

**In situ rainwater harvesting for improved maize production under semi-arid conditions:
Case study of Chókwè, Mozambique**

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In Mozambique rainfall is irregular leading to occurrence of low yields in rainfed agriculture, bringing all negative effects for food security to rural communities. Particularly in the Southern part of the country where the scarce rainfall is oddly distributed, the situation is aggravated by the lack of knowledge and strategies of water management that will allow the maximization of yields. In Chókwè district located at this area, the average maize yield is roughly 500 kg ha⁻¹. The present paper reports the field trial results of *in situ* rainwater harvesting practices tested in the Chókwè district, Gaza province of Mozambique. The aim of the trial was to evaluate the maize yield as affected by different plastic cover and spacing. The trial was installed in Chókwè Agricultural Research Station on loam-clay soils during the rain season of 2007. The experimental design was randomized complete block with three replications. The treatments comprised of three different levels of plastic covering: (i) the normal furrows without covering (control); (ii) the covering of the two consecutive furrows (1.6 m spacing); and (iii) the covering of the three consecutive furrows (2.4 m spacing). Daily soil water deficit was monitored using WinProbe, rainfall data and the final grain yield was then measured at the end. The preliminary observation of the raw data results shows a higher yield for the plastic covered treatments but still need a statistical analysis for validation. Although the promising results of this technique, the plastic is expensive and it is not common practice in the region. Therefore, there is a need to test other materials that can be used with the same level of efficiency as the plastic for water harvesting and moisture conservation.

Keywords: plastic cover, spacing, water harvesting, maize

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