



Decolonization of Indigenous/Traditional Vegetables of the Kingdom of Eswatini and the Southern African Development Community

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Indigenous/traditional vegetables have been used since prehistoric times in the Kingdom of Eswatini. They are well appreciated for their nutritional cultural and medicinal value. However, despite their immense importance the advent of colonisation by the Europeans saw the traditional vegetables being declared weeds and thus undesirable. The situation went from bad to worse with modernization and urbanization. There are no statistics about their economic importance. This study aimed to decolonize, document and deliberate on the importance of traditional vegetables in the Kingdom of Eswatini. The study was a qualitative one. Information was sought, through informal surveys, group discussions and a review of existing literature.

Keywords: Decolonization; traditional vegetables; nutrient-dense; climate-smart; food security; Sustainable Development Goals (SDGs).

1. INTRODUCTION

Indigenous vegetables are those plants that originated in a particular region [1]. While traditional vegetables are plants that have grown in a region for time immemorial [2]. In a way, traditional vegetables have been indigenized in a given region over time [1,2]. In this paper, indigenous and traditional vegetables are used interchangeably. In the case of traditional vegetables, it is the plants or plant parts that are used with the staple which is usually grains or processed grains e.g. maize (*Zea mays*) to give samp which is boiled, or mealie meal which is made into thick porridge [3,4].

Traditional vegetables are important in many ways. They improve livelihoods and provide employment [5]. With employment comes income and allied downstream industries. However, there is a dearth of information on the economic contribution to the gross domestic product (GDP) to not only the Kingdom of Eswatini but to the economies of the region i.e. Southern African Development Community (SADC) [5,6]. The greatest contribution of traditional vegetables to indigenous communities is nutrition at the household level [7]. They are purportedly said to be nutrient-dense. Depending on the species and part eaten traditional vegetables are not good sources of carbohydrates, proteins and/or fats [7,8]. Their immense contribution is through the provision of various vitamins which are vital to human health and they also richly provide minerals that are important in human diets [9,10]. Traditional vegetables provide fiber which is important for the proper functioning of the digestive system and for preventing predisposition of human intestinal and colon cancer [9,10,11]. Aesthetically they provide interesting colour and thus potentially appetizing food. Historically with the coming of European

settlers and colonialism the traditional vegetables were downgraded and regarded as weeds and thus undesirable [12,13,14]. This was in a way dubbed how Europe underdeveloped Africa. Unfortunately, many natives began to regard traditional vegetables as weeds and food for desperately poor people [14,15]. This review study aimed at studying the decolonization of traditional vegetables in both rural and urban areas of Eswatini and SADC as a whole for food security.

2. METHODOLOGY

The study was a qualitative one. Information was sought through informal surveys. Participatory group discussions were held at the training of trainers (TOT) organized by Taiwan Africa Vegetable Initiative (TAVI) at Mananga, Ezulwini from the 1st to the 2nd of November 2021, at Big Bend from the 31st of January to the 1st of February 2022, and at Bethel Court from the 8th to the 9th February 2022. The TOT at Mananga, Ezulwini was held for non-governmental Organisation (NGO) officers. The TOT workshops were held at Big Bend and Bethel Court, Ezulwini for government extension officers. A review of existing literature was carried out.

2.1 Site Description

The study was carried out in the land-locked Kingdom of Eswatini located in Southern Africa and covered the four ecological Zones namely the Highveld, Middleveld, Lowveld and the Lubombo Region (Fig. 1)

3. RESULT AND DISCUSSION

It was found that several traditional vegetables are consumed in the four ecological zones of the

Kingdom of Eswatini. Root vegetables (Table 1) Leafy vegetables (Table 2) and fruit (seed) vegetables (Table 3).

3.1 Decolonization of Traditional Vegetables

The Oxford Advanced Learners Dictionary (7th Edition) describes colonization as taking control of an area as a country that is not your own, especially using force, and sending people from your own country to live there. In the process, native people were forced or persuaded to adopt the culture and religion of the colonizers. Colonization touched all aspects of life including farming habits and type of foods to consume [16]. Among the colonizers were farmers who were ignorant of indigenous/traditional vegetables. When they saw them growing they pictured them as weeds and thus unwanted and were supposed to be destroyed wherever they were found. They were taught as undesirable plants (weeds) for primary through tertiary education and up to tertiary level [17]. Elsewhere in the region i.e. in Rhodesia now Zimbabwe traditional vegetables were highly featured in the Weed Handbook developed at the Henderson Research Station near Salisbury the colonial capital now Harare [18,19].

3.2 Educational Issues

Pupils when they start their education in the Kingdom of Eswatini are taught the importance of vegetables i.e. exotic vegetables like cabbages and Swiss chard. The colonized education system of exotic vegetables is done at the primary school level then goes on to secondary, up to tertiary level and beyond. Traditional vegetables are hardly taught, and therefore, there is a need to decolonize the mindset on traditional vegetables in the Kingdom of Eswatini and the Southern African Region as a whole. So we suggest that traditional vegetables should be taught at all educational levels.

