INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY: APPLIED BUSINESS AND EDUCATION RESEARCH
2024, Vol. 5, No. 1, 82 – 90
http://dx.doi.org/10.11594/ijmaber.05.01.09

Research Article

Production Practices and Marketing Strategies of Ginger (Zingiber officinale L.) in Southern Philippines

Alexander N. Morados*

Camiguin Polytechnic State College

Article history:
Submission January 2024
Revised January 2024
Accepted January 2024

**Corresponding author:*
E-mail:
moradosalexander@gmail.com

ABSTRACT

Ginger (Zingiber officinale L.) is one of the priority vegetables and most processed functional food in many parts of the the Philippines. This study assessed the production practices and marketing strategies of ginger in Northern Mindanao from October 2022 to October 2023. It utilized a validated survey questionnaire administered to 160 registered farmers in the provinces of Bukidnon, Camiguin, Lanao del Norte, Misamis Occidental and Misamis Occidental supplemented with key informant interviews, focus group discussion and secondary data. Findings showed that majority of the respondents belong to age bracket 50-59 years old, earn a monthly family income range of PhP 9,520.00 to PhP 19,040.00 and obtain basic education diploma. The respondents "Always Practiced" the recommended production practices and "Moderately Practiced" the suggested marketing strategies for the commodity by the Department of Agriculture. There is a significant relationship between production practices and marketing strategies. There is a significant differnce on the extent of marketing strategies when grouped according to age and monthly and highest educational attainment. Challenges include low market price and high cost of farm inputs which are threats productivity and profitability of the ginger industry.

Keywords: *Functional food, Ginger, Marketing, Production, Northern Mindanao*

Introduction

Northern Mindanao through the Department of Agriculture- Regional Field Office 10 (DA- RFO 10) prioritizes commodities with potential for income among farmers and Micro, Small, and Medium Enterprises (MSMEs). The initiative of DA-RFO 10 is in line with the regional development plan for 2017-2022 i.e. encouraging diversification of farm income through shifting to more productive and competitive commodities (National Economic Development Authority, 2019, p.119). Moreover, the harmonized national research and development agenda on health focuses researches to functional foods like ginger as tea. Functional foods are food components that

How to cite:
Morados, A. N. (2024). Production Practices and Marketing Strategies of Ginger (Zingiber officinale L.) in Southern Philippines. *International Journal of Multidisciplinary: Applied Business and Education Research*. *5*(1), 82 – 90. doi: 10.11594/ijmaber.05.01.09

provide additional benefits, such as reducing risk of diseases, aside from their primary nutrient function (Department of Science and Technology, n.d., p.19).

Ginger is one of the 20 priority vegetables of DA. It also belongs to the 14 commonly processed vegetables and root crops for export purposes (InvestPhilippines, n.d., Philippine Processed Fruits and Vegetables Sector, para.1). Further, Northern Mindanao ranks first in the country in terms of average ginger production from 2018-2021 (Philippine Statistics Authority, n.d). The regions produces an average of 28, 410 metric tons of fresh ginger for the past five years.

Ginger have promising new markets, health benefits and value-adding opportunities. In the market, ginger as a commodity takes in various forms. Ginger products come as fresh or powdered, in oils or preserved, dried or pickled, as tea, syrup, or in crystallized form (Baral, 2021). Driving forces for global demand for ginger are health consciousness, population growth, changing social structure, and lifestyle.

Challenges, however, on post-harvest handling, increasing marketing costs and changing consumer preferences might threaten adoption and sustainability. Hence, the need to analyze the current market status for ginger. The Agriculture, Forestry and Fishery (AFF) RD agenda indicated the implementation of socio-economic and po)icy research focusing on production and marketing efficiencies and market researches (DOST, n.d., p.32). Moreover, addressing high marketing costs call for assessment of existing marketing systems.

This research project responds to the challenge of characterizing the production practices and marketing strategies of ginger in Northern Mindanao. Production practices of ginger may vary from different provinces and Marketing research aims to guide decision-makers craft better strategies in improving marketing system of products. Competitive markets as that of agricultural commodities benefit from information generated in market researches. Hence, output of the research hopes to guide formulation of appropriate policies and interventions to improve the ginger industry.

