

Report on Winter Nursery Program

2021 Peanut Crop Germplasm Committee Meeting

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Summary: The U.S. peanut industry depends on public and private breeding programs to develop new cultivars. The process of cultivar development can be shortened substantially by using a winter nursery to grow two generations per year rather than the single generation possible on the U.S. mainland. The USDA-ARS winter nursery program at the Tropical Agriculture Research Station (TARS) at Isabela, PR was discontinued in 1997; state and federal breeding programs located in several states (NC, GA, AL, TX, OK, and NM) and the private-sector program at AgResearch Consultants, Inc (ACI) and Algrano now participate in a winter nursery operated by the Illinois Crop Improvement Association (ICIA) at Juana Diaz, PR. The budget for the program is substantially higher than with TARS because of increased travel cost and the higher land-use fees at ICIA. The NCSU (Dunne) and USDA-ARS (Holbrook) peanut breeding programs coordinate the Puerto Rico Winter Nursery (PRWN). The NCSU breeding program annually sends two employees to Juana Diaz to plant the PRWN; the USDA-ARS project at Tifton, GA have annually sent one or two employees to oversee and assist in harvest. Support for the ongoing program is consistently funded through the Peanut Research Foundation. The request for funding typically includes the costs of travel to Puerto Rico for planting (NCSU coordinator and technician), the land charges and labor for plot maintenance by ICIA, the costs of travel to Puerto Rico for harvesting (USDA-ARS coordinator and technician) and partial shipping seed/pods after harvest. Benefits of the program include a reduction in the time required to develop new cultivars in response to needs of the industry, including but not limited to disease resistance, improved quality, or earlier maturity. Plots in 2020 were planted November 9-13 by the ICIA, including five collaborators and were harvested March 23-27, 2021 by ICIA (Table 1). Overall, the plots were maintained, harvested and shipped to each collaborator with minimal to no complaint.

Table 1. List of collaborators, plot numbers and growing seasons for the Puerto Rico Winter Nursery (PRWN) program managed by the Illinois Crop Improvement Association in Juana Diaz, PR.

Peanut Breeder	2019 Plots (Nov. 2019 – Apr. 2020)	2020 Plots (Nov. 2020 – Apr. 2021)	Total Plots
<i>Corley Holbrook (USDA)</i>	298 + 26 Bulks	156	480
<i>Naveen Puppala (NMSU)</i>	303	100	403
<i>Jeff Dunne (NCSU)</i>	215	100	315
<i>Mark Burow (TAMU)</i>	20	150	170
<i>Dylan Wann (Algrano)</i>	10	40	50
		Total Plots	1,418