3.3 The Taiwan African Vegetables Initiative (TAVI)

The TAVI was started by the World Vegetable Centre of the Asian Vegetable Research Development Center (AVRDC). The objective was to raise awareness of the importance of traditional/indigenous vegetables through training of the trainer (TOT) workshops. Three workshops were held. The first one was held at Mananga College Ezulwini in 2021 and the trainers were

non-governmental organisations (NGO) officers. The other two workshops were held at the beginning of 2022 at Big Bend Hotel, Big Bend and Bathel Court, Ezulwini. The trainers for both workshops were government agricultural extension officers. The other objective was to include traditional vegetables in school feeding programmes as side dishes. In the current TAVI programme six traditional vegetables were prioritised (Table 4).

4. IMPORTANCE OF TRADITIONAL VEGETABLES

Traditional vegetables are important in many aspects. They are important historically, commercially, nutritionally and culturally [20]. They provide employment, fibre to the human diet, are a source of biodiversity and in the food they are a source of interesting colour which is potentially appetising [7,21,22]. They are a source of food and nutritional security. They are also important medicinally (Table, 4).

4.1 Historical Importance

Traditional vegetables have been important to the Kingdom of Eswatini and the Southern Africa Region from a historical perspective [20]. The vegetables were the only ones that the native people knew and consumed before the coming of settlers from Europe. However, with the coming of settlers, the situation changed and the traditional vegetables were declared weeds and subsequently become undesirable [23,24,25]. There were settler farmers who developed what is now title deed land (TDL) [23]. In their commercial farms, traditional vegetables were strictly considered weeds [1,7]. In a way, the settler commercial farmers were correct in their own right on their farms because weeds are plants growing in a place where they are not wanted [26]. Over the years natives were colonized and therefore the need to decolonize the indigenous people's mindsets. Until recently, formal markets like supermarkets did not sell traditional vegetables.

4.2 Commercial Importance

Traditional vegetables are of economic importance. They can be sold or bought like any other commodity of commercial value [2,3]. Apart from being consumed, they can be sold and individuals involved in their trade make money and contribute to food security as individuals food buying power is increased [26,27]. The

economic contribution of traditional vegetables or their contribution to gross domestic product (GDP) is difficult to assess because they largely remain in the informal market. At the statistical office (SO) and the National Agricultural Marketing Board (NAMBoard), there is a dearth of information on traditional vegetables. Quantities produced per season and per annum are not known let alone their contribution to the GDP. However, their exotic counterpart's economic statistics are well documented. It is against this background that there is an urgent need to bring traditional vegetables into the formal market of agricultural products and additionally get statistics recorded. There is also a need to give traditional vegetables a clean bill of health and classify them differently under phytosanitary regulations [14,20,28].

From an ambitious point of view, there is a need to organize the export of traditional vegetables as done for conventional vegetables. They can be exported to Europe, North America, and/or elsewhere in the diaspora where they will be in high demand initially by African diasporas not only for their taste and nutritional contribution but cultural demand. The export of traditional vegetables will bring in much-needed foreign currency earnings. Foreign currency will help in the importation of crucial commodities and services like medicines and internet services respectively.

4.3 Cultural Importance

Culture provides social and economic benefits and has evolved for the people of the Kingdom of Eswatini and the region. So when we consider traditional vegetables we consider cultural foods [23,29,30]. Culture is held in high esteem in the Kingdom of Eswatini. Important cultural events in the Kingdom include the *buganu* ceremony, reed dance and *incwala*. Benefits of culture include increasing the well-being of human beings and enhancing their quality of life.

4.4 Nutritional Importance

Traditional vegetables are not good sources of carbohydrates except for root crops like taro (*emadumbe*) and cassava (*umjumbula*) (Table 1), they are not good sources of fat (oil) except for seed crops such as cowpea (*tinhlumaya*), and they are also not good sources of proteins except for legumes [31]. Legumes supply the human body with unsaturated oils which are good for the heart and the vascular system and proteins from

legumes contain eight essential amino acids that animals including man cannot synthesize [31,32]. Vitamins are the major contribution of traditional vegetables to the human diet and they are also high in amino acids such as leucine, lysine, methionine, threonine, valine, tryptophan and phenylalanine [32,33]. Traditional vegetables are a good source of fibre- roughage for human diet and it is mainly essential for the proper functioning of the human digestive system and protection from cancer [34,35].

