

Abaca (*Musa textilis*) Production Profile of Davao Oriental

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Abstract

There are 2,164 farmers cultivating 4,710.93 ha planted to abaca in the province. Banaybanay and San Isidro are the two of, the eleven municipalities of Davao Oriental that do not produce abaca. Of the 9 abaca-producing municipalities, Mati and Gov. Generoso have less than 100 has devoted to abaca production. The average age of an abaca farmer is 40.98. His household has an average number of 6 members with most still in the elementary. Mandayan people dominates abaca farming in the province followed by Cebuano's. Though majority are full-time abaca farmers, his average annual income is very low at P26,097.87 as this is not derived solely from abaca growing. The average abaca land area is 2.02 ha located in an average of 2.49 km away from any access road. The average yield per abaca farmer was pegged at 440.51 kg/ha/yr. There are 39 fiber traders stationed in varying numbers in different municipalities. The average price for abaca is PI 1.62/kg. The product is marketed in an "all-in" basis. Aside from fiber, there are a few womenfolk engaged in dagmay weaving which is the initial material in making bags, sandals, skirts, and the like. Male labor dominates in the abaca farming. Bigger share of male labor is hired especially during laborious operations. Radio is popular among abaca farmers. Meetings, seminars on abaca and the like are not well attended. Low farm productivity, high incidence of bunchy top and mosaic diseases, instability of price, and circuitous marketing systems are among the problems identified by the farmers. Research should be undertaken in the field of crop protection and economic studies. Massive information dissemination and advocacy of the provincial government towards abaca production should be intensified.

Keywords: *Musa textilis*, abaca, Davao Oriental, production profile, disease incidence

Introduction

Abaca (*Musa textilis*, Nee) is obtained from the leaf sheath of the plant which is known worldwide as Manila hemp (FIDA 2000). It is the staple fiber in the Philippines for weaving.

The Philippines is the leading abaca producer and-supplier in the world market. The average production of 67,224 MT of abaca was recorded from 1994 to 1996 from 44 provinces (BAS, 1997). In 1999, the Philippine production was noted at 71,235 MT from abaca grown in a total land area of 118,119 has (FDA, 2000). The highest abaca-producing provinces are located in Eastern Visayas, the Bicol Region and Southern Mindanao. In 1999, the national abaca production of 64,200 MT represented about 85% of world abaca production. The remaining 15% is produced in Ecuador, the world's only other commercial producer of abaca fiber (FIL)A, 2000). Abaca plays a major role in the, economy of Davao Oriental. The province leads in abaca production in Region XI (Southern Mindanao) and ranked fourth in fiber production in the country in 1999 (FIDA, 2000).

The provincial government recognizes abaca as one of its economic pillars thus a Provincial Abaca Board was created by virtue of Executive Order no. 2 series of 1995. The board is responsible for the formulation of policies and programs towards the development of the industry.

Developmental programs and policies to be formulated should be sensitive to the real scenario of the abaca industry thus this study was undertaken as it was deemed necessary.

Methodology

A survey was conducted through interview schedules. Additional information was taken from the minutes of meetings of the Provincial Abaca Board and on the reports of the Fiber Development Authority (FIDA) office in Mati, Davao Oriental. There were 400 farmer-respondents distributed proportionally to eight municipalities involved in abaca production. The distribution of respondents was as follows:

Municipality	No. of Respondents
Boston	70
Cateel	80
Baganga	64
Caraga	40
Manay	73
Tarragona	36
Mati	9
Lupon	28
Total	400

Sample size was obtained using the formula below:

$$n = \frac{N}{1 - N e^2}$$

where: n = sample size
N = total number of abaca farmers
e = allowable error

The data gathered were Summarized using Microsoft Excel and presented in cross-tabulation forms for the variables of interest. Ratio scale measurements were averaged using the arithmetic mean. Count data are presented in percentages. The summary for the gender-labor contributions were estimated in terms of the proportion of the gender to the grand total of the combined labors spent for the abaca production system for each abaca farmer.

The FIDA technicians who served as enumerators took note of the incidence of diseases in the abaca farms using a one-page questionnaire.

Results and Discussion

Some demographic characteristics of the abaca farmers of Davao Oriental

There are about 2,164 farmers involved in abaca production in the province with a total land area of 4,710 hectares (Table 1).

