Identification of Agronomic Crops Grown in the Locality of Hinunangan, Southern Leyte, Philippines

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Abstract

This study was conducted to: (1) identify and describe some of the existing agronomic crops planted in the locality of Barangay Manalog and Bangcas, in Hinunangan, Southern Leyte, Philippines, (2) determine the cropping systems adopted by the farmers in their farms; and (3) determine the crops that grown for commercial purposes in the Barangay Manalog and Bangcas, in Hinunangan, Southern Leyte. Data were gathered through a series of documentation using a pen, bond paper, camera, and additional data were taken from the office of the Department of Agriculture in the Municipality of Hinunangan, Southern Leyte. The data gathered were supported by the Department of Agriculture (DA) files. The survey revealed only three crops grown under lowland conditions—likewise, 15 upland agronomic crops grown primarily annually. Among the crops identified, only rice, corn, cassava, coconut, and pineapple were commercially produced in Barangay Manalog and Bangcas. With rice having the largest production area using mono-cropping practices and intercropping for upland crops, both perennial and annual crops.

Keywords: Agronomic crops, commercial and subsistence, lowland and upland production

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INTRODUCTION

Crop identification helps assess many important variables critical to proper management (Noble Research Institute, 2001). It allows farmers and agronomists to differentiate unwanted plants or weeds having similar appearance and growing in the same field from the crops [e.g., rice and *Echinochloa* weeds are morphologically similar but can be differentiated through the ligule and auricle structure of rice (FAO, 2021)]. Crops have different growth habits, growth requirements, growing season, adaptability, and management practices. Still, they can be classified or grouped based on: taxonomic classification (e.g., pulses belong to the Papilionoideae subfamily), range of cultivation (i.e., plantation crops), place of origin or distribution (i.e., temperate crops), commercial classification, and economic classification, among others (Singh, 2018). Thus, it is essential to identify and classify crops to know their uses and how to manipulate them (Noble Research Institute, 2001). The two Barangays Manalog and Bangcas, in Hinunangan, Southern Leyte was identified to be surveyed since this is one of the areas identified by the Department of Agriculture that produced crops sold in the market of Hinunangan. Southern Leyte.

This study aimed to identify and describe some of the existing agronomic crops planted in the locality of Barangay Manalog and Bangcas, determine the cropping systems adopted by the farmers, determine the crops that grown for commercial purposes in the Barangay Manalog and Bangcas, in Hinunangan, Southern Leyte, Philippines.

MATERIALS AND METHODS

A survey on agronomic crops was conducted at Hinunangan, Southern Leyte, on June 5-20, 2021. Two barangays (Manalog and Bangcas) were surveyed and documented as part of the study site. The typical lowland and upland crops in the areas visited were taken and documented. Documentation of some of the crops was done with the use of the camera. Data were gathered using a pen and bond paper, and additional data were taken from the office of the Department of Agriculture in the Municipality of Hinunangan, Southern Leyte, Philippines.

RESULTS AND DISCUSSION

The results of the survey are presented in Table 1-3 and Figure 1-8. The study found that rice, corn, and cassava are among the crops grown for commercial purposes. The other crops like peanut, sweetpotato, eggplant, mungbean, string bean, and winged bean were grown for subsistence type of production. They are only grown for a small area.

Table 1. Common lowland agronomic crops grown Barangay Manalog and Bangcas, in Hinunangan, Southern Leyte

Common Name	**Scientific Name**	**Type of Production**	**Family Name**	**Primary use in the locality**	**Primary Use Internationally**	**Life Span**
Rice	*Oryza sativa* L.	Commercial	Poaceae/ Gramineae	Staple food and some used for the production of products such as suman, puto, and bebingka	Staple food. Used for the manufacture of flour, starch, and oil (CABI, 2019)	3-5 months
Gabi	*Colocasia esculenta*	Subsistence	Araceae	As food and vegetables and by-product for sagmani and budbud	primarily for its edible corms, a root vegetable most commonly known as taro	7-10 months
Kangkong	*Ipomoea Aquatica*	Subsistence	Convolvulaceae	Vegetable and feed to animal pigs	Vegetable	2-10 Months

Table 2. Upland agronomic crops grown in Barangay Manalog and Bangcas, in Hinunangan, Southern Leyte

