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Correlation and path coefficient analysis on seed yield in sunflower

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An investigation was undertaken to assess the correlations among yield related characters of sunflower and to verify their direct and indirect effects which will be used for the selection for seed yield. 48 hybrids, 16 parents and four checks were laid in a randomized block design with two replications. Twelve characters were collected and analyzed for correlations and path coefficients. The results showed that the seed yield per hectare was strongly correlated with the seed yield per plant, head diameter, plant height and test weight. Positive correlations were found between seed yield per plant with oil content, head diameter, plant height and test weight and also between oil content with plant height. A highly negative correlation found between percent disease index (PDI) at 45, 60 and 75 days after sowing with seed yield per hectare, head diameter, days to 50% flowering and days to maturity. The seed yield per plant showed the highest positive direct effect on seed yield per hectare followed by the head diameter. For *Alternaria* disease reaction, percent disease index (PDI) at 45, 60 and 75 days after sowing exhibited negative direct effects. Beside this, oil content, plant height and days to 50% flowering also exhibited negative direct effects. In addition, indirect effects of most characters were high through seed yield per plant and head diameter. Therefore, seed yield per plant and head diameter should be used in the selection for seed yield in sunflower.

Biography

Venkata R Prakash Reddy completed his M.Sc. at the age of 24 years from University of Agricultural Sciences, Dharwad under the guidance of Dr. H. L. Nadaf. In M.Sc. he worked on Genetic analysis of seed yield and its component traits and Resistance to *Alternaria* blight in sunflower (*Helianthus annuus* L.). Now he is doing Ph.D. on Molecular mapping of culm strength related QTLs in rice in Acharya N. G. Ranga Agricultural University, Hyderabad.

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Identification of sex-specific molecular and biochemical markers in nutmeg (*Myristica fragrans* Houtt.)

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The mechanism of sex determination in dioecious species of the nutmeg (*Myristicaceae*) has not been determined. This paper reports the discovery of a female-specific DNA fragment in the diploid dioecious species *M. fragrans* (Nutmeg). DNA samples extracted individually from five male and five female plants were bulked by sex. Random amplified polymorphic DNA (RAPD) fragments were generated in the two bulks in order to identify markers that were polymorphic between male and female plants. A total of 67 decamer primers were tested. A 1100 base-pair (bp) female-specific DNA fragment generated with the OPK 01 primer was identified. The fragment was cloned and partially sequenced and 24-mer SCAR primers (SP1) that exclusively amplified this fragment were constructed. When 5 male, 5 female plants, and four occasional fruiting males were tested individually, the female-specific 300-bp DNA fragment was present in all female plants and in the one occasional fruiting male and was absent in all male plants. Accuracy of SCAR primer SP1 to distinguish male, female and occasional fruiting male has to be done with more samples. This SCAR marker proved to be suitable for precise and rapid identification of female plants in the early stages for breeding programs. In biochemical work, isozyme analysis was done by using four male and five female tree leaf samples. Polyacrylamide gel electrophoresis (PAGE) was standardised for standard protein (BSA) and nutmeg leaf sample using BIO-RAD protocol. Acid phosphatase not recorded any polymorphism for male and female leaf samples. Glutamate oxaloacetate transaminase (GOT) showed low intensity polymorphic band in females.

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