

# **Detection of Gene Action Through Generation Mean Analysis for Yield and Yield attributes in Sunflower (*Helianthus annus* L.)**

**K Rukmini Devi, M Ganesh and Arg Ranganadha**

Dept. of Genetics and Plant Breeding, College of Agriculture, Rajendranagar,  
Hyderabad -30

## **ABSTRACT**

The study on gene effects for eight quantitative traits viz., days to 50% flowering, plant height, head diameter, filled seeds per head, seed yield per plant, 100 seed weight, oil content and oil yield per plant in sunflower was studied by employing generation mean analysis. The results revealed that day to 50% flowering, plant height, head diameter, filled seeds per head, 100 seed weight and oil content characters were governed by dominance and epistatic gene interactions. It clearly indicated that traits can be exploited through heterosis breeding as well to break the gene constellation and release of free variability, biparental mating design can be used. However in cross PFMS 400 A x GP 9-1-163-8 and IMSWGA x GP9-163-8 for days to 50% flowering, where in ARM 245 A x 856 R (plant height), IMS WGA x GP 9-1-163-8 (seed yield) and IMS WGA x GP 9-1-163-8 and PET 2-7-1 A x ARM 239 (oil yield) additive gene action is found to be significant. These traits can be improved through simple selection processes in passing generations to accumulate the positive alleles to develop in the form of inbred. In the present study gene action differed cross wise and also character to character. Since the parents involved were differing, thus the gene action controlled the traits also differ significantly.

**Key words :** Additive, Epistasis, Generation mean, Gene effects, Joint scaling.