

PRODUCTION PRACTICES OF POULTRY AND LIVESTOCK RAISERS IN THE PROVINCE OF GUIMARAS

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ABSTRACT This study was focused on investigating the production practices of poultry and livestock farmers in the Province of Guimaras. Thus, this was further to assess the following variables; poultry and livestock operation profile, sources of animals, livestock pasture feed and feed supplements, water, poultry and livestock living conditions, health management, manure management, and marketing. The farmers raised livestock animals such as cattle, pigs, carabaos, and goats, while they have also raised native and layer chickens. Livestock farmers were backyard raisers using a tethering system of owned animals. They utilized pelleted commercial feeds, but those using locally mixed feeds use rice bran, corn, and copra as feed ingredients, wherein they feed their animals on schedule. They used crossed breed, using the natural method of herd mating, wherein they considered the breed in the selecting stocks. The farmers commonly practiced vaccination, deworming, and vitamin/antibiotic supplementation for the health management of their animals. They sold their animals live as wholesale and cash on delivery basis. The common problems encountered by the farmers are diseases, adverse climatic conditions, capitalization, and marketing. Radio and television are the major sources of information. Farmers are not organic practitioners, especially on the introduction of feeds.

Keywords: production practices, poultry, livestock

INTRODUCTION

Populations of domesticated pigs, chickens, cattle, carabaos, goats, and ducks primarily represent the animal production sector of Philippine agriculture. In recent years, however, sheep, quails, and horses are gaining popularity. Except for carabaos which also provide a significant amount of draft power and its meat and milk, the primary products of the other farm animal species are for food: meat, milk, and eggs. (Medina, 2011).

The Philippines' production area reported in 2009 is 52,546 ha, employing around 70,000 producers/farmers scattered all over the country. The animal industry has been primarily in the private sector, non-governmental organizations (NGOs), and people organizations or cooperatives. These are generally produced by small-scale farmers under more diversified farming systems and are integrated with a few heads of livestock (pigs, goats, carabaos, cows, chickens, or ducks) (Lambio, 2011).

This study anchored to or led to support Executive Order 481 (EO 481) was approved by President Gloria Macapagal-Arroyo on December 27, 2005. It hopes to promote organic agriculture as a farming scheme, especially in rural farming communities; forge effective networking and collaboration with the stakeholders involved in the production, handling, processing, and marketing of organic agriculture products; guarantee food and environmental safety by means of an ecological approach to farming; and ensure the integrity of organic products through the approved organic certification procedures and organic production, handling and processing standards. This legal instrument also goes with the creation of the Bio-organic Farming Authority under the Office of the President. Other house bills have already been filed on various aspects like training programs at the barangay level to educate more farmers, extension services to groups practicing organic farming, establishing training facilities in every barangay, and granting special loans to farmers. At the municipal and barangay levels, Local Government Units are encouraged to engage in organic farming through various resolutions, master plans, and programs. Under Section 10 of the EO 481, the Department of Agriculture, through the Bureau of Agriculture and Fisheries Product Standards, shall formulate the implementing rules and regulations to carry out the provisions of the said Executive Order.

With most of its farms situated in rural areas, agricultural production and commerce are largely affected by the availability of transportation and communication facilities and other aspects of rural development. More often than not, the lack of post-harvest facilities and poor transportation and communication networks result in high postharvest losses. Losses due to inadequate transport facilities are prevalent in livestock (cattle and pigs) that are marketed to distant urban centers. Government and internationally-funded projects are being instituted to help improve these rural areas, especially when an economic potential is seen. Although the country is primarily agricultural, its food security is precarious. An increasing population within a continuously diminishing agricultural land area compounded with an increasing per capital consumption of livestock products leads to a decreasing food self-sufficiency index. (Molina, 2003). In particular, the researcher wanted to investigate further the production practices of poultry and livestock farmers in the Province of Guimaras.

