

73

FARMING

AND COOPERATIVES

Vol II No I

January 1947
Official Organ of the Philippine Farmers Association

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Taken Nov. 14, 1946 in front of the Amec Plow Factory at the NDC Compound, at the time the President gave the "Go-Ahead" sign to manufacture agricultural implements (Please see Our Cover page 11)

JANUARY—1947 VOL. II NO. I

₱0.60 per copy

"TO MAKE AGRICULTURE PAY, DO IT THE AMEC WAY".—Henares

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF INSTRUCTION
BUREAU OF EDUCATION
MANILA


December 19, 1946

The Philippine Farmers' Association, Inc.
1055 Arlegui St.
Manila

Gentlemen:

In reply to your letter of December 5, 1946, submitting Farming and Cooperatives for approval, I wish to advise you that the magazine was approved for general reading for students in agricultural, rural and general secondary schools.

Very respectfully,


ESTEBAN R. ABADA
Director of Education

D16D012

FARMING AND COOPERATIVES

Weather Report

AVERAGE MONTHLY RAINFALL AND RAINY DAYS
FOR THE MONTH OF JANUARY IN DIFFERENT TYPES

First Type:—Two pronounced seasons; Dry in winter and
spring, Wet in autumn and summer.

Vol. II—No. 19 Jan., 1947

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Publisher: PHILIPPINE FARMERS ASSOCIATION

Staff: HILARION S. SILAYAN, Editor; R. R. DE ARANA, Managing Editor and Business Manager;

Editorial and Business Office:
1055 Arlegui, Manila, P. I.

Subscription Rates:

One year ₱6.00
Half year ₱3.00

Entered as second class matter at the Manila Post Office on Dec. 14, 1946.

STATION	Length of Record	Average Monthly Rainfall	Average Monthly Rainy Day
		Years	mm.
Iloilo City	36	64.7	10
Lapus-Lapus, Iloilo City	20	65.8	9
Cuvo, Palawan	36	16.8	2
Batangas, Batangas		25.0	6
Caltagan, Batangas	18	16.0	4
Lian, Batangas	18	16.2	2
Ambulong, Tanauan, Batangas	25	25.2	6
Cenlubang, Laguna	22	42.0	9
Santa Cruz, Laguna	28	48.6	12
Fort Mills, Corregidor	28	11.8	3
Cavite Naval Station, Cavite	21	13.9	4
Lamso Horticultural Station, Bataan	20	9.8	2
Manila City	73	24.4	5
Antipolo, Rizal	26	26.5	6
Bosoboso, Rizal	18	24.0	4
La Mesa, Rizal	13	19.6	5
Montalban, Rizal	20	26.2	5
Olongapo, Zambales	20	5.6	1
Iba, Zambales	29	7.4	2
Dagupan, Pangasinan	36	11.0	
Itoyon Mining Company, Mountain Province	16	7.7	1
Baguio City	36	22.5	4
San Fernando, La Union	36	8.6	1
Sagada, Mountain Province	20	32.6	7
Bontoc, Mountain Province	20	13.2	3
Vigan, Ilocos Sur	36	4.0	1
Laoag, Ilocos Norte		4.8	1

AVERAGE MONTHLY RAINFALL AND RAINY DAYS
FOR THE MONTH OF JANUARY IN DIFFERENT TYPES

Second Type:—No dry season with a very pronounced maximum rainfall in winter.

STATION	Length of Record	Average Monthly Rainfall	Average Monthly Rainy Day
		Years	mm.
Compostela, Davao	18	400.0	16
Hinatuan, Surigao	11	807.4	26
Butuan, Agusan	35	314.8	22
Surigao, Surigao	36	544.0	24
Guiuan, Samar	26	536.8	25
Tacloban, Leyte	35	337.3	22
Borongan, Samar	36	641.6	26
Catbalongan, Samar	23	319.0	20
Legaspi, Albay	36	391.5	22
Virac, Albay	30	221.8	20
Atimonan, Quezon (Tayabas)	36	203.6	20
Pandan, Albay	7	271.4	13
Lucban, Quezon (Tayabas)	11	407.6	26
Daet, Camarines Norte	18	353.0	24
Infanta, Quezon (Tayabas)	12	416.2	26

AVERAGE MONTHLY RAINFALL AND RAINY DAYS
FOR THE MONTH OF JANUARY IN DIFFERENT TYPES

Third Type:—No very pronounced maximum rain period with a short dry season lasting only from one to three months.

STATION	Length of Record	Average Monthly Rainfall	Average Monthly Rainy Day
		Years	mm.
Zamboanga City			
San Ramon Penal Colony (Heights), Zamboanga City	38	54.4	8
Sibuko Farm School, Zamboanga	12	84.1	6
Central Camp, Davao	13	70.5	4
Dansalan, Lanao	6	219.3	19

(Continued on page 18)

Soil Conservation Necessary for Nation's Security

By Dionisio I. Aquino
Of the Department of Soils, College of
Agriculture, University of the Philippines

Continuation from Vol. I - No. 10

Strip cropping. Strip cropping is one of the vegetative methods for the control of erosion. This concerns with the planting on the land in alternate strips of close-growing cultivated crops. Thick-growing fibrous rooted-crops, such as corn, tobacco, cotton, etc. are planted around the slope. The planting should be done in such a manner as to follow the contour of the land as closely as possible. The contoured rows of soil-building crops, which are mainly for the protective cover of the soil, serve as miniature terraces. These crops may either be plowed under at an appropriate time or harvested for seed or feed.

The practice of strip cropping is best suited to land areas of rolling topography with more or less uniform slopes. One thing necessary in putting strip cropping into reality is courage to change the layout of the farm and to a certain extent, the cropping system. Strip cropping is one of the simplest, but most effective, and inexpensive methods in controlling soil erosion.

Farm terracing to reduce erosion. Steep as well as rolling lands that wash badly should be terraced in order to prevent large amounts of surface water running straight down the hill at a high velocity. The reduction of runoff is a means of controlling erosion and it gives the soil an ample time to absorb more water for the growing crops. Terraces are important in protecting gullied areas by diverting surface runoff from them. They are not difficult to maintain and are more useful especially on moderately sloping areas. Lands with a 12 to 15 per cent slope are, in most cases, considered as steepest and can be terraced and cultivated on practical basis. Areas of steeper slopes should be left alone in pasture.

Contour plowing. The purpose of contour plowing is to break the ground at regular intervals along the lines around the slopes in order to collect runoff and prevent soil washing. The water-holding furrows should be from 15 to 20 meters apart or closer depending on the angle of slope and condition of the land. When crops of the same level are planted, lines are to be followed in order to form shallow trough above each row which not only controls erosion but holds surface runoff also. Thus, the danger of runoff is reduced. The fact that erosion can be controlled is impor-

tant and the correct solution to the problem of erosion is simple and practical. However, a complete, coordinated program, and sustained efforts are necessary if a maximum benefit is to be desired.

Microbiological conservation of soil. One may inquire, "What part do micro-organisms play in the conserving of soil fertility and of preventing the losses of the soil itself? It may be emphasized that these losses are brought about in the following ways, (a) the gaseous losses, especially the soil nitrogen, (b) losses in a liquid state through the constant dissolution of some nutrient materials by the movement of soil water, and (c) losses in a solid state, or true soil erosion. It has been shown that the problems of water and wind erosion, as well as that of soil deterioration owing to improper system of tillage operation, are closely associated with the problem of soil organic matter. A decrease in the amount of organic matter in the soil accompanies soil deterioration and in itself a cause for further deterioration. An increase in organic matter and nitrogen is a symbol of soil improvement. The soil microbes are closely associated with the formation and destruction of organic matter, and with an increase or a decrease of the available nitrogen and mineral nutrients. In most cases an improvement in the microbiological condition of the soil, or proper aeration of poorly-drained soils, etc., results in improvement of the physical and chemical soil conditions.

In addition to preventing soil losses, micro-organisms can be made, with careful and scientific crop rotation and soil management, to increase the fertility of the soil. They are believed to be capable of replacing, at least, some of the nutrient materials lost from the soil. It has been generally recognized that micro-organisms serve several distinct functions in the soil; namely, (a) they prevent the plant nutrients from being leached out, (b) they convert the essential plant nutritive elements in the soil into forms in which they can again be utilized by the following crops, (c) they reduce the waste of plant and animal life and transform these residues into organic matter, which becomes an important constituent of the soil system and exerts highly favorable influence upon the growth of crops, and (d) they increase the supply of nitrogen in

the soil through judicious utilization of leguminous plants.

The soil microbes are important agents in the conservation of the tremendous wealth that nature has in store in the soil. It is, therefore, necessary to take into consideration the influence of soil treatment upon the activities of the autochthonous soil micro-flora, as well as the methods of utilizing their activities in order to make possible a permanent system of agriculture.

Program of soil conservation. It may be stated that it has been only recently that the soil has received the attention of scientists, which it should have had long ago. Philippine soils as are soils elsewhere are not inexhaustible. The results of studies conducted in the College of Agriculture on soil samples collected from typical areas of the Philippines showed that unless our methods of farming systems are modified or changed sooner or later the production of crops will be limited owing to exhaustion of plant-food materials due primarily to excessive erosion.

We should not wait until our soils are exhausted before we adopt a system of farming operations which will insure their continuous fertility. The farmer, himself, needs to adopt newer and wiser farming methods and to cherish his soil as his only capital. The farmer who puts into operation the suggestions for conserving the soil and improving its fertility will not only secure benefit but also maintain the fertility of the land for many years to come.

