

## **Diversity analysis of drought tolerant wheat genotypes by RAPD marker**

**Usha Pant<sup>1</sup> and V.K. Khanna<sup>2</sup>**

Received May 10, 2017 and Accepted July 7, 2017

**ABSTRACT :** Drought tolerance is an essential trait that needs to be incorporated in the cereal crop, particularly for those that are grown under stress condition. Diversity analysis and genotypes identification using molecular markers increase the efficiency and speed of analysis and these are basis to start any crop improvement programmes. 13 drought tolerant and three drought susceptible wheat genotypes were analysed by using RAPD marker. A total of 22 random primers were used, out of which only 14 primers gave polymorphic banding profile. The range of polymorphism is from 29.4-100.0%. The size of amplified product ranged from 200bp to 3.53bp. Primer G19 showed maximum polymorphism (100%), followed by 10-SS (86%) and UBC-572 (82.6%). The range of similarity coefficient was 0.80 to 0.98. The maximum similarity was found between UP 2572 and PBW 65. Both were the drought/heat tolerant genotypes. Halna and UP 2425 were the most diverse genotypes with a least similarity coefficient of 0.80. Dendrogram showed that most of the drought tolerant and drought susceptible genotypes were clustered into two groups. Unique bands were also observed that can be further used for the identification and characterization of genotypes. Unique fingerprinting can also be used for maintaining the genetic purity of cultivars.

**Key Words:** Wheat, drought, diversity analysis, RAPD marker, similarity coefficient, dendrogram.