

## WEED SUPPRESSING ABILITY OF BREAD WHEAT GENOTYPES UNDER GREENHOUSE AND FIELD CONDITIONS

Rizvi S. J. H.<sup>1</sup>, Ketata H.<sup>1</sup>, Bazazi D.<sup>2</sup>, and Roostaii M.<sup>2</sup>, Pala M.<sup>3</sup>.

<sup>1</sup>International Center for Agricultural Research in the Dry Areas (ICARDA), P.O. Box 19835-111, Evin, Tehran, Iran; <sup>2</sup>Dryland Agricultural Research Institute, Maragheh (DARI), Ministry of Jihad-e-Agriculture, Iran; and <sup>3</sup>International Center for Agricultural Research in the Dry Areas (ICARDA), Aleppo, Syria

While successes achieved in disease and insect resistance, and in integrated pest management system in general have led to reduction in the demand for fungicides and insecticides, the use of herbicides is still increasing worldwide (Olofsdotter, *et. al.*, 2002). To reduce the dependence on heavy use of herbicides, scientists are trying to use allelopathic and competitive ability of crop genotypes (interference) in a synergistic manner to control weeds effectively.

Based on a 3-year trial using over 200 wheat genotypes, 29 promising entries were selected for further testing of their weed-suppressing ability under field and greenhouse conditions. Final results of field experiments showed that wheat genotypes ‘Batera’ and ‘NS55-58/Vee’ proved best in suppressing the weed growth by 75 and 62%, respectively, and in achieving yields similar to hand weeding. This indicates that wheat varieties do exist that can bring the weed population below the threshold level, thus avoiding the necessity of chemical weed control.

A greenhouse test was conducted that confirmed the weed suppressing ability of the field-selected genotypes. These findings indicate that the weed-suppressing ability of wheat genotypes is the result of a synergistic effect of allelopathy and competition. However, the contribution of these two phenomena towards weed suppression varies from genotypes to genotype. Our results indicate that wheat genotypes with high interference against weeds along with other desirable characters can be identified from the existing wheat varieties, or developed as “weed resistant” cultivars through hybridization or other genetic manipulation.

### REFERENCES

Olofsdotter, M., Jensen, L. B., and Courtois, B., 2002. Improving crop competitive ability using allelopathy - an example from rice. *Plant Breeding*, 121: 1-9.