Any program of permanent soil improvement or soil conservation should take into consideration the detailed treatment of every aspect of the subject of land loss, the results, and the necessary methods for the prevention and control of accelerated erosion. There is a need for a careful study of the problems of maintaining high soil productivity, the production and propagation of farm and range plants for the control of erosion. The use of pasture grasses, small grain-crops and legumes as protective covers of the soil, and shrubs and trees is of vital importance in the control of soil erosion both by wind and by water. Seeding all crops on the contour and practicing contour strip cropping and terracing on sloping land areas are among the methods used for controlling erosion. The microorganic population of the soil must

PAPAYA: Its Uses, Food Value and Preparation

By JOSE I. SULIT
of the Plant Utilization Division

Papaya, *Carica papaya* L. is a common tropical fruit naturalized in this country. In England, it is popularly known as "paw-paw" and "melon tree," in the United States. Papaya was introduced into the Philippines by the Spaniards from Mexico, and being a tropical fruit, its propagation was so rapidly extended to many parts of the country that at present it could be found almost anywhere.

The importance of papaya in this country is as a table fruit when ripe and as a vegetable when young. The commercialization of papaya products is limited, if there is any at all in the Philippines, as compared to that in the United States and other Asiatic countries. The food value as well as the medical uses of papaya are recognized in the United States. In 1941, before the outbreak of war, the United States imported \$150,000 worth of papain from the West Indies and Ceylon.

The annual production of papaya in the Philippines (Census of the Philippines, 1939), is 54,613,524 fruits worth P1,115,616. According to Culbreth (1927) and Karter and Schlientz (1934), papain is

prepared by collecting the milky exudates of papaya obtained by incising the skin of the mature fruit and dried at not more than 40% preferably under vacuum). The dry residue is known as "papain" commercially termed as "papoid." This substance after treatment with alcohol produces a precipitate containing caricin or papayotin. It is whitish hygroscopic powder odorless, tasteless and soluble in water or glycerine; and active in neutral and acids, but more so in alkaline media. It converts starch into maltose, albuminoids into peptones, and emulsifies fats very readily. Hence, this substance is used in cases of dyspepsia to help in digesting foods. Americans of advanced age take papain in forms of candy and chewing gum or mixed with other medicinal preparations.

The papaya milky exudates besides being used as a bleacher is also used for removing freckles.

The dried seeds of papaya are commonly used as vermifuge (worm expeller). The water extract of papaya leaves removes certain cloth stains and when used in washing colored clothings prevents discoloration.

The papaya fruit is highly recommended as an economical source of Vitamins A, B and C. It contains appreciable amounts of calcium, phosphorus and iron as shown in the following table:

TABLE 1—Showing the vitamin and mineral contents of papaya as compared with some Philippine fruits. L

NAME OF FRUIT	VITAMINS				MINERALS (PER CENT)			
	A	B1	C	B2	Ash	Calcium	Phosphorus	Iron
Avocados	- -	- -	- -	- -	0.79	0.008	0.034	0.00057
Bananas	- -	- -	- -	- -	0.80	0.004	0.023	0.00007
Guavas	- -	- -	- -	- -	0.50	0.101	0.022	0.00146
Mangoes	- -	- -	- -	- -	0.37	0.006	0.015	0.00016
PAPAYAS	- -	- -	- -	- -	0.51	0.019	0.013	0.00025
Pineapple	- -	- -	- -	- -	0.28	0.018	0.012	0.00025

(Continued on next page)

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Nature of Fruit	Moisture %	Ash %	Protein %	Fat %	Crude Fiber %	Carbohydrates % (by difference)
Green Papaya	93.98	0.41	1.09	0.17	0.65	3.70
Ripe Papaya	88.27	0.88	0.75	0.24	1.17	8.69

1/—Miller, C. D. and R. Robbins. Some fruits of Hawaii: their composition, nutritive value and uses. Hawaii Agricultural Experiment Station Bulletin No. 77, 1937.

2/—Pratt, D. S. and J. I. del Rosario. Philippine fruits: their composition and characteristics. Philippine Journal of Science. 8A: 69 (1913).

According to the foregoing tables the papaya fruit has a comparatively high food value, especially in vitamins and the necessary bone building materials as calcium and phosphorus. Besides, the ripe fruit contains carotaxanthin which promotes growth, the body effect of which is similar to carotene. As food, papaya fruit when young is used as vegetable and when ripe as a table fruit. The immature papaya is popularly used in the manufacture of native "atchara" and in the preparation of fermented mixed pickles. It may be baked or boiled and served as a vegetable, or stewed and served as a sauce. In the ripe stage, it is most desirable to use as fresh, making an excellent breakfast or dessert fruit when served with lemon or lime. In cocktail or salads, it is usually combined with pineapple, mango, citrus, melon and other highly flavored fruits. The fresh papaya pulp with milk or cream makes a delicious frozen dessert.

The food products derived from papaya are many and their preparations had been tried and tested by the Plant Utilization Division. In the preparation of these papaya products, such as jelly, jams, marmalade products, such as jelly, jams, marmalades, preserves, etc., the following are the methods used:

Papaya Jelly.—The mature but not ripe papaya contains a high percentage of pectin, an important ingredient in the manufacture of fruit jellies. In view of the fact that the water extract of papaya for jelly making has no fruit flavor this material is used advantageously in the manufacture of artificially flavored fruit jellies, such as mint, strawberry, grapes, pineapples, etc., which is done as follows:

Wash the fruit, cut into halves, removed the seeds, and cut into small and thin pieces (skin not being removed). Add equal amount of water and boil for 20 minutes or until the fruit is tender. Strain through a piece of cheesecloth (without pressing) and measure. To every kilo of the water extract, add 1/2 kilo of sugar, either first or second class sugar. To mixture, add 4 tablespoons of calamansi juice. Heat to boiling and strain to remove impurities; continue boiling until a temperature of 108°C (226.4°F.) is reached. Before pouring into the jelly jars, add the fruit flavoring, the type of essence depending on what kind of jelly is to be made.

Papaya Juice.—A new product of ripe papaya is the juice, commercially known as "papaya nip". An American firm in Hawaii is the manufacturer of this prized

product. Trans-oceanic vessels includes papaya juice as the main source of Vitamins A, B, complex and C. It is prepared as follows:

Select a fully ripe papaya free from blemishes and spoiled portions. Wash carefully and cut into halves to remove the through a fine sieve. In a commercial manufacture, the ordinary tomato pulper does the job with optimum efficiency and speed. To the fine papaya pulp, add equal amount of 30 per cent syrup. To every liter of the resulting mixture, add two tablespoons of calamansi juice to impart enough acid and citrus flavor. Heat the mixture to boiling and pour while hot into No. 1 tall cans (10-ounce capacity), and then seal hermetically. Cool at once under running water; dry, label and store in cool, dry place.

Papaya Sauerkraut. — Experiments undertaken on the preparation of papaya sauerkraut produced a product similar to ordinary cabbage sauerkraut, another type of vegetable pickle. The preparation is as follows:

Peel the hard mature papaya and shred into threads as if shredding cabbage. Pack the shredded material in a jar, incorporating at least 2% salt on each layer. Put on each layer. Put on heavy stones, not bricks or iron, heavy enough to let the water ooze out of the material. Cover the container and allow to ferment at least one week, long enough to acquire about 1% lactic acid content. Pack the vegetable in cans, heat its liquid to boiling, pour while hot into the vegetable and seal the cans hermetically. Cool at once under running water to prevent the vegetable from further cooking. Store in cool, dry place.

Papaya Pickles (Native "Atchara"). — The common papaya pickle (Native "Atchara") is made differently from the fermented papaya mixed pickle. This is made by the quick process which is as follows:

Peel 5 regular sized green papaya and shred it. Add to the shredded material 2% salt and work with the hands; press to remove completely the juice and to it add the pickle syrup which is prepared as follows: may be added few crushed pieces of "dillaw"; then heat to boiling and pour while lows: To one quart of sour vinegar (4% acetic acid) add one head of garlic, twenty (20) heads of native onions sliced into thin disks; two red sweet peppers, sliced; a small amount of cut ginger; and 2 cups of brown sugar. To the mixture, may be added few crushed pieces of "dillaw"; then heat to boiling and pour while hot into the pressed papaya vegetable. The

product is ready to serve, but best if allowed to stand overnight.

Frozen Papaya.—The commercial value of papaya will be increased as soon as the United States resumes the importation of frozen papaya. Before the outbreak of War II, a private firm was exporting frozen papaya to the United States. As soon as tin cans are made available at reasonable price the same private firm would again start the exportation of frozen papaya to the United States. The simple method used in preparing the product is as follows:

Select sound ripe papaya; peel; cut into halves to remove the seeds and then cut the pulp into rectangular pieces of about 1" wide x 2" long. Pack in one-gallon can, previously coated with paraffin and to it pouf enough to cover a 30% syrup. Seal hermetically and store in a cold storage with a temperature ranging from 17-26°F. This preparation is served as fresh papaya and may be used in the manufacture of "papaya nip".