The ages of abaca farmers ranged from 15 to 70 years with an average of 40.98 (Table 2). Household size ranged from 1 to 16 members with an average member of 6. All the farmers had some education as 70.7% reached elementary while others went to secondary school (25.07%) and a few reached colleges (4.21%).

The Mandayans dominated the ethnic groups among the farmers in the 8 municipalities. This was followed by Cebuanos, Boholanos, Leytefios, Siquihomons, Ilocanos, Muslims, Surigaonons and Samarefios in descending order.

Table 1. Area planted with abaca and the number of farmers involved in the production in the different municipalities of Davao Oriental

Municipality	Area Planted (ha)	No. of Farmers
Boston	600.00	398
Cateel	636.25	425
Baganga	547.73	337
Caraga	432.70	218
Manay	1,863.00	405
Tarragona	359.25	185
Mati	71.00	50
Gov. Generoso	3.00	2
Lupon	198.00	144
Total	4,710.93	2,164

The abaca farmer in Davao Oriental earned as low as P36,000 to as much as P200,000 per year with an average of P26,097.87. Aside from abaca, they derived additional income from coconut, corn, vegetables, coffee, falcata, fishing, teaching and fish vending. The province is the leading coconut producer in the region with an average of 156,249 has. devoted to coconut production in 1994-1996 (BAS, 1997).

Abaca production, marketing and utilization

Production. Davao Oriental leads in the abaca production in Region XI (BAS, 1997) while ranking fourth in the national (FIDA 2000).

The average production volume is estimated at 2,120 metric tons per year. At present a total of 2,164 hectares are planted to abaca (Table 1). These are found in the municipalities of Boston, Cateel, Bagangä, Caraga, Manay, Tarragona, Mati, Governor Generoso and Lupon.

Table 2. Summary statistics of socio-demographic characteristics of the abaca farmers in Davao Oriental.

	Municipality								
	Boston	Cateel	Baganga	Caraga	Manay	Tarragona	Mati	Lupon	Davao Oriental
Age									
Range	16-70	19-68	17-65	23-70	23-68	15-63	20-61	15-70	15-70
Average	43.38	44.00	43.59	43.65	43.76	38.02	35.00	40.98	41.54
Household size									
Range	2-11	1-16	3-10	3-11	2-10	1-10	2-10	3-11	1-16
Average	5.70	6.46	6.10	6.62	5.62	5.33	4.58	6.20	5.83
Educational attainment (%)									
Elementary	54.24	65.76	60.52	65.45	87.23	86.20	58.01	88.23	70.70
Secondary	27.11	32.88	39.47	29.09	10.63	13.79	38.82	8.82	25.07
College	18.64	1.36	0	5.45	2.12	0	3.17	2.94	4.21
Ethnic/Tribe (%)									
Mandaya	94.82	60.34	76.59	96.49	96.0	62.16	30.00	85.36	75.22
Cebuano	-	24.14	12.76	1.75	4.0	21.62	40.00	12.19	14.56
Boholano	-	8.62	-	1.75	-	8.10	20.00	2.43	5.11
Leyteño	3.44	3.44	4.25	-	-	2.70	10.00	-	0.98
Muslim	-	3.46	4.28	-	-	-	-	-	0.96
Siquihodnon	-	-	-	-	-	2.70	-	-	0.33
Surigaonon	-	-	2.12	-	-	-	-	-	0.26
Ilocano	-	-	-	-	-	2.70	-	-	0.34
Samareño	1.72	-	-	-	-	-	-	-	0.21
Annual Income									
Range (P)	4,000-100,000	5,000-72,000	4,000-85,000	5,000-120,000	3,600-60,000	3,600-75,000	3,800-60,000	5,000-200,000	36,000-200,000
Average (P)	31,703.38	28,980.00	31,756.75	30,641.30	16,661.64	22,766.66	15,786	30,487.25	26,097.87
Main source of income (%)									
Abaca	66.07	52.56	35.75	13.33	90.00	35.91	20.00	14.28	40.99
Coconut	23.21	29.48	53.57	76.66	10.00	53.38	40.00	-	35.78
Corn	-	11.54	8.92	3.33	-	10.71	10.00	35.71	10.02
Coffee	-	2.56	-	-	-	-	-	28.57	3.89
Vegetable	-	3.84	1.78	-	-	-	30.00	21.42	7.13
Carpentry	1.78	-	-	-	-	-	-	-	0.22
Falcata	1.78	-	-	-	-	-	-	-	0.22
Teaching	-	-	-	6.66	-	-	-	-	0.83
Fishing	5.37	-	-	-	-	-	-	-	0.67
Fish vending	1.78	-	-	-	-	-	-	-	0.22