Statement of the Problem

This research understanding investigated the production practices of poultry and livestock raisers in the Province of Guimaras. Specifically, this study aimed to answer the following questions: What is the profile of the respondents when categorized to gender, civil status, age, educational attainment, monthly income (poultry and livestock), number of children, farm size/ownership, group affiliation, years in animal raising and stay in the community, other sources of income and religion; What is the profile inventory of poultry and livestock animals raised by farmers in the Province of Guimaras; What are the production practices of farmers on poultry and livestock raising in the Province of Guimaras when categorized to the type of operation, production system, sources of stocks, feeds/feed type, feed supplements, feed ingredients, feeding system, mating system, breeding methods, incubation, basis of selection, health herd management, waste disposal, sources of water, farm products produced, marketing/payment scheme, problems, and sources of information?

METHODOLOGY

The researcher employed the descriptive research design, specifically the descriptive correlational research method. The descriptive design is particularly appropriate in behavioral sciences and in finding out relationships, differences, or what prevails in the present situation, which holds opinions and beliefs, influences processes and effects, and contributes to trends and practices. This relational study allows the estimation of possible existing relationships among variables under study. This study focused on the Province of Guimaras, which is composed of five (5) municipalities. These are the Municipality of Buenavista, Jordan, San Lorenzo, Nueva Valencia, and Sibunag. The respondents of the study were all the identified farmers raising poultry and livestock animals categorized as small and large scale farmers in the entire Province of Guimaras. They were identified with the help of the Personnel from the Department of Agriculture in every municipality. The researchers used two kinds of sampling techniques. First is the purposive sampling technique since the respondents were already identified as raisers of poultry and livestock. Likewise, quota sampling was used to limit the actual number of respondents in every town in Guimaras Province. Thus, one hundred (100) farmers per town were selected, with a total of 500 farmers involved in this investigation in Sibunag. This study used the adopted questionnaire from the RI DEM Division of Agriculture and Resource Marketing (RICO Form 106, 2007) and the Livestock Farm. Practices Survey questionnaires designed by a project team made up of Statistics in Canada, 2005 entitled "Production Practices of Poultry and Livestock Animals" The instrument used was subjected to a face validation technique, also known as validation by jury opinion. This required that the test instrument is presented to a jury of experts for their opinion as to whether or not the instrument could gather the needed data as intended. The researchers developed a survey questionnaire with inputs based on interviews and feedback discussions. The researchers secured a letter of request for permission to conduct the said study to every respective office of every municipality which of having their own offices of the Department of Agriculture (DA); thus, the researchers also sent a letter to the respective raisers or farmers of poultry and livestock. Furthermore, to gather fair information from the farmers mentioned above, the researcher and trained enumerators translated the words according to the dialect spoken by the said animal raisers. Frequency count and percentage distribution to determine the socio-demographic profile of the respondents; profile inventory of poultry and livestock animals raised by farmers in the Province of Guimaras and production practices of farmers on poultry and livestock raising the frequency count and percentage distribution were used.

RESULTS AND DISCUSSIONS

Profile of the Respondents

Table 1 presents the gender, civil status, age, and educational attainment. For gender, 57% were male and 43% were female. This implies that more males were involved in animal raising than females in San Lorenzo. As to the civil status, most of the respondents were married with 88%, 8% were widowed, and 4% were single. It has been noted that most married individuals are in animal raising because animal raising served as their additional source of income for their family.

As to age, 61 of the respondents were 51 years and older, 23 were 41-50 years old, 15 were aged of 31-40, and 2 were aged 21-30 age bracket. Data revealed that most of the animal raisers were old individuals in the community. Few young individuals were interested in animal raising.

As to educational attainment, there were 36% graduated elementary, 23% were high school graduate, 15% were elementary level, 9% were college graduate, 7% were high school level, 4% were college level, and 1% were vocational. It implies that more non-technical people are into animal raising. They have gained only knowledge in animal raising from their own experience or did not attend formal training.

Table 1. Gender, Civil Status, Age, and Educational Attainment.