The main purpose of the study is to assess the production practices and marketing strategies of ginger in Northern Mindanao, Philippines. Specifically, it sought answers to the following questions:

1. What is the profile of the respondents in terms of age, family monthly income and highest educational attainment?
2. What is the extent of production practices of ginger?
3. What is the extent of marketing strategies of ginger?
4. Is there significant relationship between production practices and marketing strategies of ginger?
5. Is any there significant difference on the extent of marketing strategies when grouped according to age, monthly income from farming and highest educational attainment?
6. What are the challenges encountered in ginger farming?

Methods

Conceptual Framework

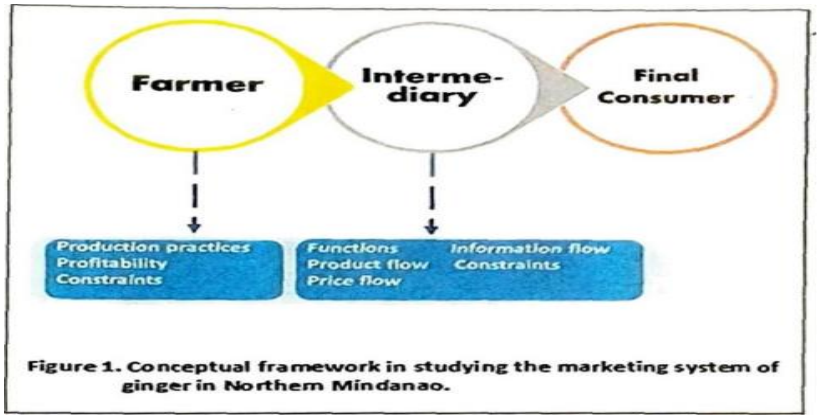

Figure 1. Conceptual framework in studying the marketing system of ginger in Northern Mindanao.

Locale of the Study

The study covered the five provinces of Northern Minadanao or Region X (Bukidnon, Camiguin, Lanao del Norte, Misamis Occidental and Misamis Oriental). Region X comprises two highly urbanized cities, seven constituent cities, 84 municipalities and 2,022 barangays. It is an agro-industrial and ecotourism region of Southern Philippines.

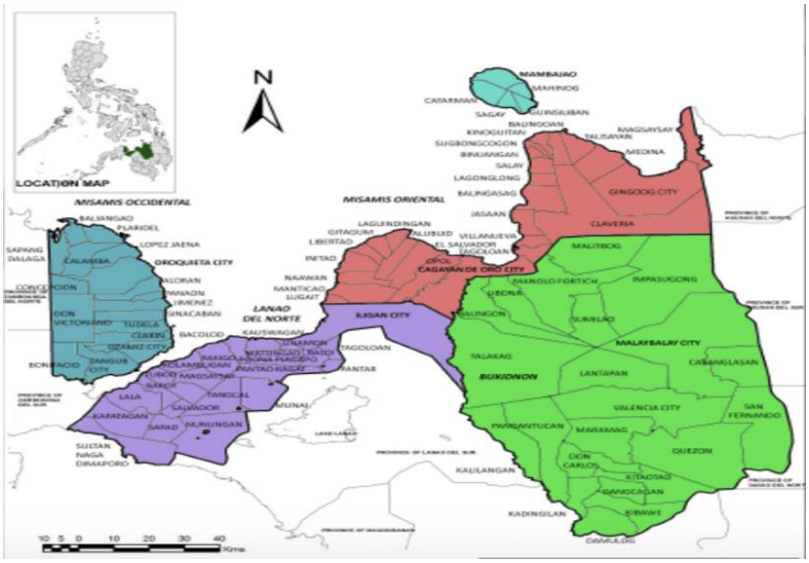

Figure 2. Map of Northern Mindanao

Respondents of the Study by Province

There were 200 respondents determined through qouta sampling from ginger producing municipalities in the 5 provinces of Northern Minadanao and broken down as follows: 72 (36%) from Bukidnon; 49 (24.5%) from Misamis Oriental; 40 (20%) from Lanao del Norte; 33 (16.5%) from Misamis Occidental and 6 (3%) from Camiguin.

