

**PHENOTYPIC SCREENING AND MOLECULAR CHARACTERIZATION OF
CHICKPEA GENOTYPES AGAINST FOUR DIFFERENT RACES
OF *FUSARIUM* WILT**

KIRTI RANI¹ & ANJU ARORA²

¹Division of Genetics, Indian Agricultural Research Institute (IARI), New Delhi, India

²Department of Genetics and Plant Breeding, Govind Ballabh Pant University of Agriculture & Technology,
Pantnagar, Uttarakhand, India

ABSTRACT

The present investigation was undertaken for phenotypic evaluation of six genotypes of chickpea viz. PG043, HC1, DCP92-3, GNG1581, PKG024 and PG071 for resistance to four Foc races (1, 2, 4 and 6) of chickpea wilt pathogen and their molecular characterization. Eight markers viz. four microsatellite based markers (TA110, TA59, TA96 and TA27) linked to resistance allele, 2 RAPD markers: UBC-170 and A₀₇C₄₁₇, 1 SCAR marker: CS₂₇A₇₀₀ and 1 ISSR marker: UBC-825 linked to susceptibility, that have been already validated in diverse genetic backgrounds were taken for molecular screening. Amplified allele size for resistance and susceptibility obtained by each primer-genotype combination, were recorded. Genotypes PG043, GNG1581 and PG071 were found to be resistant for three races 1, 2 and 4, while PKG024 was found to be susceptible after phenotypic screening and molecular characterization with all the linked markers. The use of the sorted wilt resistant genotypes can make available ample prospect in MAS breeding of chickpea.

KEYWORDS: Artificial Screening, Chickpea, Fusarium wilt, Molecular Markers, Resistance