

WH 1124: A new wheat variety for late sown irrigated conditions in North West Plain Zone of India

Vikram Singh*, Bhagat Singh, Ishwar Singh Panwar, Sada Ram Verma, Mohinder Singh Dalal Rajinder Parsad Saharan, Yashpal Singh Solanki, Om Parkash Bishnoi and Surender Singh Karwasra
CCS Haryana Agricultural University, Hisar-125004, India

Article history: Received: 21 February, 2015; Revised : 30 May, 2015; Accepted: 30 May, 2015

Citation: Singh V, B Singh, IS Panwar, SR Verma, MS Dalal, RP Saharan, Y S Solanki, OP Bishnoi and SS Karwasra. 2015. WH 1124: A new wheat variety for late sown irrigated conditions in North West Plain Zone of India. *Journal of Wheat Research* 7(1):79

***Corresponding author:** Email: vskaliramma@gmail.com, Tel: 01662-289408

@ Society for Advancement of Wheat Research

A new variety viz. WH 1124 having high yield potential, resistance to rusts and tolerant to terminal heat stress has been developed by CCS HAU, Hisar.

WH 1124 been developed through selection from CIMMYT material(MUNIA / CHTO // AMSEL). It has been tested at 48 locations in All India Co-ordinated trial conducted during (2010-13) out of which it occurred 21 times in 1st non-significant group indicating its wider adaptability and stable yielding feature. The weighted mean basis analysis (2010-11 to 2012- 13) indicated that the variety, 'WH 1124' out yielded all the check varieties viz., 'PBW 373' (by 11.78%), 'WH 1021' (by 8.10%) and 'PBW 590' (by 7.55%). WH 1124 recorded a potential yield of 56.1q ha⁻¹ at Ludhiana during 2010-11 in NWPZ.

'WH 1124' has semi-erect growth habit, green foliage colour and non-pigmented coleoptiles. It has average height of 91cm, medium erect flag leaf, hairy auricle and medium waxiness on sheath and leaf blade. The peduncle length was 34.5cm with straight attitude. It has medium long, medium dense, waxy ear with 12cm long white awns. The lower glume is of medium size with round shoulder and straight beak. It took 84 days to flower and 121 days to mature. 'WH 1124' has amber colour, ovate, hard, narrow germ, medium crease grains, with, test weight of 35g.

In the agronomical trials of NWPZ, conducted at late sown conditions, WH 1124 had superiority (45.02q ha⁻¹) over the checks viz., PBW 373, PBW 590 and WH 1021. The variety also yielded highest (36.43q ha⁻¹) under very late sown conditions. The phenotypic plasticity of WH 1124 is also evident from the minimum reduction in yield (19.08%) under very late sown condition compared to checks where reduction ranged from 22.4% (PBW 590) to 26.09% (PBW 373). Thus, the variety WH 1124 is highly suitable for different crop rotations such as basmati rice-wheat, sugarcane-wheat, potato – wheat etc. WH 1124 showed no reduction in number of grains per spike and least reduction

in test weight as compared to checks under very late sown conditions. 'WH 1124' is a physiological efficient genotype having a desirable CTD (4.9), low heat susceptible index (0.79), chlorophyll fluorescence (Fv/Fm: 0.714) and SPAD chlorophyll content (42.4). Thus, the genotype has high photosynthetic rate and better heat tolerance

Rust is major disease of wheat in NWPZ, the variety WH 1124 exhibit excellent degree of resistance to yellow rust (ACI 5.7-10.9) as compared to checks, PBW 590(ACI 19-27), PBW 373 (ACI 32.6-42.9) and WH 1021 (ACI 12.1-15.5) whereas, for brown rust ACI scores for varieties WH 1124, PBW 590, PBW 373 and WH 1021were 0.8-3.0,0-3.3, 4.4-16.7 and 1.7-6.8 respectively under artificial condition. The race specific APR response analysis revealed that WH 1124 have high level of resistance to 78S84, 104-2 and 117-6 pathotypes of yellow, brown and black rusts. The variety also showed high level of resistance against loose smut (ACI 11) as compared to check in which ACI varies from 22.4 to 38.3. Variety also showed better resistance to karnal bunt (ACI 5.3) against latest check PBW 590 (ACI 9.3). 'WH 1124' possesses better quality characters in terms of higher sedimentation value (47ml), hectolitre weight (76.4) and good biscuit quality spreading factor (7.16). The variety is also better in nutritional uptake possessing the maximum content of iron (43.4ppm) and zinc (41.7ppm). Variety also depicts good percentage of extraction rate (70.9%), protein content of 12.9%. and chappati making score of 7.46 which is comparable to checks.

High grain yield potential of WH 1124 with early maturity, high photosynthetic rate, terminal heat tolerant and plasticity for sowing time making this variety suitable for late sowing in NWPZ. Variety with such a good yield potential coupled with high degree of disease resistance and grain quality will be a good option for different cropping systems and genotype diversification.