Research Design

Quantitative research method was used particularly the descriptive-survey design. Survey questionnaire was primarily utilized to gather relevant information supplemented with focus group discussion and key informant interviews.

FGDs provided preliminary understanding on production practices and marketing strategies and challenges faced in producing and marketing ginger. Following the FGDs were a series of casual interviews.

As a commissioned research, a quota sample of 200 growers comprised the sample size in the absence of accurate and complete list of ginger farmers from the localities. The Municipal Agriculture Offices (MAOs) involved in the study areas merit the use of a non-probability sampling technique for identified individuals considered as farmer-respondents.

Research Instrument

The survey questionnaire was validated by five experts from the Department of Agriculture, the Department of Science and Technology, Central Mindanao University, Xavier University-College of Agriculture and the College of Agriculture and Food Science of the University of the Philippines at Los Banos. Pre-guided questionnaires for the focus group discussion and key informant interviews were reviewed by senior faculty members of the Development Communication Department of Xavier University and Central Mindanao University. The questions were translated into the vernacular to ensure better understanding of the information or data being asked.

Data Gathering

Key Informant Interviews (KII) with the Provincial Agriculturists and Presidents of Farmers Organization were done using personal and phone interviews which were guided with pre-structured questionnaires.

Preliminary results were presented back to farmers, agricultural technicians, and extension workers during the validation activities per province. The survey started on January 2022 and ended on December 2022. Production and marketing data were collected from the 2022 cropping year.

Scoring Guideline

Using a Four Point Likert Scale (Table 1) the indicators on the extent of production practices and the extent marketing strategies were scored, described and interpreted.

Table 1. Scoring Guide for Extent of Production Practices and Extent of Marketing Strategies

Arbitrary Value	Statistical Limits	Qualitative Description	Interpretation
4	3.26-4.00	High Extent	Always Practiced
3	2.51-3.25	Moderate Extent	Sometimes Practiced
2	1.76-2.50	Less Extent	Rarely Practiced
1	1.00-1.75	No Extent	Never Practiced

Statistical Tools

For the analysis of primary data, descriptive statistics such as frequency counts, percentages and average were used. It used Spearman rho correlation to determine if there is significant relationship between production practices and marketing strategies of ginger and Analysis of Variance (ANOVA) for any significant difference on the extent of marketing practices when grouped according to age, family monthly income from both farming and non-farming activities and highest educational attainment of the farmer- respondents. Ranking was used to identify the most pressing challenges encountered to the least pressing in ginger industry.

Ethical Considerations

Prior informed consent was sought before administering the survey. Entry protocol was followed to ensure that local government units and the tribal leaders were informed of the research project, its objectives and methodologies. Data privacy was assured and utilization conferences were done to update the farmers' organization and local executives of the progress and preliminary results of the research.

Result and Discussion

As shown in Table 2, most of the respondents (143 out of 200) or 71.5% are aged 50-59 years old, followed by those within the age bracket 40-49 years old (19.5%), and only few percentage belonged to age brackets 60 years old and above (4%); 3039 years old (3%) and 20-29 years old (2%). This implies that most of the farmers are aging. Manigo (2021) reported that the average age of Filipino farmners are ranging from 55-59 years old. A study conducted by SEARCA (2023) revealed that the Philippines will face a critical shortage of younger farmers who are more open to become agripreneurs and technology adopters.

Table 2. Profile of the Respondents (N=200)

Variable	Frequency	Percentage(%)
Age (years)		
20-29	4	2
30-39	6	3
40-49	39	19.5
50-59	143	77.5
60 and above	8	4
Total	**200**	**100**

Variable	Frequency	Percentage(%)
Number of Years in Teaching		
38,081-66,640	12	6
19,041-38,080	23	11.5
9,520-19,040	121	60.5
less than 9,520	44	22
Total	**57**	**10**
Highest Educational Attainment		
Elementary Level	16	8
Elementary Graduate	25	12.5
High School Level	46	23
High School Graduate	58	29
College Level	34	17
College Graduate	21	10.5
Total	**57**	**100**

As to family monthly income (farm and non farm sources), the findings showed that 121 out of 200 respondents (60.5%) earned PhP 9,520.00 to PhP 19,041.00. This was followed by those within the income bracket of less than PhP 19,040.00 (22%) and then those within the income bracket of PhP19,041-38,080.00. (23%) The remaining percentage (12%) are those who earned PhP 38,081 to PhP66,640.00. This is supported by the Philippine Statistics Authority Report (2022) which indicated that the average income from farming is PhP100,800.00 classified as poor. The New Humanitarian Report (2023) stressed that majority of the Filipino farmers are classified as low income to poor in terms of income classification due to high cost of farm inputs and rising food prices.

