VALIDATION OF FIELD RESISTANCE TO LATE LEAF SPOT BY USING A MOLECULAR MARKER IN GROUNDNUT

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Groundnut or peanut (*Arachis hypogaea* L.) is an important oilseed crop which is valued as a rich source of high quality edible oil, protein, minerals and vitamins. It offers nutritional and economic benefits to the consumers and farmers, respectively. However there are many biotic and abiotic constraints to groundnut production in various eco-agricultural systems. The late leaf spot (LLS) is one of the most widespread and damaging foliar diseases of groundnut and it can reduce pod and fodder yields to an extent of over 50%, also affects adversely quality of seeds. Much of the global groundnut breeding efforts therefore have been directed to develop cultivars with high yields and also incorporating genes conferring resistance or tolerance to LLS disease. Integration of molecular marker aided selection with field based breeding is important to enhance the precision and speed of developing peanut cultivars with LLS resistance. In this perspective, many LLS resistance-related molecular markers have been developed to aid in the selection processes. The SSR marker, PM 384, is one of these markers and showed significant association with LLS resistance (Shoba et al. 2012, Euphytica, 188:265-272). The groundnut collection including 39 genotypes was employed for validating LLS resistance-linked marker (PM 384) and identifying resistant individuals. These genotypes were evaluated in the field with nine point disease scale to screen the genotypes for sources of resistance to LLS. Plants with a disease score of 1-3 and 6-9 were designated as being resistant and susceptible, respectively. After field evaluation, field scored genotypes were validated by LLS resistance using the linked marker, PM 384.

Keywords: Marker-assisted selection, selection, peanut, molecular markers, foliar disease