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**ABSTRACTS**

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## Response of Sorghum Heterotic Hybrids and Their Parents to Water Stress

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Sorghum hybrids are generally considered drought resistant based on their yield performance in multilocation trials. Such a conclusion could be based on the phenology which enables hybrids to complete their life cycle instead of physiologically important traits. A short duration hybrid CSH-6 and a long duration hybrid CSH-9 having one common male parent, and their female parents were used in the present study.

Both 1986 and 1987 happened to be years of severe drought when water stress developed during growth and post-anthesis period. Only CSH-6 and its female parent 2219 B produced seeds, while CSH-9 and its parents failed to have panicle emergence due to water stress. Pressure-volume curves of hybrids and their parents were drawn using excised leaves from the vegetative and post-anthesis stages. Hybrids followed one of the parents in water relations. They also exhibited similar characteristics in recovery from water stress as one of their parents.

Better field performance of CSH-6 was essentially due to its phenology. A line tester system involving three female and seven male parents showed that their  $F_1$  hybrids generally followed the male parent in differentiation and the female parent for the duration of panicle development. Thus, depending upon rainfall characteristics and probable periods of drought, it should be possible to breed phenologically and physiologically adaptable hybrids.

**Genotypic Variability in Groundnuts for Drought Tolerance -  
Scope for Improvement.**

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Groundnut genotypes, with better performance under drought conditions, have been indentified at ICRISAT Center, using Line-source sprinkler technique.

When drought occurred during end of season, the genotypic yield potential (under non stress conditions) accounted for most of the variability in genotypic sensitivity to drought. Under mid-season drought conditions genotypic sensitivity to drought and yield potential were not related, indicating a possibility of selecting genotypes with high yield potential and low sensitivity to mid-season droughts.

Detailed physiological investigations into mechanisms of drought tolerance indicated genotypic variability for partitioning of dry matter to pod, followed by water use efficiency and water use under drought conditions.