In terms of highest educational attainment, the data revealed that 58 out of 200 respondents (29%) graduated from high school and 46 (23%) reached the high school level. There were 34 (17%) earned units in college, followed by those who graduated from elementary, 21 (10.50%) graduated from college and 16 (8%) did not complete elementary education. A study conducted by DA-BAR in 2018 concluded that the average level of education of a farmer is grade five only. According to Saliot (2019) most of the educational attainment of farmers were elementary level followed by secondary level. This limited education make them less receptive to new farming technologies that can boost yields in growing losses from volatile weather.

The extent of production practices on ginger is presented in Table 3. As shown, the total average weighted mean is 3.29 interpreted as High Extent. The value for standard deviation is 0.43 which connotes that the data points are clustered closer to the mean

The study further revealed that students with higher academic achievement had a higher self-confidence and students with lower academic achievements have a lower self-confidence (Akbari & Sahibzada, 2020). Therefore, this study supported that students' self-confidence is the sole predictor of performance. The model that best fits performance is anchored on self = confidence of students in terms of self regulation.

Table 3. Extent of Production Practices of Ginger

Indicators	Mean	Qualitative Description
Grow ginger in partially shaded areas	3.74	High Extent
Select healthy rhizomes with 3-4 sprouts	3.68	High Extent
Pre-germinate ginger roots before planting	3.66	High Extent
Plant ginger at the onset of rainy season	3.70	High Extent

Indicators	Mean	Qualitative Description
Seed pieces are planted along furrows	2.94	Moderate Extent
Incorporate organic fertilizer in the field	3.31	High Extent
Mulch are provided to suppress weeds	3.52	High Extent
Check for pest and disease infestation	2.38	Less extent
Intercrop ginger with other perennial crops	3.71	High Extent
Irrigate the ginger field regularly	2.30	Less extent
Total Average Weighted Mean	3.29	**High Extent**
Standard Deviation	0.43	

The top three production practices with a qualitative description of High Extent and interpreted as "Always Practiced) are "Grow ginger in partially shaded areas (3.74); "Intercrop ginger with other perennial crops" (3.71) and" Plant ginger at the onset of the rainy season (3.70). During the FGD, the farmers confirmed that they planted their ginger under coconut, coffee and cacao. According to the key informant from the MAO, ginger are shade tolerant crops. The farmers ensured that they have planted at the onset of the rainy season considering that their areas are under rainfed conditions. The indicators described as "Less Extent" are "Irrigate the field regularly" (2.30) and "Check pest and disease infestation" (2.38). The farmers affirmed that the ginger are planted under trees so high light intensity is not a problem and they use mulch such as rice straws to suppress weeds and conserve moisture. They also have not observed major pest infestation in the crops. The key informant added that ginger crops are in the tropics are not heavily irrigated since rainfall is available all throughout the year and that ginger are resistant to many pests and diseases

The extent of marketing strategies on ginger is presented in Table 4. As shown, the total average weighted mean is 2.79 interpreted as Moderate Extent. The value for standard deviation is 0.48 which connotes that the data points are clustered closer to the mean.

