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Current challenges for pesticidal plants studies and promotion in Burkina Faso

The current use of synthetic pesticides in the world has been described as problematic. The negative harmful effects on animal and plant biodiversity with in addition pollution by synthetic pesticides formulations to target agricultural pests have created the need for alternatives for safer and more environmentally friendly substitutes. In the context of agricultural pest management, biopesticides are particularly attractive alternative because they are believed to be less toxic, present short environmental persistence and limit development of pest resistance.

Plants based formulations are produced in the form of isolated substances or complex mixtures, used by farmers and few ones are commercialized. They are used as repellents, nematicides, insecticides, fungicides and bactericides. Despite the growing need for natural pest management, plant biopesticides represent less than 1% of total pesticide use.

In Burkina Faso, important activities of NGOs, producers and many women associations are oriented to promote organic agriculture. It should be noted that the use of plant extracts in pesticidal formulations face many challenges.

To produce botanical pesticides on a commercial scale, it is necessary to obtain large quantities of the source plant, which requires large-scale production. Some limitations still contribute to the lack of commercialization of botanical pesticides. Most of the plants used for production of botanical pesticides are not yet cultivated for commercial purpose, making biomass available at low cost. Researchers must operate strategic selection of plants between various interesting species.

The identification of active molecules responsible for the effectiveness of the extract is done through a complexity of plant extracts containing many compounds. The standardisation of formulations is difficult due to variability and heterogeneity of extracts. The identification of an active ingredient must be done in correlation of identified target pest and with a mode of action.

During the communication, examples of strategies and results from our research work on botanical pesticides will be shown. Information concerns various plants selection with efficiency and sustainability criteria, extraction modes, phytochemical analysis, biological studies, interaction with farmers, fields tests done to provide evidence of biological activities and applicability of laboratory results.