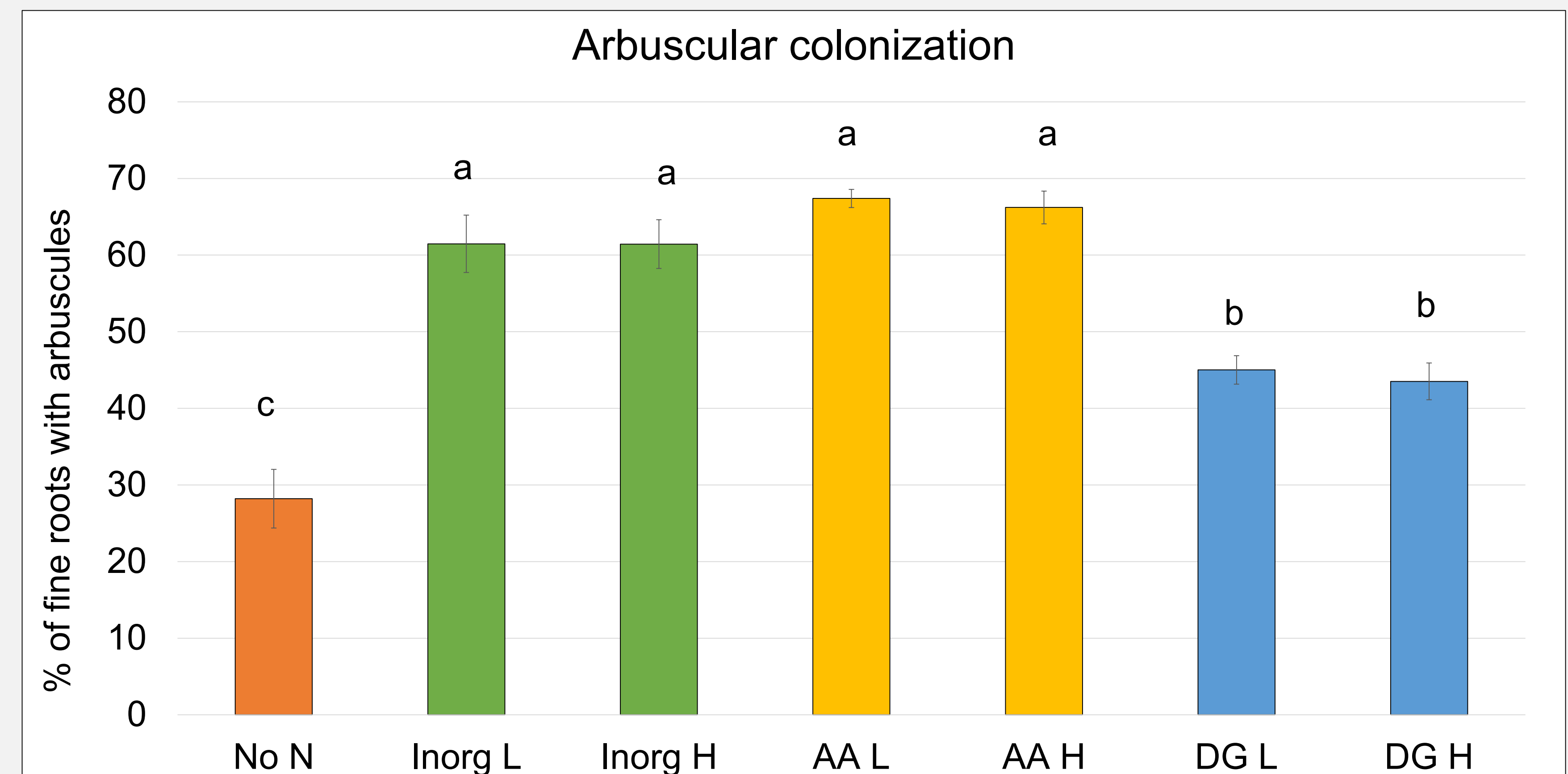
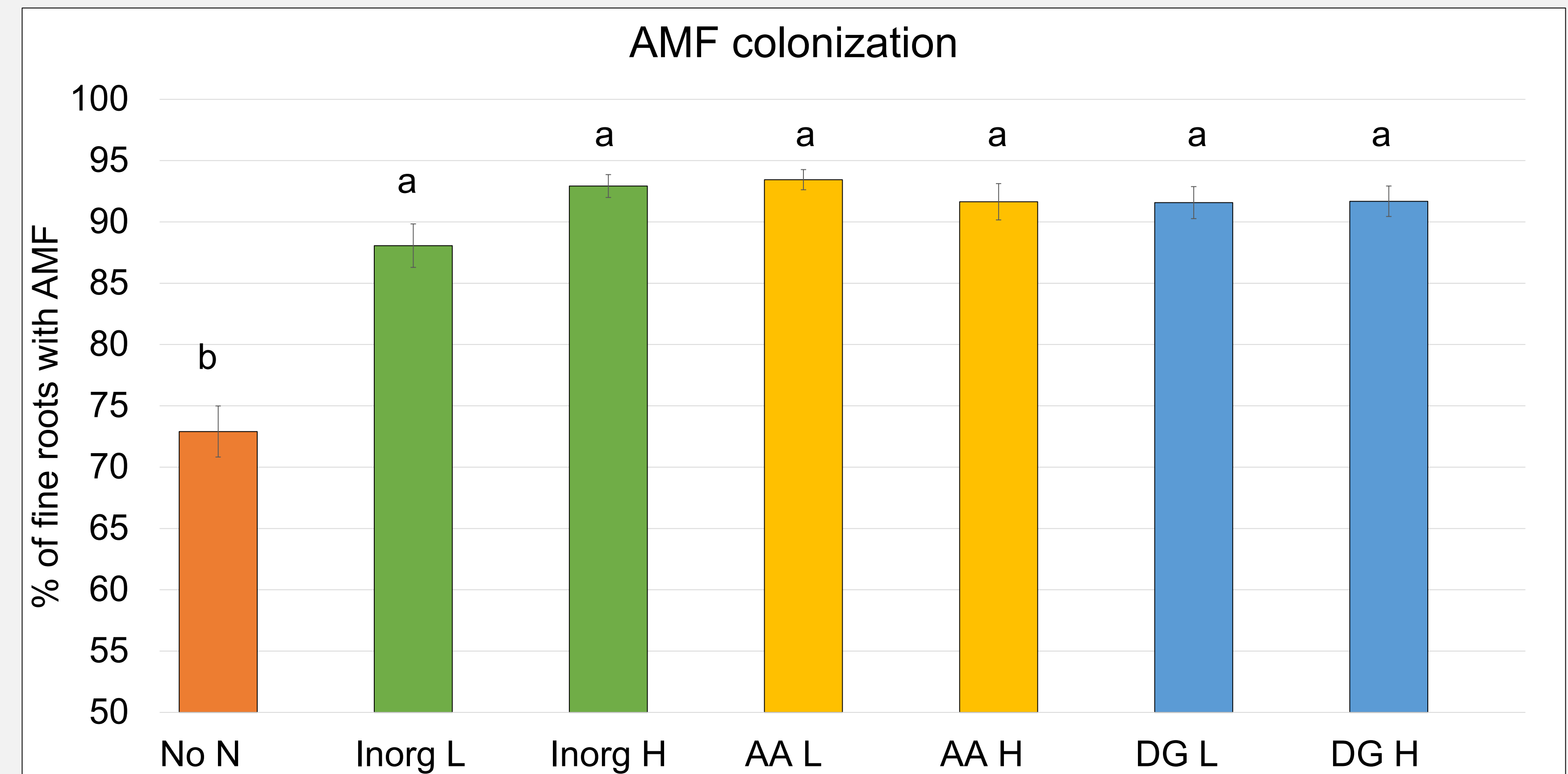
Soil N rate 60 lb N/acre 40 lb N/acre 40 lb N/acre

# Responses of AMF to Nitrogen Fertilization in Greenhouse

**Exp 1:** Ammonium nitrate applied at four different rates (0,3,6, and 12 mM)



**Exp 2:** Three sources of N (Inorganic N, amino acid, and dry grass clippings) applied at low and high rates





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