Table 4. Extent of Marketing Strategies in Ginger

Indicators	Mean	Qualitative Description
Harvest ginger according market requirement	3.13	Moderate Extent
Grade rhizome according to size and weight	2.73	Moderate Extent
Sell ginger to retailers	3.40	High Extent
Use appropriate packaging material	2.65	Moderate Extent
Market ginger to wholesalers	3.45	High Extent
Market ginger for processing/export	2.42	Less Extent
Advertise ginger for sale in the social media	1.90	Less Extent
Display ginger products in agro-industrial fair	2.62	Moderate extent
Sell ginger on the streets	2.30	Less Extent
Contact direct buyers	3.30	High extent
Total Average Weighted Mean	2.79	**Moderate Extent**
Standard Deviation	0.48	

The top three marketing strategies used by the farmers are the following: "Sell ginger to wholesalers (3.45); "Sell ginger to retailers "(3.40) and "Contact direct buyers" (3.30). During the FGD, the farmers opened that they do not choose whether the buyer is a retailer or wholesaler as long as they can earn income to buy their daily needs. They also said that they need to contact buyers before harvesting so that they are assured of their market and they could also avail of cash advances. The key informant validated these statements since there are months that the supply is abundant and there are also months that the supply is low

which affect the price of ginger in the market so farmers have no choice but to sell their products in retail (by kilogram) or wholesale basis (bulk). Furthermore, there are buyers who give cash advance to farmers which will be deducted from the sale of their produce.

The indicators described as "Less Extent" interpreted as rarely practiced are: Advertise ginger in the social media (1.90); "Sell ginger in the streets" (2.30); "Market ginger for processing or export (2.42). The FGD revealed that many of the farmers do not have Facebook account and their family members use social media for personal affairs. They also do not have time to sell in the streets and there are some local food processors who are engaged in salabat making. Some shared that the ginger are extracted as ginger tea and ginger oil for export. The key informant supported their claim knowing that there are areas with slow or no internet conectivity and that there are pending proposals to put up ginger processing plant and to trade partner with European Union for ginger by product export. There is a high demand of ginger tea and ginger oil in western countries, he said. Fleming et al (1999) stated that value adding of ginger may contribute to better livelihood in rural communities.

The test of correlation using Spearman Rho is shown in Table 5. The two variables- production practices and marketing strategies are set at alpha 0.05 level of significance using two tailed test.

Table 5. Spearman Rho Correlation

Statistics	Production Practices	Marketing Strategies
Correlation Coefficient	1.000	0.753*
Sig (2 tailed)	-	0.000
N	200	200

The data revealed that the correlation coefficient of 0.753 showed a positive and significant correlation between production practices and marketing strategies in ginger among farners in Northern Mindanao. This implies that as farmers observe recommended production practices, they tend to follow the suggested marketing practices to ensure higher productivity and profitability (UN-FAO, 2021) During the FGD the farmers shared that the recommended production practices were taught to them by the agricultural extension workers while on the marketing aspects they tried their best to follow the suggested strategies but factors like rising prices of basic commodities hinder their desires to look for better marketing alternatives. Geta et al (2011) stressed that good agricultural practices increased the marketability of farm products in both local and international level.

T-test result revealed that on the variable of age, there is significant difference on the extent of marketing strategies on ginger among younger farmers. This implies that younger farmers are more aggressive in using different marketing strategies and even use social media or other platforms to sell their products

Based on the ANOVA, the extent of marketing strategies in terms of the variables family monthly income and highest educational attainment showed no significant difference

The challenges encountered in ginger production and marketing are ranked from the most pressing to least pressing challenges as experienced by the farmers themselves. These are validated by FGDs and KIIs.

In the production aspect, the farmers rated" high cost of farm inputs" as the most pressing challenge encountered and "pest and disease infestation as the least. During the FGD, they cited labor cost (from planting to harvesting) and the planting materials contributed higher to the total cost of production. The answers were validated by the key informant as she shared that the minimum wage of farm labor ranges from 350 to 400 pesos per day. Another key informant revealed that native variety of ginger is difficult to secure and command higher price because it is popular in making salabat. The most commonly planted is "imugan"

variety but also commands higher price. Native and Imugan varieties are in demand due to its aroma and medium fiber content (BPS, 2007).

In term of the marketing side, the farmers considered "low market price" as the most pressing problem while lack of transportation as the least pressing. The farmers expressed their dismay over the issue of low market price. The high cost of production is not compensated by the sales from ginger. There are a lot of times when the production is high but the market price is low due to decrease in demand and they wished that a processing facility will be available so that the unsold ginger will be processed into other products like ginger powder, ginger oil and ginger cream. DOST (2019) considered ginger as a versatile crop which can be processed as food, beverage and medicine. There is no issue on the transportation because there are existing farm to market roads and many vehicles are available plying around the localities. Widadie (2020) cited that the presence of farm to market roads increased accessibility of farm produce to the market.

