R B Ghorade et al., Agrotechnol 2014, 2:4
http://dx.doi.org/10.4172/2168-9881.S1.011

OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Conference on
Agriculture & Horticulture
October 27-29, 2014 Hyderabad International Convention Centre, India

Successful example of breeding for nutritional quality: National released sorghum hybrid CSH-35

R B Ghorade, V V Kalpande, S A Bhongle, S N Kale, V U Sonalkar and Seema Nemade
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, India

Breeding for improved nutritional quality has got lot of significance in the present condition. Sorghum Research Unit, Dr. PDKV, Akola (MS) has recently developed one high yielding kharif sorghum hybrid CSH-35 (SPH 1705) with excellent quality parameters. This hybrid has been released at national level by the name CSH-35. In crops like sorghum where heterosis breeding has been extensively exploited and yield plateau has reached, development of high yielding hybrid is the challenge. Sorghum hybrid CSH-35 gave average grain yield of 41.90 q/ha in Zone-II during three years (2011, 2012 & 2013) and has shown superiority of 7.90% and 29.54% over check hybrids CSH 16 (38.83q/ha) and CSH 23 (32.34q/ha) respectively. Sorghum hybrid CSH-35 has shown average fodder yield of 126.81 q/ha in Zone-II during three years and has shown superiority of 6.63% and 29.16% over check hybrids CSH 16 (118.93q/ha) and CSH 23 (98.18 q/ha) respectively. Because of the synchronous maturity of male and female parents, hybrid seed production of this hybrid is easy and effective. Organoleptic quality of the roti prepared from the hybrid CSH-35 was the best among all the testing entries with the DMRT rank of 1 as compared to the checks CSH 16 with the DMRT rank of 6 and CSH 23 with DMRT rank of 10. Roti prepared from CSH-35 was superior than that of CSH 16 and CSH 23 in all Organoleptic quality parameters like colour and appearance, flavour, texture, taste and overall acceptability. All these parameters were in the category of "Like very much (Very good)" while the checks CSH 16 and CSH 23 were in the category of "Like moderately". Stover quality of the hybrid CSH-35 was better as compared to the checks. Crude protein (%) of SPH 1705 was more (7.43%) as compared to the check CSH 16 (7.40%). IVOMD (%) of CSH-35 was more (45.15%) as compared to the checks CSH 16 (44.86%). Metabolizable energy of CSH-35 was better (6.42 ml/kg) as compared to check CSH 16 (6.33 ml/kg). Nutritional constituents responsible for roti making quality of hybrid CSH-35 was better as compared to the checks. Water absorption capacity of CSH-35 was more (112 ml/100g) as compared to the check CSH 16 and CSH 23 (108 ml/100g) indicating the better roti quality as this parameter is positively correlated to the roti quality. Crude protein content (%) of CSH-35 was more (9.68%) as compared to CSH 16 (9.04%) and CSH 23 (8.66%). Total sugar % of CSH-35 was higher (1.66%) as compared to check CSH 16 (1.54%) indicating good amylolyptic activity while preparation of roti and also good taste of roti. Hybrid CSH-35 had better performance for most of the insect pests as well as the diseases. Proposed genotype CSH-35 was found to be more fertilizer responsive.

akola@sorghum.res.in