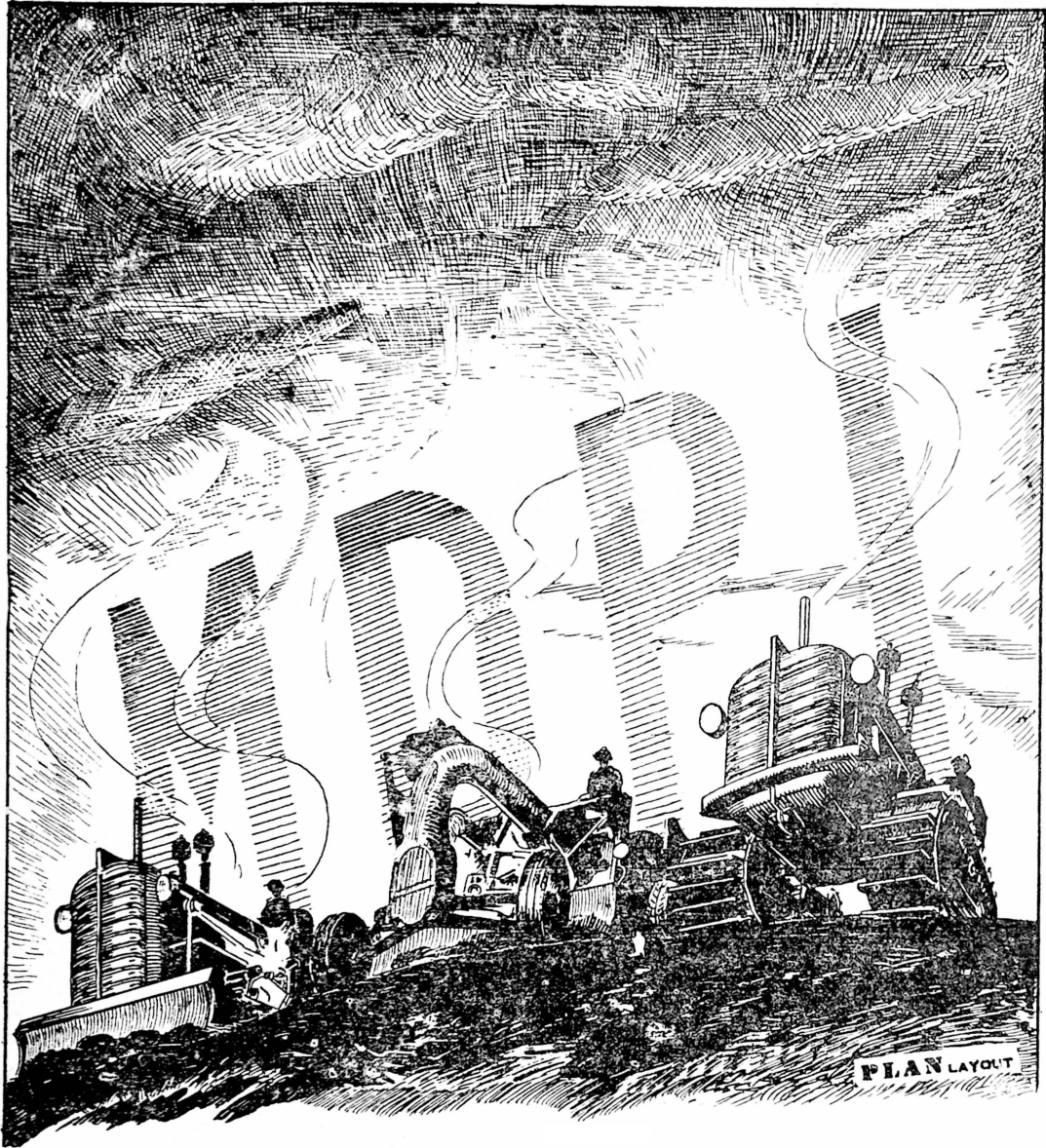
Papaya Jam.—The taste of pure papaya jam is improved by the addition, as flavoring, of small amounts of other highly flavored fruits, such as "nangka", mango or pineapple. The appearance of the finished product is much improved because of the added pectin inherent in the fruit flavoring. The method is described as follows:

Select fully ripe papaya, cut into halves to remove the seeds; then scrape the pulp, and the hard portions grated through a meat chopper. measure the total pulp and add 1/2 the amount of sugar and 1/4 the amount of any of the above-mentioned fruit flavoring. Cook to a jam consistency; pack while hot and seal hermetically at once. If packed while boiling hot which is the correct practice, sterilization is not necessary.

Papaya Preserves (Maraschino-cherries type).—The product serves as a substitute for the imported maraschino-cherries preserve, commonly used in fruit cocktail; salads, cakes and pastries. Only the mature but firm papaya is recommended to obtain a product very similar to maraschino-cherries preserve.

Cut the papaya into halves to remove the seeds; then scoop the pulp with the aid of a potato pulper (the smaller size). Try as much as possible to produce round balls of about the size of cherries. Prick the balls and soak in lime water solution (made by dissolving 1 tablespoon of common lime in 12 cups of water) for at least 12 hours. Then wash thoroughly to remove the lime and boil 10 minutes. Drain and soak in a solution of certified red food coloring (made by mixing 1/4 teaspoon of Ponceau red coloring in 1/3 cup of calamansi juice). Let it stand for 5 hours stirring occasionally to effect an even distribution of the absorption of color. Wash the balls to remove excess color and then boil for 15 minutes in 2 to 1 syrup. Allow to stand overnight and boil again until the syrup

(Continued on page 15)



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First Rice Experimental Project in Albay

By PAQUITO SERRANO

Aimed to increase the yield and production of rice of Albay by means of scientific and modern method of rice farming, three cooperative experimental plots are being conducted in the three representative rice municipalities of Malinao, Camalig and Polangui under the office of the provincial agricultural supervisor with the technical assistance of Mr. Francisco P. Octubre, Assistant Agronomist of the Bureau of Plant Industry.

Knowing full well that no experiment of the kind had ever been attempted in the province before, the Provincial Board of Albay passed Resolution No. 110 calling for the establishment of said projects in order to encourage the farmers to devote more time in the proper cultivation of their lowland rice fields so as to realize better production. The amount of P630 has been set aside for labor, giving P210 for each hectare experimental plots.

These variety tests of palagad rice will serve as initial and practical demonstration on how to select the best variety suitable to local conditions. The effect of commercial fertilizers in the improvement of rice production will also be shown in these undertakings. This was made possible thru the initiative of the Provincial Governor and the Provincial Agricultural Supervisor who are deeply concerned with the improvement of rice yield of the province. At present Albay planters realize only from 18 to 25 cavans of palay per hectare.

After making field observations and laying the foundation of each project, Rice Research Man Francisco P. Octubre recommended the application of complete fertilizers suitable for rice like corna arroz, which contains 20% nitrogen, 10% phosphoric acid and 5% potash, and ammonium sulphate at reasonable quantity per hectare to obtain the best results.

Malinao Cooperative Palagad Rice

Experimental Plots.

Located in barrio Cabunturan, three kilometers from the poblacion along the provincial road to Tiwi, the plots are level and represent the lowland rice field condition of Tiwi, Malinao, Tabaco, Malilipot, Bacacay and Libog. Although the soil is of yellowish brown clay loam containing a lot of sulphur, rice plants grow normally. Due to the uniformity of the soil condition, Mr. Octubre found out that repetition of the variety plots was unnecessary. Planting of inawayan (BPI and local), Sinadyaya and Kaawa had been done on November 25, 1946.

Camalig Cooperative Palagad Rice

Experimental Plots.

This project represents the ordinary roll-

ing lowland rice fields in the valleys between Mayon Volcano and the low hills of Legaspi, Daraga, Camalig, Jovellar and Guinobatan. The fields are not level and the soil is a mixture of black fine sand and clay loam of volcanic origin, according to the Rice Expert. While the higher fields at the foot of the hills noticeably lack organic matter, the lower ones are comparatively rich. Due to this condition, the four varieties planted were replicated three times. The plots are located in the barrio of Libod one and one-half kilometers from the centro.

Polangui Cooperative Palagad Rice

Experimental Plots.

Planting here is late because harvesting of rice in the municipalities represented by this project, viz. Ligao, Oas, Polangui and Libon, is also late, similar to that of Camarines Sur. Proper outline, including cultural instructions, have already been made by Mr. Octubre. The soil here is ordinary dark brown, clay loam, level, low and rich in organic matter.

As a corollary to these experiments it is worthwhile to discuss here the condition obtaining in the province regarding the production of rice. Albay, like the southern part of Quezon, Camarines Sur and other

provinces of the Bicol Region, belongs to type B — no pronounced dry season and capable of planting twice a year. The first crop is usually planted during May and June and harvested about October and the second crop (palagad) is planted in November and harvested in March and April. Heavy rains occur from November to January, the months considered by the planters as wet.

Incidentally the three representative experimental projects are around the perfectoned, active Mayon Volcano, hence the soil is of volcanic origin which is mostly of dark sandy loam, either sufficient or deficient in organic matter.

Even if it is claimed that there are more rains and irrigation water available during the second planting the average production of the first planting, as can be deduced from the above data, is still greater than that of the second cropping.

Personnel of the local Bureau of Plant Industry are leaving no stone unturned to make these projects a big success in order to encourage the local farmers in increasing their rice yield.

