

EXPLORING THE IMPACT OF DOMESTICATION AND POLYPLOIDIZATION ON PHENOTYPIC PLASTICITY IN COTTON

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Domestication and polyploidization are believed to affect the variety or magnitude of plant phenotypic responses to environmental variation (phenotypic plasticity), with important evolutionary and agronomic consequences. However, the impact of domestication and polyploidization on phenotypic plasticity has been studied separately, but many crops are also polyploids. The genus *Gossypium*, or cotton, harbours several species varying in ploidy levels (diploids and tetraploids) inclusive of wild and domesticated forms (landraces or cultivars). Today, the most widespread *Gossypium* species for cotton production is the allotetraploid *G. hirsutum*, but diploid species are of interest for crop improvement because they harbour variability for traits related to tolerance and resistance to biotic or abiotic factors. We searched the web for phenotypic datasets where: (1) at least one diploid and one polyploid *Gossypium* species were present; (2) species were exposed to at least two environments; (3) different forms were represented for each species on the spectrum from wild to cultivated. Analyses are ongoing to assess the impact of species, ploidy level, and domestication status on phenotypic plasticity using the genus *Gossypium* as a case study, with the expectation that polyploidy can result in more varied or greater phenotypic responses across environments, while domestication can result in less varied phenotypic responses, not necessarily restrained in their magnitude.