Profile		Frequency	Percentage
Gender	Male	285	57
	Female	215	43
	Total	500	100
Civil Status	Single	20	4
	Married	440	88
	Widowed	40	8
	Total	500	100
Age	21-30	10	2
	31-40	75	15
	41-50	115	23
	51 & Older	300	60
	Total	500	100
Educational Attainment	Elementary Level	75	15
	Elementary Graduate	180	36
	HS Level	35	7
	HS Graduate	115	23
	College Level	20	4
	College Graduate	45	9
	Vocational	5	1
	No response	25	5
	Total	500	100

Respondents were interviewed about their monthly income from poultry and livestock production. Because of poultry production, 36% of the respondents have an income of below Php 5,000, 2% have Php 10,000 above and 1% for monthly income of Php 5,001 to Php 10,000. From livestock production, 51% have an income of below Php 5,000, 26% of the respondents for a monthly income of Php 5,001 to Php 10,000, and 1% have a monthly income of Php 10,000 or above. Data imply that respondents can have an additional income in a monthly basis for their family by engaging in animal raising. As to the number of children, we can see that 39% of the respondents have 0 to 1 child, 34% have 2 to 3 children, 13% with 4 to 5 children, 5% have 6 to 7 and only 2% have 8 to 9 children. It can be noted that most of the respondents belong to a small number of a family with 0 to 3 children.

The farm size and farm ownership were part of the respondents' profile, 79% have 1 hectare and above land, 12% of the respondents owned 0.50-0.99 hectare, and only 4% of them occupied below 0.49 hectare. Most of them owned the land they occupied (97%) and only 2% are renting. The data imply that the respondents have enough area for them to continue their engagement in animal raising. Moreover, not all animal raisers have attended formal schooling or trainings on animal raising. However, through their personal experiences based on the number of years, they develop skills and their own management system for their animals.

Table 2. Monthly Income from Poultry and Livestock Production, Number of Children, Farm Size, & Farm Ownership

Particular		Frequency	Percent
Monthly Income			
Poultry	Below Php 5,000	180	36
	Php 5,001 to Php 10,000	5	1
	Php 10,001 to above	10	2
Livestock	below 5,000	255	51
	5,001 to 10,000	130	26
	10,001 and above	5	1

Number of Children	0 to 1	195	39.0
	2 to 3	170	34.0
	4 to 5	65	13.0
	6 to 7	25	5.0
	8 to 9	10	2.0
	No Response	35	7.0
	Total	500	100
Farm Size	below 0.49 hectare	20	4.0
	0.50- 0.99 hectare	60	12.0
	1 hectare and above	395	79.0
	No response	25	5.0
	Total	500	100
Farm Ownership	Owned	490	98.0
	Rented	10	2.0
	Total	500	100

For the number of years of their engagement in animal raising, 92% of the respondents engaged for 21 years and above, 3% with 16-20 years, 2% for 1-5 years engagement, and 1% for 6-15 years respectively. Ninety-eight percent (98%) of the respondents are living more than 20 years in the community. The sources of income of the respondents, aside from monthly income earned in animal raising, show that 88 respondents were also involved in rice and corn projects, and 58 were engaged in vegetables. This implies that respondents are not only involved in one production system, but they keep on engaging in other projects to earn more income.

Religion reveals that almost all of the respondents were Roman Catholics (93%), followed by IFI (4%), INC (1%), and Born Again (1%), respectively.

Table 3. Number of years of their engagement in animal raising and their stay in the community.