Albay's basic area of lowland rice fields is 14,076 hectares planted to the following varieties:

	ha.,	ave.	
Apostol (Senador)	4,565	"	22 — 24 cavans
Bacao	320	"	21 — 25 "
Baranay	450	"	22 — 26 "
Bolibod	230	"	25 — 28 "
Bulao	880	"	20 — 28 "
Cruz	210	"	24 — 28 "
Elon-elon	705	"	22 — 26 "
Casongsong	300	"	20 — 22 "
Kinawayan	1,900	"	20 — 22 "
Pangasinan	949	"	25 — 28 "
Maguinsalay	770	"	22 — 25 "
Pinursigue	1,650	"	24 — 26 "
Other varieties	506	"	20 — 25 "

The basic area of palagad rice reaches the 14,500 ha. mark, planted to the following varieties:

	ha.,	ave.,	
Binisaya	1,575	"	16 — 20 cavans
Eulao	930	"	18 — 20 "
Cruz	1,210	"	15 — 20 "
Dumali	865	"	18 — 20 "
Gayangang	850	"	16 — 20 "
Kagting	1,415	"	17 — 22 "
Katorsa	635	"	15 — 18 "
Kinawayan	2,105	"	17 — 20 "
Maguinsalay	1,335	"	16 — 20 "
Pangasinan	1,565	"	18 — 20 "
Siruma	945	"	15 — 20 "
Other varieties	1,070	"	15 — 20 "

(Note: This article is based on the report of Mr. Francisco P. Octubre, Assistant Agronomist)

QUESTIONS and ANSWERS on -

DUCK RAISING

By Carlos X. Burgos
Chief, Livestock Extension Division
Bureau of Animal Industry

(Continued from Last Issue)

30. *How is the required temperature kept even?*—To insure an even temperature throughout the incubation period, the palay is heated every morning and afternoon in a *kawa* (a native large hen vat or pan). The experienced touch of the caretaker is the only index used to determine the heat, which is usually around 40°C. to 42°C. Usually the procedure of testing is to apply one of the eggs against the cheek or back of the hand. From the tenth to the thirteenth day the eggs are candled; and the infertile ones, separated for sale. The eggs intended for hatching are separated on the twentieth day and placed on a table covered with paper, mats, and cloth placed over rice hulls of two or three centimeters deep. This table is called the "empolladora" or "cehohan." It is about one meter high, one and two-thirds meters wide, and several meters long. Such dimensions may change, depending on the capacity of the hatchery. The eggs are put side by side on the "empolladora" and are then covered with two or three cotton sheets according to the weather. A black or colored sheet is preferred by the operators for retaining the heat.

The hatcheries are kept dark and the hatching table is completely covered with a thick cotton or flannel sheet to keep the temperature constant. The floor of the hatcheries is also covered with a layer of rice hulls two to four inches deep.

31. *Are the eggs turned every day?*—Every day the eggs are turned until they are ready to hatch. Some caretakers turn them every four hours, others only two to three times a day. As soon as any sign of putrefaction is detected, the spoiled eggs should be immediately taken away. After 20 days of incubation no extra heat is applied to the eggs, because it is believed that the embryos generate enough heat to keep themselves alive, and if properly covered to prevent loss of heat, the eggs can be expected to hatch between the twentieth and the twenty-eight day.

32. *May Duck eggs be hatched successfully under hens and modern incubators?*—Setting hens and modern incubators may also be used for hatching duck eggs. When setting hens are used, precautions should be taken to free the hens and nests from lice and mites. Many claim that ducks raised by this method are the best for breeding

stock. In hatching in modern incubators the temperature should be kept at 101°F to 103°F (38°C to 39°C) and luke warm water should be sprinkled one a day during the first three weeks.

33. *Describe the care of ducklings in Pateros?*—In Pateros, the newly-hatched ducklings are not fed for 24 to 36 hours after hatching. After such time they are placed under the house of the caretaker or in a convenient room where a spacious place is prepared for them. Sometimes, the hatch consists of 1,000 or more ducklings. At first, they are fed five times a day with soft-boiled rice placed on a shallow pan or on a plate with clean smooth surface (clean *sawali* is ordinarily used). They are given water in another flat pan or in the same pan. When about three days old, they are divided into two groups, the males. Most of the males are either sold to people who visit the duckery or sent directly to the market.

The ducklings intended for breeding purposes are raised in groups of about five hundred, 10 per cent of which are usually males. They are fed with Gamogamo (flying termites) when-ever these are available, and, more often, they are also fed with small shrimps. Any of such feeds mixed with moistened boiled rice is given after the fifth day. The ducklings are placed in large shallow baskets containing 100 each and exposed in the sun for a short time every day. After about the fifteenth day they are allowed to swim for a short time. They should not be allowed to stay in the water long for they usually over-exercise and die. When about one month old, they are transferred to a larger enclosure, where they are fed with some boiled unhulled rice and *sambuelo*; and when these are not available other kinds of crushed snails are given. At the same age, they are also allowed to stay in the water as long as they like.

34. *How should the brooder house be built?*—A brooder house should be well-protected from drafts and should have spacious partitions, as one about 3 x 3 m, which can accommodate from fifty to one hundred ducklings up to the age of three weeks. In such partition, especially if it has accommodation space of fifty ducklings, these fowls will not trample upon one another and all may get their share of the food. If possible, the morning sunshine should reach each each pen to lighten the

task of handling. This will also materially reduce the percentage of deaths.

35. *How are the ducklings kept at night?*—The room is closed to prevent exposure to draft, and a light is provided not only to help keep the room warm, but also to help the caretaker see the birds as a means of protection against rats and ants, as the ducklings are fed several times at night when still a few days old. Their feed is reduced as they grow older.

36. *Can the feed of ducklings in Pateros be improved?*—The feed given to the ducklings in Pateros can be greatly improved if some fish meal or finely-chopped chrimps are added to the soft-boiled rice fed at the start.

The following baby chick feed may be given later in moist form with water or milk to raise ducklings to a safe age:

Tikitiki, first-class, well-dried . . . 3 parts
Corn, yellow, finely-ground 2 parts
Mongo, finely-ground 1 part
Binlid 1 part
Fish, shrimps, or meat meal 2 parts
Oyster shell powder 2 per cent of above mixture.
Salt ½ per cent of the above mixture.

Sand with some soil that had been formerly heated (to avoid infection) should be added to two per cent of the above mixture.

Finely-chopped tender green feed should be fed after the tenth day.

37. *At what age will native ducks begin to lay?*—In Pateros, at the age of four to four and one-half months, they are confined in permanent breeding pens. A few will lay as early as five to five and one-half months under favorable conditions if properly cared for and fed. Most of them, however, cannot be expected to begin laying until they are about seven months of age. The percentage of deaths of ducks in Pateros up to the age of four months is estimated to be 40. With better practices the percentage of deaths could be greatly reduced. Conservatively and approximately estimated a laying duck subject to favorable conditions and good care can be raised to laying age from out of every four eggs incubated.

38. *What is "balut"?*—"Balut" is a duck egg that has under-gone incubation of 14 to 18 days and is then hard boiled. It is of two kinds, depending upon the length of incubation of the egg. They are, as called in Pateros, *namamatong*, those incubated up

to the 14th day, and balut sa pute, those incubated up to the 18th day.

39. *What eggs are selected for "balut" production?*—Only fair-sized, fresh, thick-shelled eggs (not older than five days) are selected for balut making. The thickness of the shell is tested either by snapping it hard with the fingers or by candling. If the former is employed, the eggs are snapped hard enough to break the ones with thin shells. The general appearance helps greatly in the selection. The thin-shelled eggs are disposed of to bakeries.

40. *What eggs are called "penoy"?*—Eggs that have undergone incubation up to first test and have not developed a germ but are not spoiled, are hard boiled and sold as "penoy".

41. *How long are the ducks kept in Pateros for egg production?*—Usually for about three years of production. The first year of production is the best. In many places in the United States they are kept for one or two years only.

42. *Are ducks raised on a commercial scale in the United States?*—Yes, but not for egg production.

43. *What for, then?*—For meat. For in purpose, "green ducks," ducks from 9 to 13 weeks old and weighing four to six pounds, are used. It may be explained here that ducklings grow much faster than chicks.

44. *What breeds of ducks are raised in the United States for purposes of meat?*—They raise a number of breeds but the white Pekin ducks are the most popular. These are found in extra-ordinarily great numbers over a wide area in the southern shore of Long Island, New York.

45. *Do these market ducks grow heavier than six pounds when they grow older?*—After reaching six pounds they do not weigh very much more.

46. *How long are ducks kept in the United States?*—Usually one year only. Those that are kept longer are used to produce eggs for hatching.

47. *What is fed to these ducks?*—A growing mash to make them develop in a short time for the market. In 9 to 13 weeks, ducklings increase their weight by 50 times their weight at hatching time.

48. *How is the mash feed fed?*—As a wet mash in such amounts that it may clear in 15 to 20 minutes so that it will not be spoiled and do harm. It is fed every four hours, generally in the morning, noon, and evening.

49. *How is the improvement of duck eggs effected?*—Generally, there is no trapping, progeny testing, or individual pedigree in the commercial duckeries. Selection is more or less the same as in Pateros, but in some state stations some work has been done for the improvement of duck eggs. Recently, the kaki Campbell ducks were reported to produce as many as 365 eggs a year.

50. *How could egg production be improved in a short time?*—By using the sons of

the best producers, producing daughters that are good producers, as sires as long as they are strong and fertile.

51. *What is the ordinary way of selection?*—The selection from among the best, that is, those that are healthy, active, and with good length, width, and depth of body.

52. *Can the native ducks be mated with the Muscovies?*—Yes. When mated, they produce a hybrid that is bigger than the native and in conformation resembles more the native than the Muscovy. In the experiments made, the eggs laid by the few produced from this crossing did not hatch.

53. *Do the native ducks look like the Pekin ducks?*—They are very much like the Pekin ducks except that they are smaller and that they are colored while the Pekin ducks are white.

54. *To what species are they related?*—They seem to be related to the wild Mallard duck.

55. *Are ducks subject to disease?*—They are, but they seem to be less subject to it than other fowls.

56. *What is the reason why there are times when many ducks die?*—Usually, they die of botulinus, poisoning from eating dead or decomposing organisms. This happens when there are many dead snails during the hot season, when the so-called "lya" (Laguna de Bay algae) abound in Laguna lake.

