Agronomic performance and adaptability study of new guinea lines in sudanian and sudano-sahelian zones

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An evaluation of agronomic performance and adaptability study of new guinea lines was conducted during two years in three sites (Kamboinse, Fada and Farako-Ba) located in two different agro climatic zones (sudanian and sudano-sahelian). Twenty sorghum lines including checks (Kapelga, ICSV 1049) were evaluated in a randomized complete bloc design with genotypes as studied factors. Agromorphological parameters and midge damage were collected in all studies sites. Among tested lines, seven lines (Kouria, PR3009B, ISX-09004-1-3-1-3-6-7-7-3, Fambe B, Lata//Grin-9-14-1-1-vrac, ISX-09005-7-4-3-1-10-6-6-10, 12B) were well adapted to sudano-sahelian zone whereas the remaining (11) were well adapted to sudanian zone according to heading date. Three lines (Lata//DouaG-4-27-1-1-vrac, 014-SB-EPDU-1004 and ND07e21(17x30) F2-6-v) were stable across environments and only Lata//Grin-9-14 -1-1 with the two checks (Kapelga and ICSV 1049) were stable under low yielding environment characterized by high midge pressure conditions. Three lines (ISX-09005-7-4-3-1-10-6-6-10, Lata//Ridb-3-9-1-1 and Fambe B were specific to high yielding environment (Kamboinse and Farako-Ba). The stable lines (Lata//DouaG-4-27-1-1, 014-SB-EPDU-1004 and ND07e21(17x30) F2-6-v) across environments constitute some promising lines to be registered in the national catalog for vegetal varieties and will be promoted for cultivation in sudanian and sudano-sahelian zones to enhance sorghum production and also to contribute to ensure food security in Burkina Faso.

Keywords: Burkina Faso - GGE biplot - Midge damage - Grain yield.

References:

1. Nofou Ouédraogo*, Louis-Marie Raboin, Gilles Ibié Thio et al. 2022. Journal of Applied Biosciences, Vol 167(4), pp17320-17334.

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