Abstract
México has a large diversity of blue maize (Zea mays L.), which is used for human food as tortillas, tlacoyos, pinole, atole and elotes, and it has potential for industrial extraction of pigments and snack elaboration. In this study several agronomic traits of blue maize varieties were determined in some locations of the Mexican central high lands. A set of 100 landraces, 88 blue and 12 red representative of Elotes Cónicos, Chalqueño, Cónico Norteño, Gordo and Bolita races, were included. The experimental design was a lattice 10 x 10. The trials were established in three locations of the State of Puebla (El Seco, Ahuatepec and Tlachichuca), one in the State of Tlaxcala (Apizaco), and one in the State of México (Coatlinchán), all of them located between 2240 and 2600 m of altitude. All experiments were conducted under rainfed conditions, except at Coatlinchán which was irrigated three times. Analysis of variance showed differences (P≤0.01) among locations, varieties and the locations x varieties interaction. Grain yield ranged from 3.5 to 6.7 t ha⁻¹ among locations and from 2.7 to 6.6 t ha⁻¹ among varieties. El Seco produced the highest grain yields, and at this location the best landraces which belong to the Chalqueño race, yielded from 8.7 to 10.5 t ha⁻¹. In contrast, varieties from Cónico Norteño, Gordo and Bolita races showed earliness and low grain yield (2.7 to 3.8 t ha⁻¹). The best blue landraces throughout locations were Mex-258 from the Chalqueño race, Criollo Negro from El Seco, Puebla, and Criollo Azul from San Nicolas Buenos Aires, Puebla, both the best landraces the Elotes Cónicos race.

Keywords
Zea mays, blue maize races, grain yield, anthesis-silking interval, ears per plant.