

PDKV Sardar (AKAW 4210-6): Bread wheat variety for late sown irrigated ecology in Maharashtra

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Article history: Received: 12 November 2017, Revised : 19 Januray 2018, Accepted: 23 March 2018

Citation: Potdukhe NR, SG Bharad, PV Mahatale, NM Kanse and JP Kathod. 2018. PDKV Sardar (AKAW 4210-6): Bread Wheat Variety for late sown irrigated ecology in Maharashtra. *Wheat and Barley Research* 10(1):59. doi.org/10.25174/2249-4065/2018/76341

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A new bread wheat variety PDKV Sardar (AKAW 4210-6) was released and notified by the Central Subcommittee on Crop Standards, Notification and Release of Varieties vide S.O. 3540 (E), dated 22nd, November, 2016 for commercial cultivation under late sown irrigated conditions in Maharashtra.

This early maturing (95-105 days), semi-dwarf (84 cm), rust resistant wheat variety was developed by pure line selection made from the germplasm line of 3rd Segregating Screening Nursery (SSN-DF-99-186) having pedigree HUW468/PBW435 at Wheat Research Unit, Akola (M.S.).

PDKV Sardar was initially evaluated in university PVT trial during 2006-07 and 2007-08 and then in 28 Multi location Varietal Trials from 2007-08 to 2014-15. Simultaneously, it was tested in All India Co-ordinated Breeding Trials conducted at 22 locations of Peninsular Zone under irrigated late sown group during 2008-09 to 2010-11. The average yield of PDKV Sardar in university, state and AICRIP trials was 3925 kg /ha, 3575 kg /ha and 4131 kg/ha, respectively. In Multi-location varietal trials conducted in Maharashtra state PDKV Sardar has recorded 4.85%, 15.05% and 16.41% grain yield superiority over the check varieties viz. AKAW 4627, NIAW 34 and AKW 381 respectively. Similarly, it recorded 7.40% higher yield over national check NIAW 34 in coordinated trials conducted in PZ.

Physiological parameters: This newly developed variety has also better physiological parameters than check varieties. The various physiological parameters viz., leaf area (1.89 cm²), leaf area index (3.81), membrane thermo stability (73.36), photosynthetic efficiency (0.80), relative water content (93.59), canopy temperature (6.64) and total chlorophyll content (3.20) were superior to checks AKAW 4627 and NIAW 34

i.e. leaf area (1.56-1.74 cm²), leaf area index (3.39 and 3.77), membrane thermo stability (57.49 and 69.50), photosynthetic efficiency (0.78 and 0.78), relative water content (89.47 and 89.55), canopy temperature (7.50 and 8.50) and total chlorophyll content (2.86 and 3.16), respectively under late sown conditions.

Disease resistance: PDKV Sardar has shown rust reaction at par with check variety, since it has recorded black rust (Stem) average coefficient of infestation value (ACI) up to 40 MS (9.0) and brown rust (Leaf) incidence up to 60S (9.5) under epiphytotic conditions in Peninsular Zone. When compared against NIAW 34 check for brown rust it has recorded ACI value 5S (1.2) against 30 S (10.6) ACI value of check.

Superior grain quality: PDKV Sardar proved to be a good micronutrient source as the iron (47.35), Zinc (39.10) and Manganese (29.10) content is better. It has average protein content of 12.80 %, high value of hectoliter weight (80.40 kg hl⁻¹), high sedimentation value (54 ml) and the molecular weight *i.e.* glutenin subunits of PDKV Sardar is also good Glu-B1 (17+18).

Acknowledgement

The article is based on the SVRC proposal and the authors are highly thankful to all the co-operators for their contribution.

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