Reaction of Rice Genotypes to False Smut with Reference to the Host Factors Favouring the Disease

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ABSTRACT

An experiment was conducted with 16 rice genotypes to evaluate their reaction to false smut disease and to identify the host factors that contribute to false smut infection by path coefficient analysis during *kharif* 2014-15. Per cent rice false smut incidence was assessed hill-wise, panicle-wise and grain-wise. The rice false smut (rfs) incidence significantly varied among the genotypes when rice false smut incidence was recorded hill-wise and grain-wise but not panicle-wise. The least grain-wise disease incidence (0.02%) was observed in NP 9381 and MTU 1061 genotypes while the highest was in MTU 1075 (0.286%). Symptom expression varied among the genotypes screened for false smut. The smut balls of NLR 34449, RNR 15048 and MTU 1010 were dark green in colour, smut balls were initially yellow, later they transformed into dark green in MTU 1121 and NP 9381, infected grains showed black colour powdery mass in some of the genotypes like NLR 3041, WGL 283, JGL 384, JGL 19621, MTU 1081, JGL 20171 and JGL 11470 and yellow colour smut balls were observed in genotypes of MTU 1071, MTU 1061, MTU 4870 and MTU 1075. Plant height was found to be significantly and positively associated with rfs incidence while five traits *viz*., boot leaf length, boot leaf breadth, grain length, test weight and grains/panicle recorded non-significant positive association whereas productive tillers and grain breadth recorded negative association when rfs incidence was recorded grain-wise. Plant height in addition to chaffiness and chaffy grains/panicle had not only a positive significant correlation but also a direct positive (0.0914) effect along with the highest positive indirect effects *via* boot leaf length (0.0475) indicating that these two traits could be considered as indicatives for false smut proneness in rice genotypes. The residual effects in path coefficient analysis were the least in grain-wise disease assessment than hill-wise and panicle-wise and hence grain-wise estimation of false smut incidence on rice genotypes is more reliable.

Key words : False smut, Host factors and Rice genotypes.