Int. j. adv. multidisc. res. stud. 2022; 2(5):819-821

Received: 10-09-2022
Accepted: 20-10-2022

International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

Pepper Production and Marketing in Ethiopia: An Intense Review

[1] Tizazu Toma, [2] Getu Addis, [3] Dilamo Adila

[1, 3] Southern Agricultural Research Institute, P. O. Box, 06, Hawassa, Ethiopia

[2] Hawassa University, P. O. Box, 05, Hawassa, Ethiopia

Corresponding Author: **Tizazu Toma**

Abstract

Pepper production in Ethiopia is the most ancient than the production of any other vegetable. However, Ethiopian share in the world production is insignificant and productivity is also incomparable. Therefore, this review paper is aimed to stipulate recommended agronomic and environmental conditions for red-pepper production and major challenges of red pepper production, productivity, and marketing in Ethiopia. The review result indicated that Ethiopians have strong attachment to dark red pepper, the fine powdered pungent product which is an indispensable flavoring and coloring ingredient in the common traditional sauce "Wot". It also plays an important role in the national economy. It is an 'annual' plant which grows at altitude ranging from 1400 up to 2100 meter above sea level and requires 600-650 mm rainfall. Disease and unfavorable weather condition; lack of improved varieties; and non-use of recommended agronomic practices were among production constraints. Adulteration; low price and price fluctuation; and low-quality produce were among marketing constraints. Trainings on disease management practice, agronomic practices, input utilization and post-harvest handling; strengthening experts; research on breeding for new varieties; establishment and strengthening cooperatives; and a mechanism to control adulterations were recommended to enhance red-pepper production, productivity, and marketing.

Keywords: Red-Pepper, Agronomic Practices, Production Constraints, Marketing Constraints

1. Introduction

1.1 Background

Pepper is produced in all the continents except Antarctica. It is believed to have originated in Central and South America. It have been Introduction into Asia and Africa in 1493 (Bosland and Votava, 2000) [1]. Over 48% of the world pepper is produced in Asia, China being the leading country (Rehima, 2006) [10].

Peppers is the world's second important vegetable ranking after tomatoes and it is the most produced type of spice flavoring and color to food while providing essential vitamins and minerals. The nutritional value of hot pepper merits special attention. It is a rich source of vitamin A and E. Both hot and sweet peppers contain more vitamin C to prevent flu colds than any other vegetable crop (Boselad and Votava, 2000) [1].

The history of pepper in Ethiopia is perhaps the most ancient than the history of any other vegetable product (EEPA, 2003) [7]. However, Ethiopian share in the world production is insignificant. Compared to India that produced 4 million metric tones from 891,800 hectare (4.48 metric tone/hectare) in 1992, Ethiopia's production in 2001/02 was only 77962.4 metric tones harvested on 55,381 hectares (1.4 metric tone per hectare) (CSA, 2003) [2]. Productivity is also incomparable. China produced 15 metric tone per hectare in 2001/02, whereas Ethiopia produced about 1.4 metric tones per hectare (Wubalem, 2019) [13].

1.2 Objectives of the review

This review was conducted having objectives of examining the role of pepper in Ethiopian livelihood and economy; verifying the recommended environment and agronomic practices for pepper production; and digging-out major challenges of production, productivity, and marketing of pepper production. In doing that, the review indicated intervention areas to be worked upon to enhance pepper production, productivity and marketing in Ethiopia.

2. Results of the review

2.1 The role of pepper in Ethiopian livelihood and economy

Ethiopians have strong attachment to dark red pepper, the fine powdered pungent product which is an indispensable flavoring

and coloring ingredient in the common traditional sauce "*Wot*". The average daily consumption of hot pepper by Ethiopian adult is estimated 15 grams, which is higher than tomatoes and most other vegetables (MARC, 2004) [9]. It also plays an important role in the national economy. It is an important cash crop today; on average 79% of pepper production is for market in SNNPRS (CSA, 2003) [2].

