



RESEARCH ARTICLE

Evaluation of promising groundnut genotypes for yield and their reaction to leaf spot diseases in North coastal zone of Andhra Pradesh

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ARTICLE INFO

Received : 22.07.2012

Revised : 08.08.2012

Accepted : 29.08.2012

Key Words :

Groundnut genotypes,
Yield, Early leaf spot,
Late leaf spot,
Resistance

ABSTRACT

Field trials were conducted at Agricultural Research Station, Amadalavalasa for three consecutive *Kharif* seasons of 2009-2010, 2010-2011 and 2011-2012 to evaluate sixteen promising genotypes (inclusive of Abhaya as check) for yield and their reaction to early and late leaf spots under natural (unprotected) conditions in Randomized Block Design (RBD) with three replications of 20 sq.m. plot. Observations on dry pod yield, shelling per cent and dry haulm yield were recorded after harvesting. Early leaf spot and late leaf spot observations were recorded from natural initiation of disease up to harvest at 20 days interval and genotypes were categorized based on 1-9 scale. Significantly highest average dry pod yield and shelling per cent was recorded in FDR 79 (1860.53 kg/ha and 68.50%) and TCGS 894 (1804.53 kg/ha and 67.56%). Out of 16 genotypes evaluated for their reaction to leaf spot diseases, early leaf spot disease was recorded in the range of 6.83 per cent (FDR-79) during *Kharif* 2009-2010 up to 51.9 per cent (DRT 43) during *Kharif*-2010-2011. FDR-79 has resistant reaction to early leaf spot for three consecutive years with severities of 6.83, 9.48 and 8.95 per cent during 2009-2010, 2010-2011 and 2011-2012, respectively, mean severity was also observed to be lowest (8.42%), hence, the entry has resistant reaction to early leaf spot among the genotypes evaluated under natural field conditions. Late leaf spot was observed in the range of 10.00 per cent (FDR-79) during *Kharif*-2011-2012 up to 48.00 per cent (TCGS 983) during 2011-2012 and none of the entries was resistant to late leaf spot. FDR 79 and TCGS 894 were found to be superior and suitable genotypes for North coastal zone of Andhra Pradesh.

How to view point the article : Kumar, V. Manoj, Harisatyanarayana, N. and Kumar, K. Madhu (2012). Evaluation of promising groundnut genotypes for yield and their reaction to leaf spot diseases in North coastal zone of Andhra Pradesh. *Internat. J. Plant Protec.*, 5(2) : 319-323.

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INTRODUCTION

Groundnut is gaining popularity among North coastal zone farming community of Andhra Pradesh in the recent past and is being cultivated extensively in *Kharif* season in an acreage 45000 ha. with yield of 49000 MT and with productivity of 1076 kg/ha (Anonymous, 2010-11). High yielding, pest and disease resistant and adoptable varieties are very much needed in the present scenario. Among the biotic production constraints, diseases are quite important

constraints in groundnut crop from sowing to harvesting. Early leaf spot caused by *Cercospora arachidicola* Hori and late leaf spot caused by *Phaeoisariopsis personata* (Berk. and Curt.) v. Arx are important among diseases and often result in severe defoliation which is ignorantly linked to maturity by farmers resulting in almost 80 per cent of the leaves on groundnut plants are defoliated due to combined attack of *Cercospora* leaf spot diseases (Ize *et al.*, 2007). Hence an attempt was made to evaluate the selective promising genotypes from Kadiri and Tirupathi ground nut research