

FACULTY OF AGRICULTURE AND ANIMAL SCIENCE

DEPARTMENT OF AGRIBUSINESS AND EXTENSION

ASSESSING THE LEVELS OF ADOPTION OF GOOD AGRONOMIC PRACTICES FOR
PASSION FRUIT PRODUCTION IN UGANDA: CASE STUDY OF NAZIGO SUB COUNTY
IN KAYUNGA DISTRICT

BY

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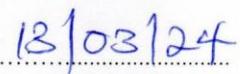
DECLARATION

I WANYAMA JOHN BOSCO declare that the work in this research report is my own and it has not been submitted by any other award of degree in any other university.

Signed



WANYAMA JOHN BOSCO

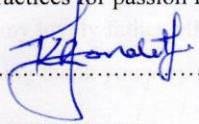


DATE

APPROVAL

This is to certify that this research report, which assesses the levels of adoption of good agronomic practices for passion fruit production, has been compiled under my supervision.

Sign



Date.....



RESEARCH SUPERVISOR

DR. RONALD KABBIRI

DEDICATION.

This report is dedicated to my dear supervisor DR.RONALD KABBIRI who has been a constant source of support and encouragement. I am truly thankful for having you in my life and it is also dedicated to my lovely father MR; WANYAMA JOHN BOSCO for supporting me in whatever I have been doing thank you very much.

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ABSTRACT.

Passion fruit (*Passiflora edulis*) cultivation plays a pivotal role in various aspects including economic, medicinal, nutritional, and environmental spheres globally. Originating from Brazil, passion fruit farming has extended to tropical and subtropical regions worldwide. In Uganda, particularly in Nazigo sub-county, Kayunga district, passion fruit farming significantly contributes to the horticultural sector, driving economic growth and providing employment opportunities.(Dias et al., 2022) Despite its potential, passion fruit production faces challenges in Uganda due to inadequate knowledge and suboptimal adoption of good agronomic practices among farmers. This study aims to assess the factors influencing the adoption of good agronomic practices in passion fruit production specifically in Nazigo sub-county, Kayunga district.(Baird et al., 2003). Through surveys and questionnaires administered to passion fruit farmers, the study finds out the social characteristics of passion fruit farmers, evaluates the impact of farmers' education levels and access to extension services on adoption rates. Findings reveal a male-dominated passion fruit farming community in Nazigo sub-county. Most respondents implement essential agronomic practices such as irrigation management, pest and disease control, pruning techniques, and fertilization practices. However, the impact of extension services on the adoption of good agronomic practices appears to be high, with a significant proportion of respondents reporting high or moderate from existing extension programs.(Baird et al., 2003) The study emphasizes the need for strategic investments in education, extension services, and financial support to foster sustainable agricultural development in the passion fruit farming sector. By leveraging youth energy, promoting collaborative partnerships, and embracing research and innovation, Nazigo sub-county can become a model of excellence in passion fruit farming, driving positive change and prosperity for future generations.

CHAPTER ONE

1. INTRODUCTION

1.1 Background of the study

The origin of passion fruits can be traced back to the American continent. Specifically, the yellow passion fruit (*Passiflora edulis Sims*) is native to the American continent and is grown in countries with tropical and subtropical climates.(He et al., 2020). Among these regions, Brazil stands out as the leading producer of passion fruit in the world. The fruit is cultivated mainly in the Northeast, Southeast, and North regions² of Brazil. In 2019, Brazil's passion fruit production reached 59,342,000 kg, with an average yield of 14,271 kg ha⁻¹. However, there are regional variations in production, with the state of Acre producing 1,096,000 kg, but with an average yield of 8,768 kg ha⁻¹, which is lower than the national average.(DA SILVA et al., 2020). Passion fruit (*Passiflora edulis*) growing and export is one of the critical contributors to the horticultural sector employing over a million small holder farmers in addition to the other players in the value chain.(Tuhaise et al., 2019). Uganda annually earns over US\$ 200,000 from passion fruit exports (Agribusiness Development Centre., 2014; Uganda Export Promotion Board., 2016). In addition to its commercial importance, species of *Passiflora* also have medicinal, nutritional and ornamental value. The demand and potential of passion fruit production is much higher compared to the current production, and this has been attributed to a number of biotic and management-related factors.(Samuel et al., 2019)

Today Kayunga is the leading producer of high quality vanilla in Uganda and 88% population is engaged in production of cassava, matooke (plantains), pineapples, , maize, millet, watermelon, potatoes and passion fruits.(Whitney et al., 2008). In Uganda, passion fruit farming is an important horticultural activity, and farmers' knowledge and adoption of good agronomic practices play a vital role in enhancing production, yield, and fruit quality. Successful passion fruit farmers in Uganda have implemented various best practices, including proper site selection, land preparation, variety selection, planting, spacing, support structures, irrigation, mulching, fertilization, pruning, and pest and disease control.(Tuhaise et al., 2019) However, there are challenges and constraints that hinder optimal passion fruit production in Uganda. Some of these challenges include limited access to information, inadequate training and extension services, lack of financial resources, pest

