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Effects of bean seed treatment to the imidacloprid-gaucho on the Bean Stem Maggot, the Black Bean Aphids attacks and the Bean Common Mosaic Virus transmission

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ABSTRACT: The common bean (*Phaseolus vulgaris L.*) is one of the principal food crops of Rwanda. It is cultivated by 97% of the farms and constitutes the principal source of proteins for the majority of the Rwandan population. One observes since 2000 a considerable reduction in the bean outputs; among the principal causes, one can quote the transmitted diseases and damage caused by insects.

In order to contribute to the production of healthy seeds and plant of bean, a test was carried out (February-May 2009) to the station of Rubilizi-ISAE Busogo, from which the objective was to protect the plants of bean against the attacks of insects during the first 8 weeks by coating the seeds with the imidacloprod-gaucho in order to avoid the viral diseases on the plants which result from these seeds and to also thwart the attacks of the principal devastating insects of the bean among which there were the black bean aphid (BBA), *Aphis fabae*, vector of bean common mosaic virus and the bean stem maggot (BSM), *Ophiomyia spp*. Three doses of imidaclopridgaucho were compared to the control, namely 2, 4 and 6g of active matter per kilo of seeds. The results made possible to draw the following conclusions:

- the imidacloprid expressed its effects up to eight weeks after sowing; indeed one recorded few close Bean Common Mosaic Virus-attacked plants (less than 3%) until 56 days after sowing; the percentage of virus attacked plant increased beyond to reach 42% for the dose of 2g of imidacloprid per kilo of seeds and only 25% maximum for 4 and 6g of the insecticide product per kilo of seeds;
- the imidacloprid allowed also to control the Bean Stem Maggot in the proportion of 58%, 44%, 22% and 18% respectively for the control (0 g), 2, 4, and 6 g of the product per kg of seeds.

Within the sight of these results, we can recommend the producers, the pelleting of bean seeds to the dose 4g of imidacloprid-gaucho per kilo of seeds within the framework of the integrated pest management (IPM) against the common mosaic and the damage of Black Bean Aphids and Bean Stem Maggots.

Key words: *Imidacloprid-Gaucho, Black bean aphid, Bean stem maggot, Bean common mosaic virus, Integrated pest management.*