

Impact of frontline demonstrations on post-rainy (*rabi*) sorghum

Rabi sorghum is valued mainly for direct human food consumption and fodder for livestock. However, almost 31% area of post-rainy sorghum has reduced from 4.63 m ha during 2008-09 to 3.51 m ha during 2013-14. The Maharashtra is major sorghum growing state followed by Karnataka and Telangana in the country. *Rabi* sorghum is mostly grown in dryland conditions on residual soil moisture of rainy season. The productivity of *rabi* sorghum is dependent on quantity of rains during pre-season monsoon and water holding capacity of soil, soil moisture conservation practices, use of high yielding cultivars on the basis of soil types and available production technologies. Whereas, in few pockets of Western Maharashtra and Karnataka, the crop is grown on irrigated conditions with two to four irrigations which has higher productivity up to 3.5 to 4.0 t/ha. The productivity of post-rainy sorghum is lesser (840 kg/ha) than rainy sorghum (1033 kg/ha) during 2013-14. The important reasons are; (i) non-adoption of improved sorghum cultivars on soils type basis and (ii) the crop is grown on residual soil moisture. Keeping these in view, FLDs on *rabi* sorghum were being organized with latest high yielding *rabi* sorghum varieties and production technologies at different locations as mentioned below.

During *rabi* 2009-10, 217 FLDs on sorghum were organized in 27 districts across the three sorghum growing states *viz.*, Maharashtra, Karnataka and Andhra Pradesh with latest varieties *viz.*, CSV 18, CSV 22, PKV Kranti, Phule Vasuda, Parbhani Moti, Parbhani Jyoti and Phule Chitra along with local cultivar as a check. These varieties gave higher grain yield up to 130% and stover yield up to 97% than the local checks. On an average, the demonstrated varieties could earn net returns of Rs.18,105/- on the cost of Rs.10,747/- per ha, which is 56 per cent more than the local checks where it was Rs. 11,602/- per ha on the cost of Rs.8,258/- per ha.

During *rabi* 2010-11, 306 frontline demonstrations on sorghum were organized in different sorghum growing districts across the three states *viz.*, Maharashtra, Karnataka and Andhra Pradesh with latest sorghum varieties *viz.*, CSV 18R, CSV 22R, PKV Kranti, Phule Vasuda, Phule Yashodha, Phule Revati and Phule Chitra along with locally popular cultivar as a check. The varieties gave 39 per cent higher grain and 25 per cent stover yields than the local checks. On an average, the demonstrated varieties could earn net returns of Rs.23,118/- on the cost of Rs.10,582/- per ha, which is 44 per cent more than the local checks.

During *rabi* 2012-13, 280 frontline demonstrations (FLDs) on sorghum were organized on 156 ha in seven districts across the three different sorghum growing states *viz.*, Maharashtra, Karnataka and Andhra Pradesh. Latest sorghum varieties *viz.*, CSV 22R, CSV 18R, Phule Vasuda, Phule Suchitra, Phule Revati, PKV Kranti, Parbhani Moti and CSV 26R were demonstrated along with locally popular cultivar as a check in farmers' fields at different locations.

The demonstrated sorghum varieties gave 69 per cent higher grain and 67 per cent stover yields than the local checks. On an average, the demonstrated varieties could earn net returns of Rs.25,477/- on the cost of Rs.13,906/- per ha, which is 97 per cent more than the local check.

During *rabi* 2013-14, 341 frontline demonstrations (FLDs) on sorghum were organized in seven districts across the three different sorghum growing states *viz.*, Maharashtra, Karnataka and Andhra Pradesh. Latest sorghum varieties *viz.*, CSV 22R, CSV 18R, Phule Vasuda, Phule Suchitra, Phule Revati, Phule Anuradha, PKV Kranti, Parbhani Moti, CSV 26R and CSV 29R were demonstrated along with locally popular cultivar as a check in farmers' fields at different locations.

The demonstrated sorghum varieties gave 77 per cent higher grain and 64 per cent fodder yields than the local checks. On an average, the demonstrated varieties could earn net returns of Rs.28,979/- on the cost of Rs.16,100/- per ha, which is 90 per cent more than the local check.

During *rabi* 2014-15, 334 frontline demonstrations (FLDs) on sorghum were organized in seven districts across the three different sorghum growing states *viz.*, Maharashtra, Karnataka and Telangana. Latest sorghum varieties *viz.*, CSV 22R, CSV 18R, Phule Suchitra, Phule Revati, Parbhani Moti, Phule Anuradha, CSV 26R and CSV 29R were demonstrated along with locally popular cultivar as a check in farmers' fields at different locations.

The demonstrated sorghum varieties gave 38 per cent higher grain and 43 per cent fodder yields than the local checks. On an average, the demonstrated varieties could earn net returns of Rs. 31,863/- on the cost of Rs.17,278/- per ha, which is 64 per cent more than the local check.

During *rabi* 2015-16, 377 frontline demonstrations (FLDs) on sorghum were organized in seven districts across the three major *rabi* sorghum growing states *viz.*, Maharashtra, Karnataka and Telangana. Latest Sorghum varieties *viz.*, CSV 29R, CSV 26R, Phule Suchitra, Phule Revati and Parbhani Moti were demonstrated along with locally popular cultivar as a check in farmers' fields at different locations.

The demonstrated Sorghum varieties gave 52 per cent higher grain and 38 per cent fodder yields than the local checks. On an average, the demonstrated varieties could earn net returns of Rs. 35,946/- on the cost of Rs.15,860/- per ha, which is 65 per cent more than the local check.

Overall performance of *rabi* FLDs

Total 944 FLDs were organized between 2009 and 2015 with latest *rabi* sorghum cultivars, CSV 26R, CSV 29R, SV 18R, CSV 22R, PKV Kranti, Phule Vasuda, Phule Yashodha, Phule Revati, Phule Chitra, Parbhani Moti and Parbhani Jyoti in major sorghum growing states Maharashtra, Karnataka and Andhra Pradesh. They gave additional 84% grain and 61% stover yields than the local checks and obtained 50% more net returns than the local cultivars.