References

- Aker, J. C. (2011). Dial “A” for agriculture: A review of information and communication technologies for agricultural extension in developing countries. *Agricultural Economics*, 42(6), 631–647. <https://doi.org/10.1111/j.1574-0862.2011.00545.x>
- Bailey, M., Sarkhosh, A., Rezazadeh, A., Anderson, J., Chambers, A., & Crane, J. H. (2021). The Passion Fruit in Florida. *Edis, 2021*(1). <https://doi.org/10.32473/edis-hs1406-2021>
- Baird, S., Maonga, B. B., Assa, M. M., Haraman, E. M. K., Mildred, B. and B. B. M., Bonabana-Wabbi, J., Pearce, J., Kumar, G. D. S., Popat, M. N., Finlayson, J. D., Lawes, R. a, Metcalf, T., Robertson, M. J., Ferris, D., Ewing, M. a, Moser, C. M., Barrett, C. B., Heilman, P., Malone, R. W., ... Division, N. (2003). Assessing Factors Affecting Adoption of Agricultural Technologies: the case of Integrated Pest Management (IPM) in Kumi District, Eastern Uganda. *Journal of Sustainable Development in Africa (Volume, 22(3), 146.* <http://dx.doi.org/10.1016/j.aggsy.2011.10.012%5Cnwww.isdsnet.com>
- Biswas, S., Mishra, R., & Bist, A. S. (2021). Passion to Profession: A review of Passion fruit Processing. *Aptisi Transactions on Technopreneurship (ATT)*, 3(1), 48–56. <https://doi.org/10.34306/att.v3i1.143>
- Bwambale, N. (2015). Farmers’ knowledge, perceptions, and socioeconomic factors influencing decision making for integrated soil fertility management practices in Masaka and Rakai districts, central Uganda. *Paper Knowledge . Toward a Media History of Documents, April*, 49–58.
- Cavalcante, A. G., Cavalcante, L. F., de Luna Souto, A. G., Cavalcante, A. C. P., de Araujo, D. L., do Nascimento, A. P. P., & Zanuncio, J. C. (2020). Physiology and production of yellow passion fruit with hydroabsorbent polymer and different irrigation depths. *Revista Ceres*, 67(5), 365–373. <https://doi.org/10.1590/0034-737X202067050004>
- DA SILVA, N. M., e Souza, L. G. de S., Uchôa, T. L., Neto, S. E. de A., & DA SILVA, S. O. (2020). Profitability of organic passion fruit production using tall seedlings and long root system. *Revista Caatinga*, 33(2), 341–348. <https://doi.org/10.1590/1983-21252020v33n207rc>
- Dias, D. R., de Faria, I. K. B., do Vale, B. S. C., do Vale Santana, J. A., & Salles, J. R. (2022).

- Production of yellow passion fruit seedlings in different irrigation levels and substrate formulations. *Nativa*, 10(1). <https://doi.org/10.31413/nativa.v10i1.12330>
- Eastern, N., & Gravity, S. (n.d.). *Passion Fruit I.*
- He, X., Luan, F., Yang, Y., Wang, Z., Zhao, Z., Fang, J., Wang, M., Zuo, M., & Li, Y. (2020). Passiflora edulis: An Insight Into Current Researches on Phytochemistry and Pharmacology. *Frontiers in Pharmacology*, 11(May), 1–16. <https://doi.org/10.3389/fphar.2020.00617>
- Koriem, K. M. M. (2021). Importance of herba passiflorae in medicinal applications: Review on experimental and clinical pharmacology. *Biointerface Research in Applied Chemistry*, 11(5), 12886–12900. <https://doi.org/10.33263/BRIAC115.1288612900>
- Mwangi. (2016). Agronomic Management of Yellow Passion Fruit Among Farmers in. *Afr.J.Hort.Sci.(Sept.2016)10:1-13*, 10, 1–13.
- Samuel, T., Jesca, L. N., John, A., Kenneth, S., & Andrew, K. (2019). Establishment of a transformation protocol for Ugandas yellow passion fruit using the GUS gene. *African Journal of Biotechnology*, 18(20), 416–425. <https://doi.org/10.5897/ajb2019.16795>
- Tuhaise, S., Nakavuma, J. L., Adriko, J., Ssekatawa, K., & Kiggundu, A. (2019). In vitro regeneration of Ugandan passion fruit cultivars from leaf discs. *BMC Research Notes*, 12(1), 1–7. <https://doi.org/10.1186/s13104-019-4469-8>
- Uchoa, T. L., Neto, S. E. D. A., Francisco, W. D. M., E Souza, L. G. D. S., & Da Silva, N. M. (2021). Yield and quality of passion fruit under organic cultivation with input levels and irrigation in the state of acre. *Revista Caatinga*, 34(1), 144–154. <https://doi.org/10.1590/1983-21252021v34n115rc>
- Viana, A. P., Higino, F., Lima, D., Gonçalves, M., Geraldo, M., Silva, D. M., Ferreira, R. T., Nair, T., & Pereira, S. (2016). UENF Rio Dourado : a new passion fruit cultivar with high yield potential. *Crop Breeding and Applied Biotechnology*, 16, 250–253.
- Wandi, J., & Njeru, W. (2013). *An Evaluation of Access to Information on Passion Fruit Production by Farmers in Keiyo North District , Kenya By Jane Wandi Wanjira Njeru A report presented in partial fulfilment of the degree of Master of Agriculture in Information and Communication Mana.*

Whitney, G. G., Foster, D. R., Bozkurt, Y., Armağan, E., Whitney, G. G., & Foster, D. R. (2008).

Ph.D. Thesis, Central-South University of Technology, China, 76(3), 61–64.