

# BOOK OF ABSTRACTS

THE 5<sup>TH</sup> WEST AFRICAN ORGANIC CONFERENCE

*Organic Agriculture: life for all*



UNIVERSITY OF GHANA

LEGON - ACCRA

12<sup>TH</sup> - 15<sup>TH</sup> NOVEMBER, 2019



# Forward

The increasing world population obviously calls for an expansion of agriculture to produce more food and fibre for its people. However, attention should not be on producing more food only but rather safe food of the highest quality and nutritious for the wellbeing of mankind and must be produced in a manner that does not destroy or impact negatively on the ecosystem and the environment which supports life.

Therefore, the theme for this year's West African Organic Conference (WAOC) 'Organic Agriculture: Life for All' is very cogent as it's the only production system that is based on sound principles of health, ecology, fairness and care which promotes the life of humans, other living things and the environment in which life thrives as well as the interaction between the living and non-living things.

These core principles are the pivot on which Organic Agriculture (OA) grows and develops and expresses the contribution of OA to the world. The aim of these OA principles is both to inspire the organic movement and to describe the purpose of OA to the wider world.

The 5th WAOC at the University of Ghana offers the opportunity of all relevant stakeholders (Farmers, Farmer Based Organisations, Producers and Marketers, Academia, Government Institutions, Non-Governmental Organizations, Industry Players, etc.) from **West Africa and beyond** to deliberate on different aspects of OA under the Scientific and Farmers Tracks to **promote OA as the only choice to guarantee life for all**.

About 300 participants are expected to attend the conference with over 80 speakers addressing different topics in OA. Presentations have been grouped into a three-days interactive sections. Day 1 is the **Scientific Research** which will address issues on Health and Nutrition, Farming and

its Impact on Life, Stakeholders, Value Chains and Climate Change. Day 2 will discuss **Policies and Markets** - Local Trade Markets, International Trade Markets, Government Strategies and Policies. Day 3 - **Farmers Innovation** will discuss Inputs, Crop Production, Innovative Technologies, Soil Fertility, Livestock and Information Sharing.

The relevance of all presentations and discussions in **promoting OA in West Africa** will be emphasised as well as its **global significance**. Thus, the presentations at the conference will contribute to the realisation of the **Aspiration 1** of the African Union (AU) **Development Agenda 2063** which seeks to build a **prosperous Africa based on inclusive growth and sustainable development**. This meeting will also contribute to the fulfilment of some specific targets of the **United Nations (UN) Sustainable Development Goals (SDGs)**, focusing on Goal 3 (Good Health and Wellbeing), Goal 12 (Responsible Consumption and Production), **Goal 14 (Life Below Water) and Goal 15 (Life on Land)**.

The abstracts compiled in the book of abstracts offers a summary of all the topics and presentation that collectively help fulfil and address the theme of the conference and some aspects of the AU Development Agenda 2063 and UN SDGs. We are very grateful to GIZ, Agro-Eco, the Ministry of Food and Agriculture, the Local Organising Committee and the Ecological Organic Agriculture Platform-Ghana and other partners that have supported this conference.

You are all welcome to Ghana. Enjoy the serene environment of the conference venue, the Premier University of Ghana, and the warm Ghanaian hospitality. **Welcome! Akwaaba!**

By Dr. Ken Okwaa-Fening

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## 12. Application of liquid and solid organic fertilizers for ameliorating cowpea aphid-borne mosaic virus disease in cowpea

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### Abstract

Cowpea (*Vigna unguiculata* L. Walp) is a major source of dietary protein in most African traditional households and also helps to replenish soil fertility. In spite of its vital role in reducing malnutrition, cowpea production is threatened by a wide range of virus diseases. This study was conducted to determine the effectiveness of liquid and solid organic fertilizers in the management of *Cowpea aphid-borne mosaic virus* (CABMV). The experiment was laid out in a completely randomised design with five replications. The seeds of virus-susceptible cowpea variety 'Ife Brown' were sown in plastic pots containing heat-sterilized soil. Treatments evaluated were uninfected non-fertilized, virus-infected + liquid organic fertilizer, virus-infected + solid organic fertilizer, and unfertilized virus-infected. Seedlings were infected with CABMV inoculum at 10 days after sowing. Disease incidence and severity, growth and seed weight were recorded. At 5 weeks after sowing uninfected non-fertilized plants were consistently symptomless. Conversely, 100% disease incidence was encountered in unfertilized virus-infected plants. Significantly lower disease incidence (40.5%) was found in the virus-infected plants treated with liquid organic fertilizer than virus-infected plants treated with solid organic fertilizer (67.5%). Disease severity varied significantly between 1 and 5, in an increasing severity. A mean severity score of 2.3 was observed in the virus-infected plants treated with liquid organic fertilizer, which was significantly lower than a score of 3 observed in the virus-infected plants treated with solid organic fertilizer. Virus-infected plants treated with liquid organic fertilizer exhibited the highest seed weight (5.1 g), which was significantly higher than 3.2 g observed in the virus-infected plants treated with solid organic fertilizer. Unfertilized virus-infected plants had 2.2g seed weight while the lowest came from unfertilized virus-infected (0.9 g). Therefore, application of liquid and solid organic fertilizers is recommended to suppress symptom expression and yield losses in cowpea fields that are prone to CABMV infection.

**Keywords:** CABMV; Cowpea; Disease incidence; Disease severity; Liquid and solid organic fertilizers.