Yield and 100-Seed Weight of Improved Mexican Peanut Breeding Lines with Bunch and Spreading Growth Habits.

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Peanut is an important legume crop in southern Mexico where 85% of the crop is grown during the rainy season. However, average pod yield of the rainy season crop is poor (1300 kg ha-1) because unimproved landrace cultivars are grown by the peasants. Improved cultivars are needed. In 2002 the best Mexican peanut cultivars, selected during 1994-2000, were crossed at the North Carolina State University peanut breeding program, among themselves and with other improved peanut lines including Perry. Breeding populations were received in Mexico in 2003, and evaluated on campus from 2004 to 2006. Spreading and bunch growth habits were observed. In 2007 through 2009 two different trials were conducted in different localities of the states of Morelos and Puebla. In this paper some results are reported from experiments conducted during 2009 in Cuauichichinola, Morelos, Mexico. Data were obtained from small plots of 2.64 m2. Although additional yield components were recorded, only peanut pod yield and 100-seed weight are presented. Of 14 lines with bunch growth habits, 1-06Ch, 4-06Ch, 8-06Ch, and 10-06Ch ranked in the group with the highest pod yields. Line 4-06Ch had the greatest yield (2127 kg ha-1), but those of the other three lines exceeded the national average yield indicated above. Criollo de Ocozocuautla, a landrace control in the trial, had the greatest 100-seed weight (80.8 g). Among lines with spreading growth habit, line 6-06Ch ranked first in pod yield (3174 kg ha-1) while 14-06Ch ranked last (1487 kg ha-1). Line 6-06Ch had a 100-seed weight of 71.4 g, intermediate to the extremes for the improved lines set by 20-06Ch (61.2 g) and 19-06Ch (80.2 g). Pod yield in 6-06Ch was more correlated with mature pod number than to seed size.