Particulars		Frequency	Percentage
Number of Years Engaged in Animal Raising	1-5 years	10	2
	6-10 years	5	1
	11-15 years	5	1
	16-20 years	15	3
	21 years and above	460	92
Number Of Years In The Community	10 to 20 years	10	2
	more than 20 years	490	98
	Total	500	100
Other Sources Of Income	Rice and corn	440	88
	Vegetables	290	58
	Total	500	100
Religion	Marine fishing	5	1
	Roman Catholic	465	93
	IFI	20	4
	INC	5	1
	Born Again	5	1
	Protestant	5	1
	Total	500	100

Inventory of the livestock and poultry animals raised by the farmers were conducted during the survey also. For the poultry, the highest population was the native chicken with 9,000, followed by layers with a total of 2,350, ducks 125, and turkeys 80 respectively. For livestock, the respondents have 830 cattle, followed by pigs with 395, carabaos with 375, goats with 235, and 5 horses. It implies that by population, the dominant group of animals raised by the respondents are the chickens, cattle, pigs, carabaos, and goats.

Table 4. Profile inventory of livestock and poultry animals raised by farmers in Guimaras.

Animal Raised		Total	Percentage
POULTRY	Layers	2,350	20.3
	Native chicken	9,000	77.9
	Ducks	125	1.1
	Turkeys	80	0.7
LIVESTOCKS	Pigs	395	21.5
	Goat	235	12.8
	Cattle	830	45.1
	Carabao	375	20.4
	Horse	5	0.3

Table 5 reveals the type of operation, production system, and sources of stocks. Most of the respondents were raising animals in a backyard operation, and 1% was commercial. These backyard raisers are practicing tethering (84%), semi-range (23%), intensive (7%), and range (6%). Although they were at a backyard level, they have already a system of managing the animals they raised because only 6% practice a range system. On the sources of stocks, 95% of them are raising stocks to produce by them, and only 5% purchased their stocks. It implies that the respondents are not used to introducing new stock to their farm for upgrading because keeping your own stocks was lead to a higher level of inbreeding.

Table 5. Type of operation, production system, and sources of stocks.

Particulars		Frequency	Percentage
Type of Operation	Backyard	495	99.0
	Semi-commercial	0	0.0
	Commercial	5	1.0
Production System	Range	30	6.0
	Semi-range	115	23.0
	Tethering	420	84.0
	Intensive	35	7.0
Sources of Stocks	Purchased	25	5.0
	Owned	475	95.0

Table 6 below reveals feeds, feed type, and feed supplements. In feeds, 58% use commercial feeds, 41% for locally mixed feed and 1% for adulterated, and most of them are using pelleted and mash feeds. Aside from feeds, respondents provided commercial supplements and organic supplements. In table 12, common feed ingredients used by the respondents are listed. Most of them are using rice bran, corn, and copra. Moreover, some are practicing scheduled feeding and the Ad libitum feeding system. However, using only three ingredients in feeding animals was limited also by the supply of nutrients.

Table 6. Feeds, feed type, and feed supplements.

Particulars		Frequency	Percentage
Feeds	Commercial	290	58.0
	Locally mixed feed	205	41.0
	Adulterated	5	1.0
Feed Type	Commercial	390	78.0
	Organic	10	2.0
	Both commercial and organic	100	20.0
Common Feed Ingredients	Rice bran	350	70.0
	Corn	225	45.0
Feeding system	Copra	50	10.0
	Ad libitum	85	17
	Scheduled feeding	320	34

Table 7 presents the breeds, mating system, breeding methods, and basis of selection. These are important to know because the data shows what type of animals the respondents are raising and the activities they have done to improve the animals under their care. On the type of breeds, most of the animals raised by the respondents are products of crossbreeding (88%) and there were upgraded animals (18%) noted during the survey. There were 77% practicing herd mating, 13% pen mating, and 1% hand mating. All of the respondents are practicing natural mating, with 92% of the respondents. Looking into the breeds of the animals, the presence of crossed animals is an indication that there are continuing efforts on animal improvement in the community. However, herd mating is very high; this is a practice of allowing the dam to be sired with other animals in the herd. This resulted from uncontrolled breeding, which causes difficulty in monitoring the bloodlines of individual animals. For poultry, almost all of the respondents are practicing natural mating. In selection, the respondents are looking at the breed with 97%, availability at 75%, growth rate at 37%, color and price at 14%, and body conformation at 12%. It is good to note that the respondents already have enough knowledge on how to select animals for breeding purposes, specifically on the breed and availability.