The total production of pepper in the country for the year 2005/06 Ethiopian main cropping season (*Meher*) was estimated at 1790283 quintals. In SNNPRS's rain fed pepper production for 2003/04, 2004/05 and 2005/06 production year, were 213113, 178264 and 777602 quintals, respectively. These accounted for 32%, 25% and 43 % of the country's production in the respective years. Of the total estimated area under vegetables, the lion share which is about 73.13% was under red peppers. Of the total production of vegetables, red peppers accounted for 35.71% (CSA, 2020) [3]. The major export destinations of Ethiopian red-pepper are Germany, Spain and Japan

Different commercially known red pepper genotypes are cultivated in different parts of the country with specific local names like Mareko Shote, Mareko-Dube, Halaba, Gojeb, Milkaye, Birisheleko, Agarfa, Tedele, Paprika Queen and Paprika King (Shimeles *et al*., 2007; Girma *et al*., 2011 [12, 8]).

2.2 Recommended environment and agronomic practices for Pepper production

Pepper is an 'annual' plant which grows at altitude ranging from 1400 up to 2100 meter above sea level (m.a.s.l.). It requires 600-650 mm rainfall. Pepper is propagated by raising seedlings in a nursery. Like most other plants, it prefers well drained, moisture holding loam soil (sandy loam) containing some organic matter (Lemma and Edward., 1994). A pH of 6.5-7.5 is suitable and the land should be level to 0.01- 0.03 % slope to allow adequate drainage and prevent root diseases (Desta, 2022) [5].

Seedlings are raised starting April and transplanted as the main rainy seasons begins, which is June/July. Depending on the area, harvesting starts 4 to 5 months from transplanting. The seedlings are transplanted 40–50 days after planting. Planting is carried out in the beginning of the main rain season (Roukens, 2005) [11].

In areas where rainfall is inadequate, supplementary irrigation is required. About three weeding sessions are recommended during the growth period. The red pepper is harvested when it is fully red and starts to dry. After harvesting, pepper is dried. Shade drying is recommended for high quality oleoresin (Roukens, 2005) [11]. In Ethiopia, the recommended fertilizer rate for the red or hot pepper is, 200 kg/ha DAP and 100 kg/ha for UREA (EARO, 2004) [6]. Pepper yield can reach 15–20 qt/ha for *Mareko Fana* and 20–25 qt/ha for *Bako Local* under modern practices

2.3 Major challenges on production, productivity, and marketing of Pepper

Lots of challenges were identified by various studies as constraints of pepper production and marketing country wide. The main production challenges include disease and unfavorable weather condition; lack of recently released improved varieties, where the current old varieties accounted for more than 20 years and are low in productivity; and no use of recommended agronomic practices and production inputs (fertilizers and other inputs) (Destaw, 2022 & Rehima, 2006) [5, 10].

The main marketing challenges include adulteration by adding water, soil, and gravel to increase the weight; minimal involvement of cooperatives because cooperatives focus on nonperishable products; low storage capacity and poor quality of stores; low price of producers and price fluctuation of the produce; low standard of the produce not fulfilling the required amount of ingredients (The Oleoresin content in pepper is 3.5%, after the removal of the seed and is quite low, compared to the international standard which is 5-12 percent). Its color units also have fluctuations (; low supply that do not satisfy factories demand (At the moment, due to shortage of peppers, the factories are working under capacity, and are running only 3-4 months per year); The spice industries were known to be underdeveloped, unorganized, small-scale, and inefficient; and inadequate support of experts (DAs) (CSA, 2020; Degineh & Endrias, 2019; Destaw, 2022; Rehima, 2006; Roukens, 2005) [3, 4, 5, 10, 11].

