Genetic Potential of Locally Adapted Maize Populations and Participatory Crop Improvement for Rainfall Environments. (C08-rincon132957-Poster)

Authors:

- F.Rincon-Sanchez * - *UAAAN, Buenavista, Saltillo, Coahuila, Mexico.*
- N.A.Ruiz-Torres - *UAAAN, Buenavista, Saltillo, Coahuila, Mexico.*
- H.De Leon-Castillo - *UAAAN, Buenavista, Saltillo, Coahuila, Mexico.*

Abstract:

The objectives were to determine the genetic potential of local maize varieties and to identify strategies for crop improvement in a sustainable crop system throughout the participatory plant breeding. Initially, ten local varieties were evaluated using three different improved populations as testers. In the second part, a set of 182 plant-to-plant crosses between individuals of both local and improved population was tested at three locations (two irrigated and one rainfed). Local varieties and testers were classified based on heterosis and general combining ability estimates. Family selection was carried out in all three environments, taking into consideration the farmers criteria. Grain yield of families across the two irrigated environments varied from 5.341 to 13.890 t per ha, from these, 48% showed higher yielding than the improved population. A multiple-trait selection was computed making two groups, identified as the early and late selection. Recombination and further selection within each family group will make up two populations with 50% of both local and improved germplasm, as a strategy to develop new combinations adapted to limited and unpredictable rainfall conditions.

Corresponding Author Information:

Froylan Rincon-Sanchez
Universidad Autonoma Agraria Antonio Narro
Santa Barbara 308, Fracc. Fatima
Saltillo, Coahuila 25204
Mexico

phone: (844) 4110220
fax: (844) 4110220
e-mail: frincon@uaaan.mx

Presentation Information:

Presentation Date: Monday, November 11, 2002
Presentation Time: 4:00-6:00 pm

Poster Board Number: 1312

Keywords:
Genetic potential evaluation, Local adapted and improved varieties, Participatory plant breeding, Zea mays