EVALUATION OF COWPEA (VIGNA UNGUICULATA (L.) WALP.) VARIETIES FOR INTERCROPPING WITH MAIZE (ZEA MAYS L.) AND SORGHUM (SORGHUM BICOLOR L.) IN A SEMI-ARID AREA OF ZIMBABWE

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ABSTRACT
The practice of intercropping cereals and legumes in smallholder agriculture has been recommended in small-scale farming, but few attempts have been made to evaluate cowpea lines suitable for mixed cultures in Zimbabwe. In this study, four cowpea lines, IT835-875, IT835-889, IT835-789 and IT835-872 were evaluated for suitability for intercropping with maize (Zea mays L.) and sorghum (Sorghum bicolor L.) in Natural Region V of Zimbabwe receiving mean annual rainfall less than 500 mm. The cowpea lines were intercropped with early maturing maize variety (SC 401), and early maturing sorghum varieties (SV2, in 1995/1996; and ZWSHI, in 1996/97 cropping season). Although intercropping reduced yields of individual crops by varying amounts, land equivalent ratios (LERs) were greater than 1.00, implying improved productivity with intercropping. The highest LER of 1.41 average across two seasons was obtained from cowpea line IT835-875 intercropped with maize. In the sorghum-coupea (Vigna unguiculata L.) combination, the highest tLER (1.44) averaged across seasons, was obtained with cowpea variety IT835-789. Both cereals (sorghum and maize) were the dominant components in the intercrops with cowpea. Yield losses for sorghum and maize in the cowpea intercrops averaged about 17% and 26% across the different cowpea varieties used in the study. Mean yields for cowpea averaged (averaged across all the varieties) were depressed by 47% and 49% in sorghum and maize intercrops, respectively. Cowpea variety IT835-789 was relatively competitive with sorghum (IT835-789 had the least yield reduction of 39% compared with other cowpea varieties) while variety IT 835-889 was relatively competitive with maize (IT835-872 gave yield advantage of greater than 30% in sorghum/coupea intercrop across two seasons. It is recommended that the superior varieties for cereals and legumes identified above, be grown in association, in the semi-arid regions of Zimbabwe.

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