Abaca farms have been established in areas released either for Integrated Social Forestry (ISF), cadastrated public lands with few titled lands and with a majority illegally established in logging concession areas (Abaca Dev. prog. For Davao Oriental, 1999-2003). Eighty-six percent of farmers tilled their land fulltime while 13 are part-time farmers. Although known to be public lands, farmers viewed themselves owners with titles (95.06%), with only 3.01% as tenants and 1.24% as part-time owners (Table 3).

Each farmer cultivates an average of 4.72 ha devoted to the production of abaca and other crops. The area cultivated for abaca by farmers ranges from 0.15 to 16 ha with an average land area of 2.02 ha. The estimated yield ranged from 20 to 1000 kg/ha/year with yield averaging at 440.51 kg/ha/yr.

The age of abaca farm ranges from 1 to 69 years old with an average of 8.74. The abaca farms are usually located from 0 to 21 km with an average of 2.49 km away from any existing access road.

Table 3. Abaca production-related information

	Municipality								
	Boston	Cateel	Baganga	Caraga	Manay	Tarragona	Mati	Lupon	Davao Oriental
Farming status (%)									
Full-time	78.68	97.18	84.44	92.98	80.00	82.60	80.00	92.86	86.09
Part-time	21.30	2.82	15.56	7.02	20.00	17.40	20.00	7.14	13.91
Tenurial status (%)									
Owner	98.30	89.18	94.11	92.85	93.88	94.59	100.00	97.56	95.06
Tenant	1.69	5.40	5.89	5.36	6.12	2.70		2.44	3.70
Part-owner		5.40		1.79		2.70			1.24
Area cultivated (ha)									
Range	1-14	0.75-30	1.5-30	5-16	0.25-14	0.25-20	5-4	1.25-30	0.25-30
Average	4.12	6.28	7.23	5.87	3.66	3.98	1.5	5.08	4.72
Area devoted to abaca (ha)									
Range	0.25-7	0.25-16	0.20-5	0.40-15	15-21	0.25-15	0.25-5	0.25-5	0.15-16
Average	2.03	1.9	1.71	2.24	3.34	2.0	1.30	1.61	2.02
Age of abaca plantation (yr)									
Range	3-33	1-25	2-69	1-24	0.75-50	0.33-23	1-5	2-28	1-69
Average	15.73	7.19	14.22	9.98	13.90	5.42	2.68	5.10	9.27
Distance from access road (km)									
Range	0.15-12	0-7	0.20-6	0-21	0-15	0-10	0-5	0-12	0-21
Average	2.80	1.87	2.38	5.06	3.08	1.50	1.38	1.82	2.49
Cropping system followed (%)									
Monocropping	22.09	31.14	2.19	19.28	46.43	11.32	10.60	12.19	19.40
Multiple cropping	75.58	49.18	96.70	60.24	41.07	75.47	86.52	85.37	71.26
Intercropping w/ Falcata	2.32	19.67	1.09	20.48	12.50	13.21	2.88	2.44	9.32
System of planting abaca (%)									
Random or scattered	45.90	57.35	76.00	70.37	97.78	80.00	90.00	26.83	68.02
Regular arrangement	54.10	42.65	24.00	29.62	2.22	20.00	10.00	73.17	31.98
Annual production kg/ha									
Range	50-1450	50-900	20-1000	50-1000	50-700	40-700	40-2500	0-1000	20-1000
Average	603.13	614.73	644.74	512.93	274.82	212.33	269.87	391.5	440.51

Abaca is grown side by side with other crops (multi-cropping), notably falcata while others are grown as sole crop (19.40%). A minority (31%) grows abaca with a regular spacing while majority of the farms have abaca randomly planted.