Table 7. Type of Breeds, mating system, breeding methods, and basis of selection.

Particulars		Frequency	Percentage
Type Of Breeds Of Animal Raised	Crossed	405	81.0
	Upgraded	90	18.0
	No response	5	1.0
Mating System	Hand mating	5	1.0
	Pen mating	65	13.0
	Herd mating	385	77.0
Breeding Methods	Natural	460	92.0
	No response	40	8.0
Incubation Of Eggs And Brooding	Natural	480	96.0
	Artificial	20	4.0
Basis Of Breeding Selection	Breed	97	97.0
	Color	14	14.0
	Body conformation	12	12.0
	Price	14	14.0
	Growth rate	37	37.0
	Availability	75	75.0

In animal raising, disease prevention is very important, because diseases may cause big losses to the farm operation. Animal raisers should have the capacity or knowledge about the activities that should be employed to prevent the presence of disease and infection or how to protect their animals from it. They must develop a herd health plan for this purpose.

The list of activities of the respondents on herd health management revealed that 77% of the raisers conducted vaccination, deworming 68%, vitamin and antibiotic supplementation 42%, provision of housing 15%, preventive medication 11%, immediate treatment and care 4%, rotational grazing 3% and 1% proper waste and dead animals disposal.

The higher percentage of vaccination and deworming were due to the efforts of local government units through their municipal agriculture office. However, it can be also noted that few of the respondents have housing for their animals, conducting preventive medication, immediate treatment and care, rotational grazing and they do not practice proper waste and dead animals disposal. These things should also be considered because these are important aspects to maintain the health condition of the animals.

On waste disposal, most of the respondents are practicing open dumping (65%), composting (17%), drainage canal (10%), and all of them do not have a septic tank for animal waste. However, almost all of the respondents take water from the onsite well for their animals.

In order to maintain the good health condition of the animals, raisers must also be responsible for waste disposal because dumping areas provide a better environment for disease-causing microorganisms to multiply and infect more animals. This was also harmful to the environment and the people living in the community.

Their sources of water for their animals are all from the site well. This is good to note that all of the raisers of San Lorenzo knew the importance of giving safe water to their animals.

Table 8. Herd health management, waste disposal, and sources of water.

Particulars		Frequency	Percentage
HERD HEALTH MANAGEMENT	Vaccination	385	77.0
	Preventive medication	55	11.0
	Provision of housing	75	15.0
	Deworming	340	68.0
	Proper waste and dead animals disposal	5	1.0
	Immediate treatment and care	20	4.0
	Vitamin/ Antibiotic Supplementation	210	42.0
	Rotational grazing	15	3.0
	Waste Disposal	Drainage canal	250
	Composting	425	17.0
	Open dumping	325	65.0
Sources of Water	On site well	485	97.0
	Water district	15	3.0

Table 9 below presents the production and marketing aspect of animal production in San Lorenzo. For the animal products they produced, 93% of the respondents are marketing their animals on a live basis, 53% were involve in slaughtering and marketing fresh meat, and 25% were producing table eggs. Therefore, the raisers of San Lorenzo are much more focused on the production and marketing of animals on a live basis. Like other agricultural enterprises, animal production is also facing problems in the operation. Moreover, the raisers should identify these to look for a possible way before those problems may arise.

On the problems in animal production of the animal raisers in the Province of Guimaras, there were 94% of the respondents answered that disease is a major problem, 90% considered the adverse climatic condition as their common problem in animal raising, 64% responded that they lack capital, 40% for marketing problem, 3% for transportation problem and 1% only for less technical knowledge.

One of the important aspects of animal production is the access of the animal raisers to information aside from attending formal training and seminars. This was a great help to them technically in the course of their operation. In marketing, 90 % of the respondents were in wholesale and only 6% were practicing farm retail. All of these were paid on a Cash-on-Delivery scheme. On the sources of information of the respondents on animal production, there were 96% of the raisers responded that they took information from the television and 88% from the radio

Table 9. Farm products, marketing, payment scheme, problems in animal production, and sources of information on animal production.