Conclusions and Recommendations

From the findings of the study, the following conclusions are drawn:

1. Majority of the respondents are aged 50 to 59 years old described as late adolescence; earned a family monthly income from both on farm and off farm source of PhP9,520 to 19,040 classified as low income and obtained basic education.
2. The respondents " Always Practiced" the recommended production practices which implies they follow the technology to a high extent shared to them by the Department of Agriculture and "Moderately Practiced" the suggested marketing strategies for ginger. There is a need for interventions such as value adding and strengthening of organization of production or marketing cooperatives and networks.
3. There is positive and significant relationship between production practices and marketing strategies which implies that when production practices are observed the respondents tend follow the prescribed marketing strategies for ginger.
4. There is significant difference on the respondents' perception on their extent of marketing strategies when grouped according age and highest educational attainment but no significant difference in terms of family monthly income. Younger farmers and those who have gone to college are more perceptive to marketing strategies.
5. The most pressing challenges encountered in the ginger industry in terms of production is the high cost of farm inputs while the least pressing is the pest and disease infestation and for the marketing aspect is the low market price of ginger and the least is lack of transportation.
6. A follow up study may be conducted using other relevant variables and statistical tools.

Acknowledgement

The researcher is highly indebted to Camiguin Polytechnic State College and the Department of Agriculture Regional Field Office X for the financial and technical support', to the validators for reviewing the questionnaire and to all Municipal Agriculture Officers (MAOs) and farmer-respondents for their kind cooperation to complete the research project on time.

References

Baral, R., Kafle, B. P., Panday, D., Shrestha, J., & Min, D. (2021). Adoption of Good Agricultural Practice to increase yield and profit of ginger farming in Nepal. *Journal of Horticultural Research*, *29*(1), 55-66.

Bordoloi, J., & Bhuyan, A. (2022). Production and Marketing Practices of Ginger Cultivation in Karbi Anglong District, Assam. *Indian Journal of Economics and Development*, *18*(2), 313-321.

Bureau of Product Standards. (2007). Philippine national standard for fresh vegetables vegetables- ginger grading and classification. Makati City: DTI.

Department of Science and Technology (n.d.). Harmonized national research and development agenda 2017-2022. Retrieved from Department of Science and Technology website:

http://www.dost.gov.ph/phocadownload/Downloads/Journals/

Department of Science and Technology Regional Office No. 10. (2019). Grow Ginger.Carmen, Cagayan de Oro City.

Khanal, K. (2018). Factors Affecting and marketing chain of ginger in Salyan District, Nepal. *International Journal of Applied Sciences and Biotechnology*, *6*(2), 127-131.

Mahat, S., Sapkota, S., Sapkota, S., & Katuwal, K. (2019). Factors affecting ginger production in surkhet district, Nepal. *International Journal of Applied Sciences and Biotechnology*, *7*(2), 269-273.

Manigo, C.G. (2021). The aging Filipino farmers: a threat to food security. Philippine Daily Inquirer May 2021 issue.

New Humanitarian Report 2023.

Package of Technology of Different Vegetable Crops. (2019). DA-RFU IV-A, BAR, Diliman, Quezon City.

PSA Report 2022

Saliot, A. DA-BAR Monthly Newsletter May 2019 Issue.

SEARCA News 2023 Compilation. Los Banos, Laguna

Setiawan, A. B., & Fadillah, R. N. (2021). The Value Chain Analysis and Strategies for the Development of Ginger Farming in Semarang Regency. *Jurnal Ekonomi Pembangunan: Kajian Masalah Ekonomi dan Pembangunan*, *22*(2), 200-217.

UN-FAO Report 2021. Rome, Italy

Widadie, F. (2020). Analysis of ginger marketing strategy in Karanganyar Regency, Indonesia. In *IOP Conference Series: Earth and Environmental Science* (Vol. 423, No. 1, p. 012031). IOP Publishing.