3. Conclusion and recommendations

Pepper is produced in all the continents except Antarctica. A pepper is the world's second important vegetable ranking after tomatoes. The history of pepper in Ethiopia is perhaps the most ancient than the history of any other vegetable product. However, Ethiopian share in the world production is insignificant and productivity is also incomparable. This might be due to some socio-economic and environmental constraints that the producers are facing. Therefore, this review paper is aimed to stipulate recommended agronomic and environmental conditions for red-pepper production and major challenges of red pepper production, productivity, and marketing in Ethiopia. The study has also examined the role of red pepper in Ethiopian livelihood and economy. The review result indicated that Ethiopians have strong attachment to dark red pepper, the fine powdered pungent product which is an indispensable flavoring and coloring ingredient in the common traditional sauce "*Wot".* It also plays an important role in the national economy. on average 79% of pepper production is for market. Red pepper is an 'annual' plant which grows at altitude ranging from 1400 up to 2100 meter above sea level. It requires 600-650 mm rainfall. Disease and unfavorable weather condition; lack of improved varieties; and non-use of recommended agronomic practices were among production constraints. adulteration by adding water, soil, and gravel; low price of producers and price fluctuation of the produce; low quality produce not fulfilling the required amount of ingredients were identified as marketing constraints among others.

Trainings on disease management practice; strengthening experts follow-up and technical support of the production; research on breeding for new varieties to enhance ingredients; Trainings on agronomic practices, input utilization and post-harvest handling; establishment and strengthening cooperatives to regulate the fluctuating prices; a mechanism to control the different adulterations on the produce are recommended to enhance red-pepper production, productivity, and marketing.

4. References

1. Bosland PW, Votava EJ. Peppers, Vegetables and Spices Capsicum. CABI Publishing. New York, 2000, p198.

2. Central Statistical Agency (CSA). Area and Production of Crops. Country Level, Part II, Addis Ababa, 2003.
3. CSA. Agricultural Sample Survey. Report on Area and Production of Major Crops. 587th Statistical Bulletin. Volume I. Addis Ababa, Ethiopia, 2020.
4. Degineh Lagiso, Endrias Geta. Technical Efficiency of Red Pepper Production: The Case of Dalocha, Southern Ethiopia. Asian Journal of Agricultural Extension, Economics & Sociology. 2019; 37(1):1-8. ISSN: 2320-7027
5. Desta Bekele. Opportunities and Potential of hot pepper (*Capsicum annuum* L.) production in Ethiopia. European Journal of Agriculture and Forestry Research. 2022; 10(2):14-20. ISSN: 2054-6327
6. Ethiopian Agricultural research Organization (EARO). Released crop varieties and their recommended cultural practices. Progress report. Addis Ababa, Ethiopia, 2004.
7. Ethiopian Export Promotion Agency (EEPA). Spice potential and market study, Addis Ababa, Ethiopia, 2003.
8. Girma T, Lidet S, Shimeles A, Waga M, Shiferaw M, Kebede A, Tamiru A, Bizuayehu T. Pepper production, and marketing. Technical Manual; SOS, Sahil, Hawassa, Ethiopia, 2011.
9. Melkassa Agricultural Research Center (MARC). Method of pepper production. Broacher, 2004.
10. Rehima, Mussema. Analysis of Red Pepper Marketing. The case of Alaba and Siltie in SNNPRS of Ethiopia. An M.Sc. Thesis; Haramaya University, Ethiopia, 2006, 1-8.
11. Roukens O. Export Potential of Ethiopian Oleoresins. Ethiopian Export Promotion Department, 2005.
12. Shimeles A, Berhanu B, Bekele K. Survey report on pepper production constraints in major pepper growing areas of Ethiopia (unpublished), EIAR, 2007, Addis Ababa, Ethiopia, 2007.
13. Wubalem Gobie. A seminar review on red pepper (Capsicum) production and marketing in Ethiopia, Cogent Food & Agriculture. 2019; 5:1:1647593. Doi: 10.1080/23311932.2019.1647593