Marketing and price information. There are 39 existing fiber traders and other small middlemen responsible in the marketing of abaca fibers locally as well as to different grading/baling establishments in Davao City. Of these, 10 are found in Manay, 12 in Baganga, 2 in Boston, 9 in Cateel, 3 in Caraga and 3 in Mati. The product usually passes from producer to middlemen and to the trader. Farmers do not sort their product instead they sell in an “all-in” basis. Most of the time price is set by traders/buyers to as low as five P5.00 to as high

Table 4. Marketing practices and price of abaca

	Municipality									
	Boston	Cateel	Baganga	Caraga	Manay	Tarragona	Mati	Lupon	Davao Oriental	
Price (P)										
<i>Range</i>	5-15	7-32	12-25	12-21	6-15	8-18	7-24	7-25	5-25	
<i>Average</i>	11.25	16.38	16.02	14.43	10.37	10.85	13.65	13.57	13.32	
Do you market all your produce? (%)										
<i>Yes</i>	100	100	100	94.74	100	100	100	96.55	98.91	
<i>No</i>	-	-	-	5.26	-	-	-	3.45	1.09	
Price set by (%)										
<i>Farmer</i>	-	1.54	-	1.75	-	3.45	-	13.33	2.5	
<i>Businessman / buyer</i>	91.67	98.46	100	96.49	100	96.55	100	86.67	96.23	
<i>Cooperative</i>	3.33	-	-	-	-	-	-	-	0.42	
<i>Both farmer and buyer</i>	1.61	-	-	-	-	-	-	-	0.20	
<i>FIDA technician</i>	3.33	-	-	-	-	-	-	-	0.42	
<i>DA</i>	-	-	-	1.75	-	-	-	-	0.22	
Source of price information (%)										
<i>Farmer</i>	-	3.22	15.00	-	-	3.57	-	-	2.72	
<i>Businessman / buyer</i>	100	-	61.25	100	100	92.86	100	100	81.76	
<i>Cooperative</i>	-	93.56	-	-	-	3.57	-	-	12.14	
<i>Both farmer and buyer</i>	-	-	-	-	-	-	-	-	-	
<i>FIDA technician</i>	-	3.22	15.00	-	-	-	-	-	2.28	
<i>DA</i>	-	-	8.75	-	-	-	-	-	1.09	
Mode of payment (%)										
<i>Consignment</i>	-	25.37	-	33.33	2.04	-	-	-	7.59	
<i>Paid in advance</i>	11.29	1.49	85.71	3.5	26.53	52.17	-	-	22.58	
<i>Paid upon delivery</i>	87.09	73.13	14.29	59.65	55.10	47.83	100	96.67	66.72	
<i>Credit paid in lump sum</i>	-	-	-	3.51	2.04	-	-	3.33	1.11	
<i>Credit paid in installments</i>	1.61	-	-	-	14.29	-	-	-	1.98	

as P25.00/kg with an average of PI 1.62/kg. Farmers are usually paid upon delivery (68.57%), some are paid in advance (27.58%), others through consignment basis, or credit but paid in lump sum or installment. They learn about the prevailing price mostly from the buyer or businessman (81.76%), sometimes from the cooperative (12.14%) and seldom from either the FIDA technician or the Department of Agriculture technician (Table 4).

Utilization of abaca. There are few womenfolk who are engaged in the unique art of

weaving abaca known as dagmay (Plate 1). A weaving center was established by the provincial government located in the tourism compound of Mati. This center aims to showcase dagmay weaving, fibrecrafts and finished products.

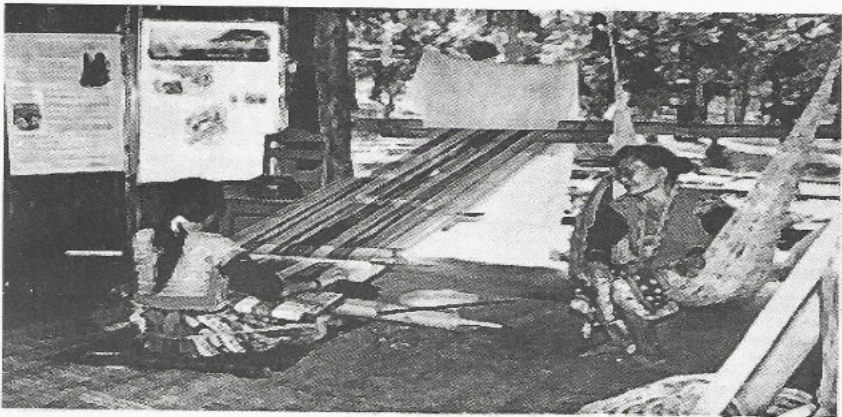


Plate 1. *Dagmay* weaving

Gender — Labor Distribution. Male labor dominated in abaca production at about 97.20% while female labor contributed 2.79% (Table 5). The husband contributed 40.46% of the labor requirement. The wife contributed

