

16th SYMPOSIUM

Samsun 2013

24-27 June, 2013



EWRS

*European Weed
Research Society*

PROCEEDINGS

**Physiological indices of weed species effects at different density on corn
(*Zea mays* L.) growth**

G. Mahmoudi, A. Ghanbari, F. Hossainpanahi, A. A. Mohammad Abadi
*Ferdowsi University, Agriculture Faculty, Department of Agronomy: Weed Science Group,
Mashhad, Iran
Gh_domestica@yahoo.com*

Crop density is one of the usage tools in sustainable agriculture to carry out integrated weed management. This study was conducted in research field of Ferdowsi University of Mashhad, Iran. Four levels of corn densities (5, 6, 7 and 9 plant /m²) and four levels of species diversity were used including complete control, broad leaved control (corn and grass weeds), grass control (corn and broadleaves) and without control (corn, broadleaves and grass weeds) by weeding. All species sampling were done at five stages from 42 days after planting up to the end of growth period. Crop growth rate (CGR), total dry matter of weed (TDMw), total dry matter of corn (TDMc) and seed yield per ha (SY) of corn were measured. Results showed that TDMc was minimum at 9 and 5 plant /m² in the early growth period, while it was highest at 9 plant/m² by the end of the growth period. Also, TDMc increased by 46% with increasing density in the weed free control. The same trends were observed for CGR. It was found that broad leaved weeds were more effective than grass weeds (causing 60 and 34% lower CGR reduction, respectively) on corn growth. Also SY in low density was significantly less than that in great density. Furthermore, inter-competition at 9 and 7 plant /m² was more effective than intra-competition, but competition had no significant influence on SY at low density (5 and 6 plant /m²).