Gene action analysis of resistance to rice yellow mottle virus disease in interspecific and intraspecific rice genotypes

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Rwanda Agriculture Board is a government institution with the National mandate to conduct scientific and technical development of agricultural and animal resources in Rwanda to improve the livelihoods of low income farmers. Within the institute, research has continued to be implemented with stronger synergies existing between research and extension to ensure that developed technologies are disseminated to the end users. RAB is committed to intensification of research activities for the development of efficient, effective and sustainable agriculture systems in crop cultivation and animal husbandry.

Objectives:
To determine the mode of gene action for resistance to Rice yellow mottle virus disease of selected genotypes

Methods:
Using full diallel to produce F1’s families. Advance F1’s to F2’s by selfing. Evaluate F2’s + Parents for resistance to Rice yellow mottle virus under screen house conditions using alpha lattice design, 2 replications

Expected outputs from the project:
To generate information that should enhance the genetic understanding of rice materials in the Ugandan current available germplasm, thus improving breeding strategies for Rice yellow mottle virus resistance. Through this information, the introgression of genes of resistance into susceptible varieties should be efficient.

Impact of the outputs on agriculture in Africa:
Rice yellow mottle virus disease is confined to the African continent and causes the most damage of all the pathogens known to attack rice. The use of resistant varieties was shown to be the most effective control of the disease. The results from the current study will contribute in development of resistant varieties and improving the preferred African landraces but most susceptible to the disease. By this, the rice production should increase and Africa produces sufficient rice for domestic consumption and even for export.