

Management of Tip Burn of Potato for Successful Hybridization in Nepal

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Abstract

Potato hybridization is an important method of combining the characters of genetically diverse parents harboring suboptimal alleles to obtain hybrid offspring with increased vigor and yield. Organized potato hybridization work was initiated at the National Potato Research Program (NPRP), Khumaltar, Lalitpur, under the Nepal Agricultural Research Council (NARC) in 2001. The major objectives of potato hybridization were to develop varieties with high yield potential, red skin, and disease and pest resistance. Khumal Bikash was the first variety released in 2018 from the first cross in 2001 after multiple years of trials for late blight resistance, higher yield, and stability test for red skin since 2003. Several biotic and abiotic constraints were encountered during hybridization. Dark green to brown upper leaves with mosaics, necrosis of leaf tips, and margins of young developing leaves was observed during years of cloudy and damp weather with windy conditions followed by higher temperature and bright sunshine. This problem was more pronounced from late August to early September which led to the complete failure of the hybridization program. On the basis of the symptoms and their recovery, we concluded this problem as the “tip burn” of potato. Tip burn of potato is a non-pathological problem triggered by water stress. This poster illustrates the possible cause of tip burn of potato and its management options particularly through regulated water management for a successful hybridization program in Nepal.

Keywords: Leaf burning, Moisture stress, Temperature, Transpiration