Tropentag, September 17-19, 2018, Ghent

"Global food security and food safety:
The role of universities"

Assessment of the Sensitivity of *Escherichia coli* to Crude Extracts of Medicinal Plants in Rwanda

Faustin Nkubito

Institute of High Education Ruhengeri (INES-Ruhengeri), Biotechnologies, Rwanda

Abstract

In developing Countries like Rwanda, Traditional medicine is used to complement the Modern one for Health protection. In my Country, Rwanda, many Traditional Healers prefer leaves to other organs (roots, grains, steams, fruits, flowers) of the plant to treat a lot of diseases;

Knowing, however, that the secondary substances (= active principles) responsible for the cure of these diseases, can be found as well in the leaves as in the other organs of the plant (roots, stems, flowers, fruits and grains) according to their nature and plant species;

We have targeted some Rwandese known medicinal plants namely *Guizotia scabra* (Igishikashike), *Urtica massaica* (*Igisura*), *Maesa lanceolata* (*Umuhanga*), *Erythrina abyssinica* (*Igiko/Umuko*) from which we extracted the active principles, organ by organ. The extracts obtained were tested on *E. coli* as bacterium found in the environment, foods, and intestines of people and animals and can cause diarrhea, while others cause urinary tract. in order to evaluate its relative sensitivity with respect to these different extracts.

The results obtained showed that:

- Bioactive substances (= active principles) are distributed differently in the various organs of the plant;

- Some plants contain bioactive substances in all their organs, at various proportions, whereas in other plants, these bioactive substances are found in some organs and not in others; this is the case, for example, of Urtica massaïca, which does not contain active principles against E. coli in the leaves, whereas it is found in the flowers, stems and roots.

- The concentration of bioactive substances in various organs of the plant varies according to the species but also according to the organ considered. This is how MIVs vary from one organ to another and from one plant to another, although some similarities can be observed here and there.

The conclusion is that the secondary substances are distributed differently in the various organs of the plant and that their concentration varies according to the plant and the organ considered.

Keywords: Active principles, bioactive substances, *Erythrina abyssinica*, *Guizotia scabra*, *Maesa lanceolata*, traditional healers, *Urtica massaica*

Contact Address: Faustin Nkubito, Institute of High Education Ruhengeri (INES-Ruhengeri), Biotechnologies, Musanze, Rwanda, e-mail: nkubitofau@yahoo.fr