Common Name	**Scientific Name**	**Type of production**	**Family name**	**Primary use in the locality**	**Primary Use**	**Life Span**
Coconut	*Cocos nucifera*	Commercial	Arecaceae	Commercially sold 'buko' to interested buyers, processed to copra.	Used for food (can be eaten fresh), copra production (for oil), and manufacture of ropes, mats, baskets, brushes, brooms, etc. (Brittanica, 2019).	60-80 years
Pineapple	*Ananas comosus*	Commercial	Bromeliaceae	Snacks items sold to interested clients	Fruit is edible and can be eaten raw or used as an ingredient in Pan-Asian cuisine and pastry (Britannica, Pineapple, 2020).	Commercial pineapples take 32-46 months (Grant, 2021).
Banana	*Musa* sp.	Subsistence	Musaceae	Cooked banana, other sold to the market	Fruit is widely consumed in the tropics, eaten fresh or cooked—an excellent source of dietary fiber and potassium (Britannica, 2020).	6-10 years
Corn	*Zea mays* L.	Commercial	Poaceae/Gramineae	For grains as food to human and animals	Used for food as cereal, flour/starch, oil/fat, vegetable (CABI, 2019)	3-4 months
Cassava	*Manihot esculenta* L.	Subsistence	Euphorbiaceae	Sold to interested clients, sold for chips, and proceed to starch by the commercial buyers	They are used for food as a primary carbohydrate source, used for animal feed, and industrial purposes like starch production (Waisundara, 2018).	6-7 months for fast-growing cultivars (Alves, 2002).
Peanut	*Arachis hypogaea* L.	Subsistence	Fabaceae	Processing into peanut butter by the commercial buyers	Good source of protein, fiber, magnesium, and phosphorus. Raw material for the manufacture of oil and bakery	3-4 months

					products (The Peanut Plant, n.d.).	
Sweetpotato	*Ipomoea batatas* Lam	Subsistence	Convolvulaceae	For food and processing, some are utilized for vegetables and animal feeds.	Vines and foliage can be used as animal feed, fodder, or forage, and human food (vegetable). Tubers are used as a staple food and for the manufacture of flour/ starch (CABI, 2019).	3-6 months
Eggplant	*Solanum melongena*	Subsistence	Solanaceae	For vegetables	Used in cuisine. Good source of fiber, folic acid, potassium, etc. (Perry, n.d.)	70-120 days
Mungbean	*Vigna radiata* L.	Subsistence	Fabaceae	For vegetables	They were used for food as a source of protein and vitamins—an excellent alternative to meat.	70 days
String bean	*Phaseolus vulgaris*	Subsistence	Fabaceae	For Vegetables	Used for food: pods are edible and cooked in many vegetable dishes. The primary source of protein and starch, and small amounts of carbohydrates, sugar, fiber, and fat.	50-70 days
Winged bean	*Psophocarpus tetragonolobus*	Subsistence	Fabaceae	For vegetables	Used for food: leaves, pods, flowers, and roots are edible. It is a good source of carbohydrates and dietary fiber.	70 days

Bitter gourd	*Momordica charantia*	Subsistence	Cucurbitaceae	For vegetables	Important vegetable crop with medicinal value, particularly anti-diabetic properties. Suitable for weight loss and cholesterol control.	110-130 days

Figure 1. Lowland rice in Manalog, Hinunangan, Southern Leyte

Figure 2. Sweet potato, cassava, and winged bean are grown in a backyard in Bangcas A, Hinunangan, Southern Leyte

Figure 3. Coconut in Bangcas A, Hinunangan, Southern Leyte

Figure 4 showed some intercropping systems adopted by the farmers Manalog, Hinunangan, Southern Leyte for perennial crops. Some farmers also intercropped rootcrops from corn and other agronomic crops.

Figure 4. Pineapple plants are grown under the perennial trees in Manalog, Hinunangan, So. Leyte

Figure 5 shows that vegetables like string beans, mungbean, bitter gourd, and eggplant are commonly sold in the market. These crops are grown in backyards and for family consumption only, but the surplus was sold to the middlemen and brought to the public market. The most significant commercial production in terms of area is rice since Hinunangan has vast plain lands and is known as the rice granary of Southern Leyte.

Figure 5. Some vegetables sold in Hinunangan public market

CONCLUSION

The common crops surveyed and identified had different growth habits ranging from herbs, shrubs, climbers, creepers, and trees. In upland conditions, the agronomic crops are mixed with annuals and perennials. On the other hand, in lowland conditions, all the crops grown were annuals. Among the crops grown, only rice, corn, coconut, cassava, and pineapple were commercially produced for the commercial market, with rice having the most significant area for production. The farmers adopted a mono-cropping system in lowland conditions, particularly rice and intercropping for upland conditions using perennial and annual crops.

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