Dual-purpose and Grain-only Systems of Winter Wheat: Mega-environments in the Same Field? (C01-marza091045-Poster)

Authors:

- F.Marza* - *Oklahoma State University*
- B.F.Carver - *Oklahoma State University*
- E.G.Krenzer - *Oklahoma State University*
- I.Khalil - *Oklahoma State University*

Abstract:

Biplot displays of AMMI-derived principal components have been used to reveal unique patterns of response from multi-environment cultivar trials. Our objective was to determine such patterns for wheat (Triticum aestivum L.) yields from the southern Great Plains measured under dual-purpose (DP) and grain-only (GO) management systems. The analysis was based on grain yield data from two sets of experiments. A historical set of 12 hard red winter cultivars was evaluated from 1997 to 2000 under DP and GO management systems at Marshall, OK. Another set of data, from 1998 to 2001, consisted of yields of 18 to 24 cultivars within years, or yields of nine cultivars common across years, tested under DP and GO systems at several Oklahoma locations. Based on the biplot results, the GO management system discriminated among cultivars more than the DP system. The DP and GO management systems represented highly unique environments with respect to cultivar yield response, particularly when forage removal in the DP system was by grazing rather than by clipping. Selection in one environment does not appear promising for maximizing gains in the other.

Corresponding Author Information:

Felix Marza
Oklahoma State University
368 Ag Hall
Stillwater, OK 74078

phone: 405-744-6414
fax: 405-744-5269
e-mail: marza@okstate.edu

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