Optimizing regeneration conditions for Vicia faba germplasm. (C08-coyne170344-Poster)

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Abstract:

The ex situ conservation of cool season food legume (taxa: Pisum, Cicer, Lens, Lupinus, Vicia, Lathyrus, and Trigonella) of approximately 15,000 accessions dictates careful resource allocation to preserve genetic diversity. Outcrossing species in the collection include Vicia faba. Previously, distance between accession plots was used to reduce the likelihood of cross-hybridization. Visual inspection of distribution seed lots indicated probable inter-accession hybridization. In 1999 and 2000, a comparison of seed yields was conducted using controlled pollination conditions with and without insect pollinators, under dryland and irrigated production systems. Irrigated plots (no replication) with insect pollinators averaged 69% higher yield than without insects in 1999. Replicated plots in 2000 confirmed the 1999 result averaging 20% higher seed yield (by plot and by g/plant) in cages with honey bees. Irrigated plots had higher yield than dryland production. However, cooler growing conditions in dryland fields consistently provided higher stand counts. Dryland production in cages with insect pollinators has been selected as the regeneration system for Vicia faba germplasm.

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