57. *What is the weight of duck eggs?*—A native duck egg weighs about 70 grams; an Indian Runner duck egg, from 75 to 80 grams; and a Muscovy duck egg, from 65 to 70 grams.

58. *During what months do the ducks lay best?*—In the tests made at the Alabang Stock Farm, the months of June and July showed the highest production for both Indian Runner and native ducks.

59. *During what months do they lay the least?*—In the same test at the Alabang Stock Farm, January showed the lowest production.

60. *Is it possible to improve duck raising in Pateros and elsewhere in the Philippines?*—Yes, at least in four ways, namely, (1) by better sanitation, (2) by the use of a good thermometer in testing the temperature of the heated palay and by the use of a double door at the entrance of the hatchery, (3) by the use of heat in brooding the newly-hatched ducklings and by giving better protection against predatory animals, and (4) by better feeding of the young growing stock from the start.

61. *What sanitary measures should be observed?*—In the duck house, the litter should be deeply placed, and it should be sunned daily or as often as the weather permits, and changed as soon as a rack

Continued on Page 12)

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DEPARTMENT OF PUBLIC WORKS AND COMMUNICATIONS
BUREAU OF POSTS

Manila
SWORN STATEMENT
(Required by Act No. 2580)

The undersigned, HILARION S. SILAYAN, Editor of FARMING AND COOPERATIVES (title of publication), published *Once a Month* (frequency of issue), in *English* (language in which printed) at 1055 Arlegui, Manila (office of publication) after having been duly sworn in accordance with law, hereby submits the following statement of ownership, management, circulation, etc., which is required by Act No. 2580, as amended by Commonwealth Act No. 201:

Editor—Hilarion S. Silayan	1055 Arlegui, Manila
Managing Editor—Raul R. de Arana	1055 Arlegui, Manila
Business Manager—Raul R. de Arana	1055 Arlegui, Manila
Owner—Philippine Farmers Association	1055 Arlegui, Manila
Publisher—Philippine Farmers Association	1055 Arlegui, Manila
Printer—Manila City Press	1055 Arlegui, Manila
Office of Publication—Philippine Farmers Association	1055 Arlegui, Manila

If publication is owned by a corporation, stockholders owning one per cent or more of the total amount of stocks.

Jose Cojuangco
Manuel Gallego
Luis de Leon
Ricardo Gonzalez
Sixto L. Sison
Antonio Villarama

Bondholders, mortgagees, or other security holders owning one per cent or more of total amount of security: NONE.

In case of publication other than daily, total number of copies printed and circulated of the last issue, dated April, 1946:

1. Sent to paid subscribers	500
2. Sent to other than paid subscribers	1,500

Total 2,000

HILARION S. SILAYAN
(Signature)
EDITOR

(Title or designation)

Subscribed and sworn to before me this 1st day of April, 1946, at Manila, the affiant exhibiting his Residence Certificate No. A-973419, issued at Manila, on February 8, 1946.
(Sgd.) MONICA BUMANGLAG
Post Office Inspector

COOPERATIVE MOVEMENT

By Hilarion S. Silayan

(To teachers and people engaged in co-operatives the studies here given are recommended. May be used for classroom).

FINANCING COOPERATIVES

What is financing?—Financing involves the conduct of monetary affairs, the raising of capital. It deals with the ways and means of accumulating funds to be placed at the disposal of an organization for the conduct of its activities.

Importance of financing.—For an organization to carry out its policies effectively, there is the ever-present need of having at its disposal adequate sums of money to spend for or devote to the purposes outlined for it. This is necessary because without adequate finances nothing can be attempted with success. It is no wonder, then that the question of financing an enterprise constitutes one of the main problems of operation.

Concept of capital.—Capital has been termed the middleman of production, perhaps so, because it supplies the means of fulfilling wants. It is the amount of money owned by an individual or corporation at a specified time, as distinct from the income received during a given period. The two main classifications of capital are fixed capital and circulating capital, the latter oftentimes called working capital.

1. Fixed capital.—Fixed capital is represented by the physical goods which make possible the handling of the product itself. It is the amount invested for recurrent use in a particular manner. To illustrate, let us take the case of a rice growers' cooperative association which desires to build a warehouse in which to store the rice available for marketing by its members. The amount used in the construction of the warehouse is one item of the cooperative's fixed investment, the use of which will be recurrent for the particular purpose of storing the rice. The physical property which in this case is the warehouse will make possible the handling and storing of rice over a long period.

2. Circulating capital.—Circulating capital is the amount of funds which make possible the financing of the business. It represents the amount consumed in production but is constantly recovered. Thus, when a rice growers' cooperative association buys the produce of its members it will need money to pay either fully or partially for such purchases. The money so utilized is circulating capital, used to finance the business of buying, and recovered back when the association in turn sells the rice to others.

Sources of capital.—Capital may proceed from various sources, such as the subscriptions of members to the capital stock

of the association or corporation, membership fees or dues from the members, assessments based on agreed standards and apportioned according to certain measures of allocation, withheld payments during specified periods, reserves, and borrowed funds. Each of these will be explained in detail in the following topics.

The term "stock".—The term stock in the sense in which it is used in connection with the term capital denotes the capital of company or corporation represented by shares, each of a certain and fixed amount.

Stock association.—A stock association is one which sets its capital stock at a certain amount and divides this amount into a fixed number of units or shares, each usually of uniform value. This value is denominated par value. A member may subscribe to any number of shares and whatever total sum he contributes is thus measured in terms of units or fractional shares of a whole. The stock is usually given a par value except where a no-par issue is decided, in which case a certain minimum only is fixed by law.

Non-stock association.—A non-stock association, on the other hand, is one which does not have its capital divided into units with a fixed par value. Instead, the members contribute to its capital by paying membership fees, assessments or other quotas, as may be determined in the articles of incorporation and in the by-laws.

STOCK ASSOCIATION

Division into shares; par value.—At the beginning of its foundation a stock association stipulates in its articles of incorporation the amount of its authorized capital. It simultaneously fixes the number of units into which the authorized capital stock is to be divided, and the par value of each unit. Where stock is a no-par value stock, however, only the number of shares into which the capital authorized is to be divided need be specified. The law provides in no-par value stock that the minimum consideration shall be not less than P5.00 per share. In a stock corporation, the stock may be par-value stock or no-par value stock, or a combination of both.

Subscription to stock.—Subscriptions to the capital stock are made by number of shares and one may subscribe to any given number of said shares, binding himself to pay to the capital fund of the association the total par value of the shares. Payment is usually made at least 25% down and the balance in equal installments at stated periods, when the call is made for same.

Certificates of stock ownership.—Upon

full payment of one's quota, certificates of stock are issued to the shareholder to evidence his ownership of part of the capital stock of the association. Certificates indicate the name of the shareholder, the par value of the share, the number of shares owned, and the total par value thereof.

Minimum requirements.—Our corporation law requires that before an association can incorporate, at least 20% of the authorized capital stock should be subscribed and at least 25% of the 20% should be fully paid. In other words, 5% of the total capital stock authorized should be paid up at the start.

Rights of stockholders.—Except as to voting rights, which in cooperatives is limited to the democratic principle of one-member one-vote, irrespective of the amount of one's investment in the capital, the rights and liabilities of a stockholder are usually determined in proportion to his capital contribution.

Kinds of stock.—Stock may be divided into common and preferred. Common stock is the one ordinarily found in most associations and corporations in this country. Preferred stock is one which enjoys preferences as to either interest or dividends. Because of complications which its issue entails, it is not to be commonly resorted to at least in pioneering in cooperatives, but may be adopted in financing big organizations. Hence, it will not be discussed here at length.

Illustration.—The XYZ Rice Growers' Cooperative Association is formed. It is decided to finance its operations by the stock association system. The articles of incorporation set its authorized capital stock at P2,000.00, divided into 1000 shares (units of stock) with a par value of P2.00 per share. There are 25 original incorporators to begin with. In this case, the 25 incorporators or original members of the association must subscribe among themselves to shares of stock worth at least P400.00 (200 shares) and must pay among themselves at least P100.00 (25% of P400.00) before it could be incorporated. Thus, one may subscribe to one (1) share, another to ten (10) shares, and still another to four (4) shares, etc. The association could then start with a paid-up capital of at least P100.00. This will increase as the call for payments on the subscriptions shall have grown with its authorized capital fully paid up and need for more capital presents itself, the articles may be amended to permit increase in the capital stock, the

(Continued on next page)

increase to be sold as in the original issue.

Policy on sale of stock.—A very important question in relation to financing by the stock-association system arises as to whether or not selling of stock should be limited to members of the cooperative association only or it should be extended to non-members—what may properly be called outsiders. Each policy has its own advantages and disadvantages.

Restriction of sale to non-members.—It is desirable for a farmers' cooperative that it should be not only composed of farmers but also controlled by farmers. With this end in view, the feasibility is doubted of allowing unrestricted sale of stock to non-members, for if it is desired that proper control of the association is to be obtained, the financial control of the same should always be in the hands of the members, never in the hands of the persons not directly interested as producers. This financial control can be had through the contribution or control of capital.

The distribution of stock among members should be made in such a way that the danger of letting the capital stock fall into the hands of only a limited few could be avoided.

Sale of capital stock to outsiders.—The selling of stock to non-members has the decided advantage that the association could get financial support from the whole community at large. Furthermore, the financial risk, the presence of which in any undertaking is undeniable, could be so distributed as to relieve farmers of at least a portion of it.

Advantages of capital-stock organization.—This system of financing fixes the individual share of ownership. In the attempt of the farmers to limit outside share in the capital, they are obliged to use their own money for operating purposes. On the other hand, if it is desired to attract outside investors, the capital-stock system is more attractive than other forms of financing.