2.25% while the male and female children participation was 20.60 and 0.20%, respectively. Hired male labor was at 36.13% while hired female labor was 0.34%:

Table 5. Percentage gender labor distribution in abaca production systems in Davao Oriental

Activity	Husband	Wife	Children		Others	
			Male	Female	Male	Female
Land clearing	23.98	3.29	13.15	1.20	57.90	0.48
Preparation of stakes and staking	27.82	6.08	19.13	0.58	46.39	0
Hole digging	34.68	4.03	19.15	0.40	41.34	0.40
Hauling of seedpieces	41.64	2.76	24.13	0.22	31.03	0.22
Planting	32.11	4.63	19.59	0.54	40.14	2.99
Planting of shade trees	48.92	3.80	35.32	0	11.96	0
Replanting of missing hills	61.97	3.62	21.01	0	13.40	0
Weeding/removal of dried leaves	39.33	2.02	21.57	0	37.08	0
Spraying of insecticides/fungicides	61.54	0	26.92	0	11.54	0
Roguing of diseased plants	66.00	1.00	19.00	0	14.00	0
Fertilizer application	42.86	0	10.71	0	46.43	0
Topping of leaves	47.43	1.03	21.65	0	29.89	0
Tumbling and piling of stalks	29.76	0.94	22.22	0.38	46.70	0
Tuxying and hauling tuxtes	24.48	1.75	18.36	0	55.24	0.17
Stripping and drying	26.38	0.99	18.05	0	54.58	0
Grading and sorting	42.70	0.73	15.69	0	40.88	0
Bundling	38.61	0.74	23.51	0.25	36.89	0
Hauling of fibers	33.67	1.28	19.89	0.26	44.64	0.26
Storage	44.91	4.08	22.44	0	26.53	2.04
Grand Total						1900.00

% male contribution to labor = 97.20
 % female contribution to labor = 2.79
 % husband contribution to labor = 40.46
 % wife contribution to labor = 2.25
 % male contribution to labor = 19.41
 % female contribution to labor = 0.38
 % hired male contribution to labor = 36.13
 % hired female contribution to labor = 0.34

The labor contribution of the head of the family was distinctly noticeable in almost all of the operations in the abaca production specifically in hauling of seed pieces; planting of shade trees; replanting; weeding and removal of dried leaves; spraying of pesticides; roguing of diseased plants; topping of leaves; grading and sorting; bundling and storage. Hiring of male laborers was generally required in land clearing; preparation of stakes and staking; planting; fertilizer application; tumbling and piling of stalks; tuxying and hauling tuxies; stripping; and drying and hauling of fibers. The wife, the male and female children to some degree help in some of the activities in abaca production. The male children help heavily in the planting of shade trees (35.32%) and spraying of pesticides (26.92%).

Information Communication Support Services for Abaca Farmers

Radio is quite popular among abaca farmers as a medium of information dissemination (Table 6). Television as well as newspapers are not common maybe because of the absence of electricity and efficient transportation system.

