République de Côte d'Ivoire

CENTRE D'EXCELLENCE AFRICAIN

sur le Changement Climatique, la Biodiversité et l'Agriculture Durable

3ème CONFÉRENCE INTERNATIONALE SUR LES PLANTES PESTICIDES

(Conférence Hybride)

Livre des résumés

THEME

Promouvoir les plantes pesticides pour une agriculture durable et un environnement sain

25, 26, 27, 28 et 29 juillet 2022

Yamoussoukro (Fondation Félix Houphouët-Boigny pour la recherche de la paix)

3 _ *Valorisation et impact socio-économique des plantes pesticide*

8317 | USING A PESTICIDAL PLANT REQUIRES MANAGING KNOWLEDGE-INTENSIVE INPUTS

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One way to reduce the use of synthetic chemical pesticides and antibiotics is to replace them with plants possessing such properties. While many species have been identified for animal, plant and human health, observations show that some species are predominantly used for one or more of these health purposes, such as neem (*Azadirachta indica*, Meliaceae). As for synthetic products, the excessive or incorrect use of these plants presents a risk of harmful toxicity for humans and their environment.

To limit this risk, we create a Knowledge Based System (KBS) named Knomana. This software system allows to explore knowledge bases in order to generate new knowledge, using Artificial Intelligence methods. In September 2021, Knomana contained 46300 descriptions of plant uses in experimental conditions or common practices, related to 81 countries, and extracted from 462 scientific articles. In total, 2540 plant species are listed to protect a hundred organisms (crops, aquatic or terrestrial animals, humans) against 216 species of organisms (Bacteria, Chromista, Eukaryota, Fungi, Insecta, and Viruses). The financial development support of the Artificial Intelligence methods for Knomana is provided by the Digital Agriculture Convergence Lab (https://www.hdigitag.fr/) and the project SmartFCA (ANR-21-CE23-0023/). The project Santés-Territoires (https://santes-territoires.org), recently launched in Senegal, will build transdisciplinary plant selection criteria considering, among others, active ingredients, toxicity on human being, and impact on biodiversity. Thanks to these criteria, Knomana will propose local plants as alternatives to pesticides, antibiotics, and the most predominantly used plants. This work contributes to the enhancement of the biodiversity.

Pestical plant valorization, Knowledge management, Artificial intelligence, Toxicity, Knowledge bases, animal health, plant health, human health

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