4.5 Aesthetic Value

In food fruits and vegetables provide interesting colour, texture and variety [36,37]. The aesthetic value of traditional vegetables helps prop up appetite in humans and is especially important for children who have a propensity to despise vegetables in preference for not-so-healthy foods with high sugars such as confectionery commodities like cakes [29,38]. The drive by TAVI to include African vegetables in school feeding schemes will go a long way in alleviating malnutrition like kwashiorker in children. Food and nutritional security in children is good for their enhanced academic performance and subsequently good for the country and the SADC region as a whole. Food and health tourists will appreciate traditional vegetables in their unique appearance [29,39,40].

4.6 Medicinal Importance

Generally, fruits and vegetables are important for the well-being of the human body (Table 4). They provide nutrients and phytochemicals for the proper functioning of the human body (Table 4). Antioxidants are supplied by fruits and vegetables, antioxidants neutralize free radicals which are very damaging to the body [34,41]. These days there is what is called aroma therapy when using plant products like fruits and vegetables. Traditional vegetables are more potent as there is evidence that they are more nutrient-dense than their exotic counterparts [42]. It is well known that the common cold (influenza) symptoms can be alleviated by the consumption of a mixed vegetable stew so similarly symptoms of corona (COVID) virus can be alleviated. Traditional Moringa species vegetables like *inkhakha* and *inshubaba* are believed to alleviate symptoms of high blood pressure and diabetics [25,42].

At the beginning of the anti-immune deficiency syndrome (AIDS) and before the advent of

antiretrovirals it was recommended to improve on the nutrition side including consumption of traditional foods encompassing traditional vegetables [43,44,45]. Therefore against diseases in general, traditional vegetables if consumed in adequate amounts at their optimum states can have preventative and curative properties for the human body.

5. ENVIRONMENTAL ISSUES

Traditional vegetables are important to the environment not only from a biodiversity point of view but many other aspects [46]. Production of traditional vegetables requires relatively less use of synthetic fertilizers and crop protection chemicals than their exotic counterparts [47,48, 49,50]. Therefore in their production, there is reduced pollution of the soil profile and underground waterways while striving to attain SDGs on the environment. Foliar feeding for example may be used in integrated pest management (IPM).

5.1 Integrated Pest Management (IPM)

Now that there are calls to bring traditional vegetables into mainstream agriculture, there will be issues to deal with crop protection [51]. Overall IPM seems to be the way to go since it encompasses all methods of pest management. Generally indigenous/traditional vegetables are attacked less by diseases, insect pests, nematodes and relatively out-compete weeds [20].

5.2 Climate change

Over the years emission of greenhouse gases has resulted in global warming and subsequent climate change. Climate change is characterised by severe weather events [52]. Ironically most of the greenhouse gas emissions have been contributed by the developed countries some of whom are former colonisers as they raced for industrialization [43]. Severe weather events may lead to the extinction of some species including traditional vegetables and some indigenous food species. On the other hand, traditional vegetables through biodiversity may lessen the impact of climate change by being climate-proof [43,52,53].

6. FUTURE PROSPECTS

Now that we have revisited the past and deliberated on various issues on traditional

vegetables the future looks bright. Most traditional vegetables can be grown all year round in the low veld because most of them are of tropical and subtropical origin. They are abundant in all ecological zones in summer. In times of abundance, they can be processed for use out of season. The best method of processing is freezing because it preserves more of the various nutrients. Traditional vegetables will contribute to sustainable development goals (SDGs) pertaining to food and nutritional security and subsequently health, and also important on environmental health. There is an urgent need to address issues concerning the preservation of traditional vegetables in this era of climate change. In situ and in vitro preservation of traditional vegetables need to be prioritised. More species need to be put in country gene banks and the world gene bank. Ample funds need to be set aside for research, teaching and extension of traditional vegetables. Thus partly the importance of the Eswatini Institute for Research in Traditional Medicine, Medicinal and Indigenous Food Plants of the University of Eswatini.

Traditional vegetables will therefore be protected from loss through neo-colonization, climate change, modernization, urbanisation and loss of indigenous knowledge systems (IKS). Strong regional policies through SADC are required to address issues on traditional vegetables to appease African ancestors and pass on the treasure to future generations. It can be advocated that traditional vegetables be served as a side dish aboard regional airlines of the SADC region. Modern preparation methods may be exploited e.g. use of herbs, spices and marinades to add value.

7. CONCLUSION

Various root, leaf and fruit vegetables are found in the four ecological Zones of the Kingdom of Eswatini and the SADC region. There is a need to decolonise people's mindsets in terms of the importance of traditional vegetables not only nutritionally but to raise awareness of their contribution to biodiversity. Just like their exotic counterparts, they need to be taught to pupils from primary to secondary school levels, to tertiary up to University level and beyond. There is also a need to establish Eswatini and African restaurants specializing in ethnic foods which will include in their cuisine traditional vegetables as side dishes. Health and food tourists will appreciate African cuisine.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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