A Revised Protocol for The Evaluation of the Efficacy of Insect Pest Control Products Using Bioassays in Kenya

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ABSTRACT

Agriculture, including livestock production form the major economic mainstay in Kenya. Vector borne diseases however reduce the productivity of these cattle, goats, sheep and camels. Use of pesticides remain a principle method of disease management. There in need to provide alternative pest control products to the farmers. Use of all pesticides is regulated in Kenya, and novel products require assessment of their efficacy for the particular before they are availed in the market for use. Initial protocols for efficacy trial involved large scale field trials of both the test product and positive and negative controls carried out over at least one year. Promoter companies considered the cost of these trials prohibitive, moreover they escalated the price of products in the market and could not therefore be afforded by the livestock farmer. The protocol was revised from a full blown trial to bio-efficacy trials carried out in a pestiferous area. These reduced the costs by up to 60%. Field costs of efficacy trials were further reduced by carrying out a rapid efficacy appraisal in the laboratory for a period of up to two weeks. Only insecticides that showed promise at this stage were delivered to the field and subjected to the natural pest environment. It is now realized that not all pest species are available for the laboratory phase. This phase can be avoided by first stringently executing the same protocol under natural field conditions for up to two weeks. Data obtained is then fully analysed for the efficacy of the test products. Based on these results, a recommendation is provided to for promising candidate insecticides to proceed and scale up the field trial for seasonal variations, or terminate trials for non-efficacious products. This protocol is friendly to the economics of scale for the promoter companies while the concise duration of field trial allows evaluation of a variety of potential products. Eventually this protocol is expected to translate to the farmer having a choice of products for use with minimal monopoly.

Keywords: Pest Control Product, Pesticide Use, Bio-Efficacy Trials, Protocols.

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