Methods of obtaining funds.—Because where the association is non-stock the capital is not raised by the sale of par or non-par value shares, the association has to levy membership fees or dues; it may make periodical assessments on members; wherever practicable, it may withhold payments for products it handles, or where the financial condition of the association is such as to permit the creation of reserves, it may establish a reserve fund from the profits of the association from time to time.

1. **Membership fees or dues.**—A fixed quota of so much per member may be imposed as an entrance fee at the outset. This membership fee or due may be considered a prerequisite to full-pledged membership.

Suppose an association organizes and a membership fee of ₱10.00 per member is agreed upon to be payable upon organization. Under this set-up, the XYZ Rice Growers' Cooperative Association, previous-

ly mentioned, with an original membership of 25, would be able to raise an initial operating fund of ₱250.00, with which to commence operations.

It may be agreed that the membership quota is payable 50% down and the balance in so many installments. In such case, the initial capital fund of the XYZ Rice Growers' Cooperative Association would amount to ₱125.00 at the start of operations.

Additional capital may be obtained when new members are admitted. Or where the membership remains the same, the membership quota may be raised and additional levies made.

An association may stipulate that each member pay a fixed monthly amount into its coffers, the levy to continue until a certain total is reached. For instance, it may be agreed that each member shall pay ₱1.00 a month for 12 months, followed by a collection of ₱0.50 a month for 16 months, at the end of which period, the association shall have collected ₱20.00 from each member. By the end of the 28 months, the capital fund of the association shall have amounted to ₱500.00 from membership fees or dues alone.

There are many variations in the manner of levying membership dues and a prospective association could work out the method that would most practically serve the peculiar circumstances and needs of the members. Suggestions to this effect are the following:

1. Fees based on the area of a farmer-member's land under cultivation;
2. Fees based on the amount of pro-

duce handled by the association for each member;

3. Lump sum membership fee on entrance;

4. Monthly service fee, etc.

2. **Assessments.**—As a means of financing, the idea of an assessment presupposes a plan or scheme of apportioning or determining an amount to be paid by each individual in a group. Assessments may be made as the principal source of capital, or, as oftentimes happens, it may be resorted to in aid of, and as auxiliary to other forms of financing. It may happen, for instance, that in extremely trying times, an already going concern may suddenly find itself in very tight situations involving unavoidable financial embarrassment unless something is done to obtain relief.

In this case, the association may decide to levy an assessment from the members based on an equitable and economical method, such as will make the burden of payment least felt by the members. The purpose of the assessment would then be principally to relieve the association of serious financial difficulties.

Looking at the assessment from this angle, it would appear that this method of financing is aimed at meeting deficiencies rather than at raising capital; and it would furthermore seem that assessments is one way of financing, and if it may be adaptable to emergency purposes it would just as well fit in as a way of raising ordinary capital.

Just on what should assessment be based, will depend on the circumstances of the

(Continued on page 13)

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Progressive Farming Notes

RECENT ADVANCES IN SOIL SCIENCE AND PLANT NUTRITION IN THE UNITED STATES *

By RICARDO T. MARFORI
Formerly, Government Pensionado in the
U. S.

1. Discovery of certain isotopes and their application in biochemistry or soil fertility studies: For example, the use of heavy nitrogen (At. wt. 15), heavy carbon (At. wt. 13), etc. in plant nutrition. These have been made possible because of the development and use of the mass spectrograph in the routine analysis of these isotopes.

2. Production of radioactive elements and their application in biochemistry: For example, the use of radioactive phosphorus and radioactive potassium in the tracer technique in plant nutrition. The activation of elements has become a routine work by means of the cyclotron or the betatron. The tracer technique or that of following the course of radioactive element, say phosphorus, absorbed by a living plant has been possible because of such devices as the Geiger counter, for instance.

3. Mineralogical methods for the study of silts and clays: The most modern methods are those with the use of the X-ray diffraction apparatus, the electron microscope, and the apparatus for thermal analysis of clay minerals.

Soil fertility studies demand a knowledge of the exact nature—molecular structure as well as chemical composition—of silt and clay minerals—kaolinite, montmorillonite, beidellite, etc. Base exchange studies have confirmed the results of such mineralogical studies of silts and clays.

4. Studies on the nutritional requirements of plants as well as of animals are now possible by the refinements in chemical analytical methods, such as by chemical spectroscopy—both by emission and absorption spectroscopy, polarographic methods and colorimetric methods of micro-analysis.

5. Soil micro-nutrient deficiency studies have been much advanced by spectrochemical methods and colorimetric methods. The zinc deficiency of pineapple; the boron deficiency of alfalfa, apple, citrus and other plants; the cobalt deficiency of pasture soils, which results in the malnutrition of livestock; and the copper deficiency of soils which affects both plant and animal nutrition had been discovered and remedied by means of refinements in chemical analytical methods.

6. The influence of manganese deficiency in soils on the synthesis of ascorbic acid (Vitamin C) in the foliage of plants is now

definitely establish in the United States.

7. The biological assays of some soil types gave comparative balanced fertility of the soil. These had been well tried in the University of Missouri, using domestic rabbits in the bioassays. The rabbits in lots of 8 to 10 were fed for six weeks, after weaning, with hays (Korean lespedeza) grown on different soil types. Animals fed with hay grown on fertile soils showed greater gains in weights, brighter eyes, more smooth or sleek coats or fur, heavier and bigger bones with greater breaking strength than animals fed with hay grown on the poorer soil types.

With cattle, preference had been shown for the hay grown on fertile soil to those grown on poorer soils, when the animals had free access to the stacks of the various hays.

Fertilizer treatments gave similar results. Cattle preferred the hays from the fertilized plots to those from the control or unfertilized plots.

8. In fertilizer practice, great progress has been made in devising accurate and reliable soil and plant tests to minimize if not to do away with guess work. In this way, extensive long-range fertilizer experiments in the field or in green houses can also be minimized.

In fertilizer placement, there has been much improvement in the method of application—that is, by fertilizer attachment to cultivators as well as to planters or drills. In general, there has been much progress in fertilizer placement in the soil.

9. In soil classification, the use of aerial photographs has greatly facilitated detailed, more accurately delineated survey work. The network of good country roads as well

as the findings of previous geological surveys are essential to soil classification work.

In tensile studies on the genesis and morphology of the more important soils of the various regions of the United States have been made. Notable are the studies on the loessial soils, the chernozem and prairie soils, the podsol or the forest soils, the desert soils of the arid south-western regions, and the sandy coastal soils of the humid southeastern regions.

10. In soil technology, there has been much development in the application of soil stabilizers, which "affords the means of improving and simplifying the whole technique of road making, and soils properly and effectively stabilized are able to support a relatively heavy load even though the water content is high." (MCLoad, 1943)

The most promising chemicals are combination of sodium silicate and sodium aluminate, raw tung oil, linseed oil, and a synthetic resin formed by a mixture of furfuryl alcohol and acid.

11. In soil conservation or more precisely, soil erosion control, intensive studies have been made on the effect of various types of vegetation or their combinations, or of various soil amendments on soil erosion losses on different important soil types with various slopes or grades. Soil erosion control such as terracing, contour plowing, strip-cropping, permanent soil cover-cropping, have actually saved millions of acres of agricultural lands from complete destruction and ruin. These had been observed especially in the extensive fertile loessial soils in central United States (principally Iowa) and in the vast rolling lands of Texas.

OUR COVER

President Roxas inspecting the Agricultural Machinery and Equipment Corporation (AMEC), factory for farm implements after which he said "Go Ahead". At President Roxas' left, smiling with pride and satisfaction is energetic Engineer Hilarion Henares, Manager of the AMEC and moving spirit of this government owned enterprise.

This tools that will be made will complement tractors for farm. Let them roll and keep them rolling for fruduction and not only for demonstration.

As Mr. Henares puts it, "to make agriculture pay, do it the AMEC way."

To the fold of the "AMEC Family" Mr. Henares invites all farmers.
Join the AMEC soldiers of the farm.

On President Roxas' birthday, expressing satisfaction over the progress of AMEC he said: "The AMEC plow factory is going to be the arsenal of Agricultural Machinery in the Philippines." And turning to Mr. Henares, he said, "Henares, you are going to be the custodian of that arsenal, the AMEC factory."

Home and Woman's Corner

JES—BAR

HOME AND WOMEN'S CORNER

This corner is dedicated to home and affairs of women who make the home. Home is a refreshing word full of memories for everyone. Its atmosphere therefore depends on the heart and spirit of the mothers who make it warm and happy, cozy and lovely, or cold and dreary.

In the Philippines as perhaps anywhere in the world, no matter how humble home maybe, home is sweet home.

This corner shall try to adapt itself to modern homes on the farm. Wherever women maybe, on the farm or the city, the homes they make often depend on their ages. To the young, perhaps dancing and

poetry and dresses would be important. So it's warm and happy. To the middle aged, perhaps cooking and furniture and linen. So it's cozy and lovely. To the old, perhaps music and serenity and security. So it's cold and dreary.

We dedicate the poem below to the serious, sensitive soul of the young home-maker.

Home is where one starts from. As we grow older

The world becomes stranger, the pattern more complicated

Of dead and living. Not the intense moment

Isolated with no before and after,
But a lifetime burning in every mo-

ment....

Love is most nearly itself
When here and now cease to matter.
Old men ought to be explorers
Here and there does not matter
We must be still and still moving
Into another intensity
For a further union, a deeper communion
Through the dark cold and the empty desolation,
The wave cry, the wind cry, the vast waters
Of the petrel and the porpoise. In
my end is my beginning.

