

## ABSTRACT

Traditional variety selection practices rarely involve end-users of breeding products, which is regarded as a major factor for the continued reliance by farmers on unproductive landraces and old varieties. Here, we report on a participatory variety selection (PVS) approach involving on-farm trials established across five drought-prone districts of Zimbabwe during the 2018–19 summer season. The objective of this study was to evaluate nine prereleased sorghum lines developed by ICRISAT against three commercial check varieties to identify the high-yielding, stable sorghum (*Sorghum bicolor* (L.) Moench) improved breeding lines, with desirable agronomic attributes as per farmers' perceptions. Results demonstrated that although there was a positive and significant relationship between the across-location grain yield (GY) and the overall genotype performance score (OGPS, ranking by farmers), farmers' choices were related to locality (i.e., resident districts) and grain color. Arid locations were the most ideal for sorghum evaluation. Advanced lines IESV91070DL (1.41 t ha<sup>-1</sup>) and ASARECA 12-3-1 (1.9 t ha<sup>-1</sup>), as well as a commercial variety (Macia, 1.73 t ha<sup>-1</sup>) were high-yielding, stable and most preferred by farmers. Although the selection criteria of both the farmers and researchers pointed to selection for high yield performance, red sorghum genotypes (e.g., IESV99061DL and SDS3472), which showed high GY performance and stability were not among the most preferred by farmers. Overall, results demonstrated that PVS approaches should be combined with traditional varietal selection tools as this may increase adoption of new varieties.