

3rd INTERNATIONAL CONFERENCE ON NUTRACEUTICALS AND FOOD SCIENCE

NOVEMBER 16-17, 2023 | Dubai, UAE

TITLE: Introducing Biofertilizers as an Alternative Source of Chemical Fertilizers to Improve Legume Productivity and Food Insecurity in Ethiopia

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ABSTRACT (upto 300 words)

Global demand for biofertilizers to replace chemical fertilizers and pesticides has gradually increased in response to actual climate change in order to boost crop productivity for food security and create a safe environment for people to live in. Ethiopia's current food security status, chemical fertilizer consumption in relation to legume crop productivity, the introduction of biofertilizer to replace artificial fertilizer and pesticides, biofertilizer types and effective strains, and the benefits and limitations of biofertilizers are all thoroughly investigated. The data for the graphs and tables came from the FAOSTAT online database, the Ethiopian Central Statistical Agency, and published journal articles. All facts recommend adopting this mandatory practice of organic farming. Increased legume productivity in recent seasons in Ethiopia is promising compared to other African and East African countries. Indeed, today the consumption of nitrogen, phosphorus and potassium fertilizers, from 12 kg/ha in 1996 to 36.2 kg/ha in 2021, has increased significantly. Africa is too late to start biofertilizer production and utilization, but some projects, such as N2Africa, the CGIAR center ICRISAT, and others devoted to making a difference in developing countries such as Ethiopia, are encouraging. Several studies in Ethiopia showed improvements in growth, grain yield, yield components and nodulation of legumes inoculated with different strains of Bradyrhizobium bacteria. Necessary synergies with Ethiopian and African stakeholders such as universities, national and international research centers, local and central government agencies, farmers, NGOs and investors are essential to extend results to farmers and end-users. After putting together this report, I thought about the urgency of food security in Ethiopia and the need for sufficient food production, and said that biofertilizers and chemical fertilizers can be integrated and gradually replaced with bio-fertilizers.

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BIOGRAPHY (upto 200 words)

Tessema Tesfaye Atumo is a PhD scholar at Hawassa University, Ethiopia. He has been a researcher of food and feed crops in response to climate change and has about fifteen journal articles, one book chapter, five guidelines, 8 proceedings and also developed high yielding quality forage oats. Fifteen journal articles have been cited 49 times, and his publication hi-index is 5. He has been serving as an editorial board member of Agronomy journal and has seven verified peer reviews

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