POEM

(Reprint from Reader's Digest)

Questions . . .

odor is detected. In the brooding compartment, there should be a more frequent change of litter. In the yard, disinfection should be made now and then and new sand spread over the floor. In the swimming pool, cleaning and clearing should be made at least once a month.

62. *Why is the use of a thermometer necessary?*—Because it is more accurate than the most experienced operator, who is subject to colds and other ailments that may affect his efficiency.

63. *Why is a double door for the hatchery suggested?*—Because it makes it easier to keep a more even temperature. If there is only one door, every time a person enters the hatchery a draft cannot be avoided.

64. *Why is heating for newly-hatched duckling necessary?*—Because their vitality is easily affected by cold temperature.

65. *What is wrong with the feeding of ducklings in Pateros?*—The first feedings given lack the necessary protein, Vitamins, and minerals, and such lack is detrimental to the health of the ducklings.

66. *What kind of eggs intended for hatching should be selected?*—Only the eggs laid by a flock of ducks of at least one and a half years old during the high egg-production period. Eggs laid by young birds during the low production season should not be incubated, because the percentage of hatch will be low and the ducklings cannot be expected on the average to develop into very vigorous birds.

67. *Should ducklings of different ages be kept in one pen?*—Ducklings of different ages should be raised in separate pens. If this is not done many young ones will die, as the older birds are usually stronger and have a tendency to push the weak aside.

68. *Will ducks return to their own roosts if mixed with other flocks?*—As a rule, the native ducks have become so tame and domesticated that even if they happen

to get mixed with nearby flocks in separable pens, they always return to their respective places. This is especially so in cases where they have been kept in place for several months.

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Soil Conservation . . .

be managed and their activities controlled in order to be able to control all will the various soil processes which will influence the growth of crops and of animals.

The soil must be conserved and its crop-producing power must be improved in order to maintain good-crop returns to support the ver-incrasing population of the country. This is responsibility of the present generation towards the future Filipino people.

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MARCH OF EVENTS

By CHARLES McCABE
United Press Staff Correspondent

WASHINGTON, Dec. 18 (UP).—The U. S. Department of Agriculture made public today a summary of the 13 principal recommendations made by the recently returned Philippine-American Agricultural Mission.

The mission's conclusions are:

1. the appointment of a technical planning board which will be needed to advise the Philippine government on all phases of national planning;
2. the rehabilitation and improvement of facilities for the production, processing and marketing of agricultural products, both farm and factory, should have priority from both the national government and the War Commission;
3. four agricultural products — sugar, abaca, copra and tobacco — provided the major source of export revenue before the war and appear to be the most promising source of revenue for the immediate post-war period;
4. The Philippine government should place great emphasis on resettlement projects for economic and farm units, having in mind the mechanization and diversification of farming in both areas;
5. The urgent need for improvement of

the production of rice, and corn, for which the following steps should be taken—(a) mechanized production, (b) improvement of varieties through plant breeding, (c) introduction of leguminous crops into rotations with rice and corn, (d) more extensive use of fertilizers;

6. Effort should be made to increase the number of agricultural products both for export and home consumption, such as roselle, ramie, derris, cocoa, coffee, peanuts, citrus and other fruits;
7. Water resources should be utilized more extensively both for power and irrigation, with especial attention to drainage in new systems;
8. The livestock industry should be supported by: (a) a livestock improvement program of the Bureau of Animal Industry and a breed development program of the College of Agriculture of the University of the Philippines, (b) expansion of the livestock research program to include disease and parasite control, pasture development and range improvement, and (c) encouragement of private livestock breeders;
9. Greater mechanization of agriculture is desirable but it should be pursued cau-

tiously in a country in which labor is abundant, but fuel is scarce and farm units are small;

10. It appears advisable to consolidate the national commodity corporations and the national cooperative administration into a cohesive organization for the improvement in marketing of farm products;
11. Every encouragement compatible with democracy should be given for the development of industry;
12. Measures should be taken to strengthen education and research and the extension of other essential government services; and
13. There should be a three-fold plan of collaboration between the Philippines and the United States, thusly, (a) the loan of an experienced extension administrator to the Islands to aid in setting up and implementing an extension service, (b) the establishment of a service training program to enable the Filipinos, who are now employed in responsible agricultural agencies, to participate in the United States' agricultural programs in their respective fields, and (c) the establishment of a collaborative research program at the College of Agriculture, U. P.

Cooperative . . .

(Continued from page 10)

moment, these to be determined by the association concerned. Suggested forms of assessment are that of levying equal

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amounts from the members; that of assessing on the basis of gross volume of business turned in by each member; that of basing assessment on duration of the membership; etc.

To illustrate, suppose the XYZ Rice Growers' Cooperative Association has been operating for several years on a profitable basis. Because of present exceedingly hard times, however, it finds itself in a situation in which its assets are all tied up for the moment. Not that it is on the verge of bankruptcy, but that there is an immediate liability which it cannot meet without liquidating portion of its assets. It so hap-

pens that it could do this only at sacrifice prices. To avoid such course, the association decides to levy an assessment on the members to raise the needed sum. This
(Continued on page 17)

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RECENT ADVANCES IN SOIL
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IN THE U. S.

By: Ricardo Marfori

*—Mostly from actual observations made by the writer in his visits to different universities and institutions in the United States. Presented before the Bureau of Plant Industry Seminar (May, 1946).

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CULTURAL DIRECTIONS FOR

ONIONS

By PEDRO A. RODRIGO

Chief, Horticulture Research Section
Bureau of Pland Industry

The season for Bermuda onion culture begins in September in localities or regions enjoying the first type of climate, where there is a distinct wet and dry season. Under the other climatic types, planting should start at the end of the rainy season, so that the crop will come to maturity at the height of the dry season. In this connection, it should be understood that onion matures in five months, starting from sowing the seed in the seedbed to harvesting the crop in the field.

The best soil for onion culture is a rich sandy loam, although any soil of good fertility will be able to grow a good crop of onion. The essential requirements are: (a) a good amount of moisture in the soil (supplied either by rain or irrigation water) to support a good vegetative growth,

and (b) a period of rainless days towards maturity in order to have a good quality crop.

Ordinarily, seedlings are raised in a seedbed for a period of 4 to 6 weeks. If the seedbed is rich, the seedlings should be ready for transplanting in four weeks.

In the meantime that the seedlings are being raised, the field should be put in shape. It should be freed from weeds and put in fine tilth. Raised beds of about a meter in width and of any length has been found practicable for all purposes. In a meter-wide bed, three or four rows may be established and the seedlings set at 10 cm. apart in the rows.

In transplanting, the bigger seedlings should be pulled up first—this is to be done after the seedbed has been thoroughly watered. In pulling, the roots are given a natural pruning. Because of the nature of

the leaves, they should not at all be clipped off, as is generally done with other seedlings. The onion seedlings are hardy so they can be transplanted any time of the day except during noon time.

Regular watering and weeding are necessary during the first two months of growth. If available, give the young plant a side dressing of ammonium sulphate at the rate of about 200 kilograms per hectare during the first month. Towards maturity when the bulbs are about an inch or more in diameter, irrigation should gradually be withdrawn or sparingly applied.

As soon as the tops of the plants topple down, the crop has reached maturity. The plants are then pulled up, wilted for about a day, and then put in the shade for further curing.

Papaya Its

(Continued from Page 4)

thickens but not sugary. Pack in jars or cans and sterilize; 30 minutes for quart jars and No. 2 tall cans; 20 minutes for pints and No. 1 tall cans.

Besides the aforementioned methods for preparing commercial products of papaya, the following is a list of some recipes of papaya that may help or guide housewives, restaurants and refreshment parlors in varying their daily menu, prepared by Miss PATROCINIO SALES, former Home Economics Agent of the Plant Utilization Division, Bureau of Plant Industry:

Baked Papaya Combination

- 1 cup green papaya, sliced
- 1/2 cup tomatoes, sliced
- 2 tablespoons onions, chopped
- 1 tablespoon green pepper, sliced
- 1-1/2 tablespoons butter
- 1 teaspoon salt

1/8 teaspoon pepper, ground

Mix all the ingredients and place in a greased baking dish. Bake in moderate oven 30 minutes.

Creamed Papaya Soup

- 1 cup ripe papaya
- 2 cups water
- 2 pieces bay leaves
- 1 medium sized onion, sliced
- 2 tablespoons margarine
- 1/2 cup evaporated milk (add water to make 2/3 cup)
- 1/2 teaspoon salt
- a pinch of pepper

Boil papaya with bay leaves, water and onion, 10 minutes. Pass through a sieve

and set aside. Melt margarine; stir in the flour; add the milk and cook until thick. Mix the strained papaya and heat to boiling. Then season with salt and pepper. Serve hot.

Papaya Escabeche

- 2 cups green papaya, cut in strips
- 1 medium sized fish
- 1 large onion, sliced
- 1 head garlic, sliced thin
- 1 tablespoon ginger, sliced into strips
- 1 sweet-red pepper, cut in strips
- 3 tablespoons vinegar
- 1 hot pepper, cut in strips
- 1-1/2 cups water
- 3 tablespoons toyo
- 1-1/2 tablespoons flour
- 4 tablespoons sugar
- 2 tablespoons lard
- 2 tablespoons salt

fat for frying fish

Clean fish and sprinkle with salt. Let stand about 15 minutes, and drain well. Fry in hot fat until brown and set aside. Saute the papaya together with garlic, ginger and onions until half cooked; then add the salt and a mixture of hot pepper, vinegar, water, sugar, toyo and flour. Continue cooking until the sauce thickens and the papaya is almost tender. Place fish on a platter and pour over it the gravy mixture. Garnish with sliced red-sweet pepper.

