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Shango, Abdul

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Advances and trends in ecological organic agriculture (EOA) technologies and research on fruit vegetables produced in Tanzania

Abdul Shango, Philip Maswi, Rashid Malya, Janet Maro, Rehema Mwaipopo, Ramadhani Majubwa, Ramadhan Kilewa, Mashamba Philipo

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Abstract

Ecological organic agriculture (EOA) is a holistic production management system that can solve many problems in the vegetable crops' value chain (VC). It is, however, unclear about the EOA technologies for the fruit vegetable VC that have already been validated or are in process of validation in Tanzania. A systematic literature search on EOA technologies relevant in Tanzania was conducted for research articles from 2010 until 2021. Most 10(30.4%) studies on fruit vegetables were equally distributed each 5(15.2%) in the years 2019 and 2020, respectively. A total of 33 records on fruit vegetables covered eight (8) regions of mainland Tanzania and one (1) region from the island of Zanzibar. Most 18(55%) studies were conducted in the Morogoro region. Based on the fruit vegetable VC, 26(68.4%) studies were for field establishment and management. Nine (9) key areas were identified, where most 9(27.3%) studies were on crop productivity and protection. Seventeen (17) EOA technologies were applied in fruit vegetables, mostly biocontrol 7(21%) in tomatoes. Overall, 27(81.8%) studies only researched the EOA technologies, while 3(9.1%) studies validated the EOA technologies, 2(6.1%) researches were in progress, and 1(3.0%) was progressing validation. Few 3(9.1%) studies portrayed the involvement of youth and women using the principles of participatory action research (PAR) during the validation. Generally, the EOA technologies are readily available, require minimal skills and labour, are cost-effective, sustainable, easily implementable in the fruit vegetable VC and can be simply accessed and utilized in cultivating organic fruit vegetables.