Table 6. Communication systems available

	Municipality								
	Boston	Cateel	Baganga	Caraga	Manay	Tarragona	Mati	Lupon	Davao Oriental
Information system available (%)									
<i>Radio</i>	15.16	39.10	34.71	53.76	54.54	50.00	20.69	32.17	37.52
<i>TV</i>	4.33	2.26	4.13	2.15	-	-	10.34	2.61	3.22
<i>Newspaper</i>	-	0.75	1.65	1.08	1.82	-	-	-	0.66
<i>Technician</i>	13.36	14.29	15.70	6.45	10.91	5.0	17.24	20.87	12.98
<i>Seminars</i>	16.61	10.53	12.40	13.98	14.54	5.0	13.79	12.17	12.38
<i>Training</i>	16.25	10.53	13.22	5.38	1.82	6.67	13.79	11.30	9.87
<i>Farmers' Field School</i>	1.08	0.75	1.65	-	-	-	-	-	0.44
<i>Model farm</i>	5.42	2.25	0.83	-	-	-	-	-	1.06
<i>Meeting</i>	19.45	18.80	9.92	15.05	7.27	26.22	20.69	19.13	17.07
<i>Brochures/ bulletins</i>	8.30	0.75	5.79	2.15	9.10	6.56	3.45	1.74	4.72
Is there a technician assigned in the area (%)									
<i>Yes</i>	91.30	71.43	87.80	48.00	24.14	95.65	83.33	94.59	74.53
<i>No</i>	8.70	28.57	12.20	52.00	75.86	4.35	16.66	5.41	25.47
How often do you have the opportunity to discuss problems related to abaca production with a technician (%)									
<i>Often times</i>	33.33	50.00	7.69	63.64	35.71	44.45	25.00	56.25	39.51
<i>Once a year</i>	11.90	-	15.38	9.09	21.42	22.22	41.67	6.25	15.99
<i>Seldom</i>	54.76	50.00	76.92	27.27	42.86	33.33	33.33	37.50	44.49

Farm technicians are available in limited areas. Meetings, seminars and trainings are very good media in disseminating technology information but are not well attended by farmers. This includes Farmers' Field Schools (FFS) being administered by FIDA. Brochures and bulletins of abaca related information is circulated and received by a relatively few farmers. Model abaca farms are established in selected areas and not in all municipalities.

Most of the abaca farmers recognize the presence of technicians in the area but seldom discuss problems related to production with them. About 40% have the opportunity of availing the technicians' services.

Perceived Problems

The growth of the abaca industry is not without any problems. Presented below are the factors/problems that impede the further development of the abaca industry in Davao Oriental.

Low farm productivity. Abaca farming in Davao Oriental is largely dominated by small land holdings. The randomly scattered type of planting does not maximize the production per unit area (Plate 2). Technology information is very minimal. The location of farm is not so accessible where farm input is very difficult to transport since horses are the only way of transportation.

Most of the farmers followed hand-stripping method of extracting fiber resulting in poor quality. While mechanized stripping has definite advantage in terms of yield over hand stripping, the prohibitive cost of a machine prevents our small farmers from using this method. The provincial government distributed about 8 stripping machines but these are located in barangays.

In order for the Philippines to be globally competitive, the government must exert all efforts to increase the productivity of abaca, lower the cost of production and improve the quality of the fiber and fiber products through technological developments.

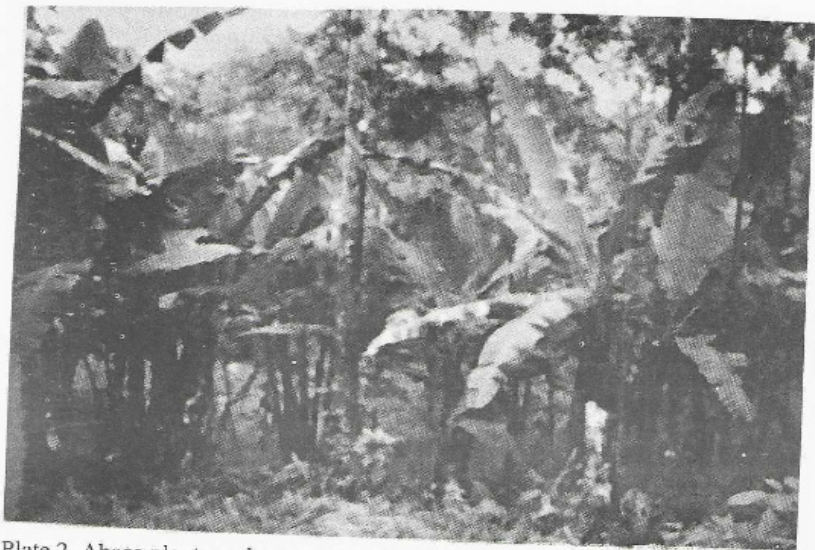


Plate 2. Abaca plants under some growing forest trees

Instability of price and circuitous marketing system. The prices of abaca always depend on supply and quality as is title to other agricultural commodities. Most of the farmers do not sort their product but sell their products in an all-in basis. Fibers are ungraded because of fanner's lack of knowledge on fiber grading and classification. Information of price often comes from the buyers.

