Emergence Capabilities of Southwest U.S. Maize Landraces. (C03-bousselot102259-Poster)

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Abstract:

Maize producers often encounter adverse conditions at planting and early in the growing season. Greater flexibility in planting depth and date could reduce early season risks and preserve yield potential by placing the seed in moist soil and/or extending protection of the sensitive growing point from spring frost and hail. Maize (Zea mays L. spp. mays) landraces native to the US Southwest are reputed for their ability to emerge from extraordinary depths, 10 to 40 cm. The emergence capacity of 11 landraces and a modern check population was tested at three planting depths, 5, 15 and 25 cm, in a controlled environment study. Seedling dry matter partitioning and morphology were also examined. All landraces and the check emerged successfully from 5 and 15 cm. Landraces emerged better than the check from 25 cm. Compared to the check, landrace seedlings had greater root:shoot ratios and generally exhibited longer radicles and unusual root architectures. Additional studies will test emergence from greater depths and under field conditions.

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