



International Conference

FROM SEED TO PASTA III

A SUSTAINABLE DURUM WHEAT CHAIN
FOR FOOD SECURITY AND HEALTHY LIVES



Bologna - Italy, 19-21 September 2018

P.4.34

VARIETAL INVESTIGATION OF DURUM WHEAT TARGETING INDUSTRIAL PRODUCTION OF SEMOLINA AND PASTA IN NEPAL¹

Dhruba B. Thapa^{2*}, Mahesh Subedi², Suman Bohora², Sapana Ghimire², Chhote L. Chaudhary², Santosh Tripathi², Brahmanti Mahato², Subarna Sharma³, Shree Krishna Adhikari⁴, Manoj Sapkota⁵, Karim Ammar⁶

¹- International Conference on "From Seed to Pasta III" at Bologna, Italy 19 - 21 September, 2018.

²- Nepal Agricultural Research Council, Nepal.

*Corresponding author: thapa.dhruba777@gmail.com

³- Formerly Nepal Agricultural Research Council.

⁴- Agriculture & Forestry University, Rampur, Nepal.

⁵- University of Georgia, Athens, GA, USA.

⁶- International Maize and Wheat Improvement Program, CIMMYT, Mexico.

Introduction and testing of durum wheat from CIMMYT-Mexico was initiated in 2007 by Agriculture Botany Division of NARC at Regional Agriculture Research Station, Khajura and its command areas for establishing durum wheat as industrial crop suitable for mid and far western plain regions of Nepal. The current research involved introduction, testing and selection of genotypes from CIMMYT's IDSN, IDYN nurseries and their advance into National trials, DWAVTs and Participatory Variety Selection (PVS) for variety recommendation. For identifying superior genotypes, yield and yield attributing traits of 94 durum wheat genotypes were evaluated at Khajura from 2011/12 to 2016/17. Throughout all trials, days to heading and maturity varied from 71 to 105 days and 105 to 135 days after sowing, respectively. Grain yield varied from 1.35 to 6.86 t ha⁻¹, plant height from 59 to 108 cm; number of tillers per m² from 84 to 497, number of grains per spike from 25 to 74; grain weight per spike from 0.62 to 3.50 g and thousand grain weights varied from 12.7 to 82.4 g. Based on Best Linear Unbiased Prediction (BLUP), DWK26, DWK98, DWK38, DWK94 and DWK135 showed the best performance. Correlation among yield attributing traits and clustering of genotypes were performed based on both least square means and BLUP values, providing us a distinct association of traits with yield and superior clusters for precise selection of superior genotypes. For the first time, two durum varieties: DWK26 (6.22 t ha⁻¹) and DWK38 (6.72 t ha⁻¹) has been released in 2017 named as Khajura Durum 1 and Khajura Durum 2 respectively. Seed production of these varieties is going on targeting 1,000 hectares in Nepal. Coordination of stakeholders for durum varietal improvement with end-use production and consumption is of great importance. Establishment of the crop at industrial scale is crucial for the economic enhancement of farmers and food security.

ABSTRACT