The transfer of fiber from the farm to the end-users involves numerous middlemen. The distribution network often starts from the barrio dealer to other dealers who accumulate increasing volumes of traded fiber and then on to exporters and/or processors.

Incidence of bunchy top and mosaic diseases in the province. Eighty-two (82%) percent of the abaca-producing areas in the province is already infected with diseases. Of this, 21.32% is infected with bunchy top and 60.76% for abaca mosaic virus (Plate 3, Table 7). Only 17.91% of the area now planted to abaca appear clean and disease free.



Plate 3. Abaca infected with abaca mosaic virus

Diseases truly remain the principal enemy of abaca industry (FIDA, 1990, 1991). Mosaic and bunchy-top are known to be most destructive. Abaca mosaic-infected plants have light green or yellowish leaves. Spindle-shaped chlorotic streaks 20 to 30 mm long by 2 to 3 mm wide run parallel to the leaf veins and from the midrib to the leaf margins. Abaca mosaic inhibits the growth and weakens the stalks of the infected plants which reduces its commercial value. Aphids readily acquire and transmit the virus in minutes, hence making it difficult to control the disease.

Municipalities like Boston, Baganga, Manay, Tarragona and Mati have a number of areas that are not affected with the diseases.

Majority (58.26%) of the farmers implemented some measures against spread of these diseases but a considerable number never make. moves to contain them.

Table 7. Percentage disease incidence and management

	Municipality								
	Boston	Cateel	Baganga	Caraga	Manay	Tarragona	Mati	Lupon	Davao Oriental
Presence of disease (%)									
<i>Bunchy top</i>	1.42	16.98	14.06	9.10	9.58	27.78	50	41.67	21.32
<i>Abaca mosaic Virus</i>	70.00	60.71	68.75	90.90	50.68	66.67	20	58.33	60.76
<i>No disease</i>	28.58	22.31	17.18	-	39.72	5.56	30	-	17.91
Control measure for disease (%)									
<i>Do nothing</i>	37.28	50	57.14	42.86	46.15	66.67	-	35.71	41.98
<i>Rouging</i>	6.78	14.81	28.57	14.28	53.84	20.00	80.00	21.42	29.96
<i>Sanitation</i>		9.26	-	-	-	-	2	-	1.15
<i>Cutting of infected stalks</i>	55.93	25.93	14.28	42.86	-	13.33	20.00	42.86	26.89

Summary

Abaca plays a major role in the economy not only of Davao Oriental but the country as a whole. The province leads in abaca production in Region XI. There are 2,164 farmers in 4,710.93 ha planted to abaca distributed in varying areas in 9 municipalities. Abaca farmers are quite young. Average number of household members is 6. Mandayan people dominated those engaged in abaca farming. Average land area devoted to abaca is 2.02 ha located in an average of 2.49 km away from any access road. The average annual income is P26,097.87 and the average price of “all-in” abaca fiber is PI 1.62/kg. Few womenfolk are engaged in *dagmay weaving*. While the abaca farming of the province is dominated by male laborers, the females help in some operations of abaca production. Radio is very popular among farmers as a source of any information. Farmers in general are not so interested in attending meetings and seminars. Low farm productivity, presence of abaca diseases, instability of price and circuitous marketing systems are some of the identified factors that hinder the development of the industry.

Recommendations

Based on the results of the study, it is recommended that massive information dissemination campaign on sustainable abaca production be done through the available information system to increase area devoted to the crop productivity; as well as to improve craftsmanship. Alongside is the need to establish nurseries for disease-free planting materials, local fiber processing plant and abaca farmers’ cooperative. The continuous rehabilitation of diseased abaca farms is an urgent agenda for government in addition strong representation to the provincial government to establish farm to market roads, more assistance for stripping machines and other farm inputs. Some researchable areas include: varietal adaptation evaluation in different municipalities

involved in abaca production, economic studies in abaca production, effective disease containment, productivity using improved cultural management practices and integrated disease management for abaca.

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