Particular		Frequency	Percentage
Farm Products Produced	Eggs	25	25.0
	Meat	53	53.0
	Live animals	93	93.0
Marketing	Wholesale	450	90.0
	Farm retail	30	6.0
Payment Scheme	Cash-on-Delivery	495	99.0
Problems in Animal Production	Transportation problems	15	3.0
	Adverse climatic condition	450	90.0
	Capital	320	64.0
	Marketing problem	200	40.0
	Less technical knowledge	5	1.0
	Diseases	470	94.0
Sources of Information on Animal Production	Radio	440	88.0
	Television	486	96.0

CONCLUSION

The livestock and poultry farmers who participated in the study were mostly male, married, 51 years old and above, elementary graduate, generated a monthly income of 5,000 and below from poultry and livestock raisings. Respondents have 1 to 3 children, having more than 1 hectare owned farm. They have already raised animals for more than 20 years since they were residing in the area. They also engaged in rice and corn farming. The farmers raised livestock animals such as cattle, pigs, carabao, and goats, while they have also raised native and layer chickens. Livestock farmers were backyard raisers using a tethering system of owned animals. They utilized pelleted commercial feeds, but those using locally mixed feeds use rice bran, corn, and copra as feed ingredients, wherein they feed their animals on schedule. They used crossed breed, using a natural method of herd mating, wherein they considered the breed in selecting stocks. The farmers commonly practiced vaccination, deworming, and vitamin/antibiotic supplementation for the health management of their animals. They sold their animals live as wholesale and cash on delivery basis.

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REFERENCES

- Badgley C., Moghtader, J., Quintero, E., Zakem, E., Chappell, J., Avilés- Vázquez, K., Samulon, A and Perfecto, I. (2007). Organic Agriculture and the Global Food Supply. Renewable Agriculture and Food Systems.
- Castro, A.D. (2011). Paper presented during the Roundtable Discussion on "How Sustainable is Organic Agriculture ?", NAST, PHL. Hyatt Hotel and Casino, Manila.
- Lambio, A. (2011). Prospect for sustainable organic chicken and egg production in the Philippines. Paper presented during the Roundtable Discussion on "How Sustainable is Organic Agriculture?", NAST, PHL. Hyatt Hotel and Casino, Manila.
- Lazo, S. H. and Gutierrez, Jr., O. (2011). Health Concerns on Organic Food: Food Safety Assurance. Paper presented during the Roundtable Discussion on "How Sustainable is Organic Agriculture?"
- Maghirang, R., Dela Cruz, R., and Villareal, R. (2016). How sustainable is organic agriculture in the Philippines. Trans. Nat. Acad. Sci. & Tech. (Philippines), Vol. 33 No. 2. <http://www.nast.ph/images/pdf%20files/Publications/NAST%20Transactions/NAST%202011%20Transactions%20Volume%2033%20Issue%20No.%202/4%20How%20Sustainable%20is%20Organic%20Agriculture%20in%20the%20Phils%20Rodel%20G.%20Maghirang%20et%20al.pdf>
- Medina, C. (2011). Paper presented during the Roundtable Discussion on "How Sustainable is Organic Agriculture." NAST, PHL. Hyatt Hotel and Casino, Manila.
- Risku-Norja, H. And M. Mikkola. (2009). Systemic sustainability of organic farming: A review. Agronomy Research 7(Special issue II), 728–736
- Scialabba, N. E. (2007). Organic Agriculture and Food Security. International Conference on Organic Agriculture and Food Security. 3-5 May. FAO, Italy
- Uychiat, E. S. (2011). Paper presented during the Roundtable Discussion on "How Sustainable is Organic Agriculture?", 14 March 2011, NAST, Hyatt Hotel and Casino, Manila.