Papaya Fritter

- 2 cups half ripe papaya, cut in small tubes
- 1-1/4 cups flour
- 2/3 cup milk, diluted with equal amount of water
- 2 teaspoons baking powder
- 1/4 teaspoon salt

1 egg

Mix the well beaten egg with milk; add to sifted dry ingredients; add papaya and mix well. Drop the mixture by teaspoonfuls in deep hot fat and fry until golden brown. Roll in sugar.

Papaya Salad

- 1 cup ripe papaya, cut in cubes
- 1 tablespoon cut boiled shrimps
- 1/2 tablespoon onion, chopped
- French dressing
- parsley
- fresh lettuce leaves

Mix papaya, shrimps and onions. Add the French dressing. Arrange on a bed of lettuce leaves on a salad plate, and garnish with parsley. Chill and serve cold if necessary.

Papaya Tidbits

- 1 cup candied papaya
- 1/2 cup papaya maraschino, well drained
- 1/2 cup roasted peanuts (other nuts may be used)
- 1/2 cup confectioner's sugar
- 1/4 teaspoon salt

Mix papaya, peanuts and maraschino and pass through a food chopper. Add salt and sugar and mix well. If somewhat dry, add a small amount of calamansi juice. Roll to a long, cylindrical form and dust with sugar. Let stand about 2 hours. Slice before serving.

Papaya-Pili Nut Roll

- 4 cups ripe papaya pulp, mashed
 - 2 cups sugar
 - 1 cup-pili nuts, roasted and chopped
 - 4 tablespoons glucose
 - 4 tablespoons calamansi juice
 - 1' teaspoon vanilla or any other flavoring
- Mix papaya pulp, sugar, glucose and ca-

lamansi juice and cook with continuous stirring until a paste consistency is reached (223°F). Remove from fire, add flavoring and nuts, and stir well. Pour on a greased pan and roll to about ¼ inch thick. Upon cooling, sprinkle the sugar. Roll as an ordinary roll, using a piece of clean cloth or oiled paper to effect a tight rolling. Cut crosswise to desired thickness.

Papaya Pudding

- 2 cups mature papaya pulp, mashed (boiled to softness)
- 1/2 cup bread crumbs
- 1 cup flour
- 1/4 cup butter
- 3/4 cup sugar
- 1/6 teaspoon salt
- 1 teaspoon flavoring (use vanilla, grated lime or orange rind)

Cream butter and sugar. Add well beaten egg, then flour. Add papaya, salt and bread crumbs, then flavoring. Steam in a buttered pan for 2-1/2 hours, or until done. Serve with sauce made as follows:

SAUCE:

- 1 cup milk
- 1/2 cup ripe papaya pulp, mashed
- 1/3 cup sugar
- 2 tablespoons flour
- 1/4 teaspoon vanilla

Mix all ingredients except flavoring and boil with continuous stirring, until thick. Add flavoring immediately after removing from fire.

Papaya Gulaman

- 2-1/2 cups crushed ripe papaya
- 1/2 cup gulaman (agar)
- 2/3 cup sugar
- 1/2 cup milk
- 1 cup water
- 1 tablespoon *calamansi* juice

Boil *gulaman* in water; add sugar and 1/2

tablespoon *calamansi* juice. When gulaman is all dissolved, remove from fire and strain well. Add the rest of the *calamansi* juice to the papaya and mix well and drain. Add *gulaman* and coconut milk. Pour in a mould. Serve when cold.

Papaya Okoy

- 2 cups green papaya, shredded
- 2 tablespoons onions, sliced
- 1 cup shrimp extract (made by pounding the heads and tails of shrimps, mixed with water and strained)
- 3/4 cup corn or cassava starch
- 1 teaspoon salt
- 1 tablespoon green onions, cut to small pieces a few small shrimps
- 1 egg
- 3 tablespoons coarse salt lard for frying

Work the shredded papaya with the coarse salt, wash and press out the water. Mix the onions and set aside.

Make a thin batter by mixing the shrimp extract, cornstarch, slightly beaten egg, and salt add the green onions. Place a tablespoon of papaya in a saucer and pour over it 1-1/2 tablespoons of batter. Place on top two or more shrimps, and fry in deep hot fat until brown. Serve with a mixture of vinegar, pounded garlic and salt to taste.

Papaya Chopsuey

- 2 cups green papaya, sliced thin and long
- 1/4 cup pork, cut into small pieces
- 1/4 cup shrimps, whole
- 1/4 cup liver, cut in pieces
- 1/4 cup cabbage, cut in pieces
- 3/4 cup broth
- 1 tablespoon flour
- 2 tablespoons lard

- 2-1/2 tablespoons *toyo*
- 1/4 teaspoon sugar
- 1 teaspoon kinchay, cut in pieces
- 2 small onions
- 1 Chinese sausage, cut crosswise to thin slices

Saute the pork, then shrimps, liver and sausage. Season with *toyo*. Add kinchay and papaya, then the broth. Boil until papaya is tender. Add onions, cabbage and sugar. Add a thin paste made with flour and about 4 tablespoons water. Boil until gravy thickens. Remove from fire and serve hot.

Papaya Lumpia

- 3 cups green papaya, shredded in long narrow pieces
- 1/2 cup pork, sliced in small pieces
- 1/4 cup shrimp, sliced
- 2 segments garlic, shopped fine
- 12 *lumpia* wrappers
- 1/4 cup broth or shrimp extract
- 1/2 cup sauce
- 2 tablespoons onion, sliced

Saute garlic in 2 tablespoons lard; add onions, pork, and shrimps and continue sauteing until done. Stir in the shrimp extract. Add papaya and cook until papaya is tender. Add sauce and mix well. Wrap in *lumpia* wrapper, just before serving and serve with sauce, which is prepared as follows:

Sauce

- 1-1/2 cups water
- 1/2 cup *toyo*
- 12 tablespoons cornstarch
- 12 tablespoons brown sugar

Mix all the ingredients and boil until thick, stirring constantly to prevent scorching.

—oOo—

Cooperative

(Continued from Page 13)

would remedy the immediate need and at the same time keep the association from financial embarrassment.

It would be a good policy if the amounts assessed for special purposes be refunded to the members as soon as the crisis shall have been lived through and the association's finances are once again back to normal. These refunds may be credited with interest.

3. Withholding payments.—The idea it involves is this: Instead of playing the farmer-members when they deliver their products to the association, settlement is paid only after the products are sold and the necessary expenses paid. Therefore, no immediate outlay of capital is required, but the association virtually operates on a financial policy similar to that of commission houses.

This system of financing may be unpopular because ordinarily the farmer wants to get or to secure payments immediately. But, where the spirit of cooperation is borne in mind, there is no doubt but that farmer-

members would see in this system a practical method of operating with the least outlay of capital. It cannot be doubted that this system is economical and at the same time equitable because the expense thus borne by each grower is apportioned according to his direct use of the services of the association.

The question may arise as to whether or not the payment of certain amount in advance should be guaranteed to the farmer-members. This is a question of policy which may be solved by the farmers themselves. They are best in position to agree on terms which should be most adaptable to the conditions of their locality.

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Cooperative . . .

Where an association deals in crops of perishable nature, the selling would be quick and, therefore, no questions would arise as to the withholding of payments over long periods. But where the products handled could be stored and marketed over comparatively longer periods, the question of advance payments may be met with. These, and like situations, are problem for the farmer-members themselves to decide.

4. Reserve fund.—This fund is an accumulation of sums set aside periodically from profits. The policy of retaining a certain percentage of the earnings is both wise and conservative. Instead of distributing the profits at the end of a period, a portion of same is withheld and kept at the disposal of the association for its use in meeting future contingencies. It is a form of savings account which the association accumulates and places at its disposal to be drawn upon when the need for it comes. As the fund accumulates in time, the capital of the association is thereby enhanced.

The reasons for the establishment of a reserve fund are obvious. The name itself indicates the fund to be one not for immediate use. Hence it may not necessarily be in cash but may be in the form of assets which could be easily made liquid. Its creation is desirable in order that unforeseen losses may be cared for without impairing the capital of the association.

Among the advantages of maintaining reserves are that an association is enabled to confidently meet contingencies, and that it is placed in a solid financial position which makes it better able to secure credit. Its entrenchment is made more secure; its stability is made more pronounced. The policy of creating and maintaining reserves may be found unpopular among members because it diminishes the profit available for distribution. But it must be remembered that cooperative organizations are essentially non-profit and the motive underlying their operation is mutual help among the members. The first object of a society should be to make itself financially strong enough to deal with a panic, or an accident, or emergency which may arise at any moment. And for this precise purpose, it has been said that a good reserve

fund is a pillar of strength.

An adequate reserve fund is almost a financial necessity in present-day financing. If a certain per cent of the earning is set aside regularly in a reserve fund, the association could, in time, finance itself with money which otherwise would go to farmer-members in the form of dividends. The producers themselves thus do the financing. It would be a wise policy for cooperative organizations to insert in their by-laws a provision for the creation and maintenance of adequate reserve funds.

BORROWED CAPITAL

Borrowed money begets interest. Because of this, borrowing outside capital should be resorted to only in cases when other methods of financing would result costlier. Borrowing money ranges from the simple commercial loan type to the more complicated system of floating bonds. The latter is adaptable only to big organizations.

Ordinary crop loans.—May be secured from banking institutions, either private or government owned or controlled, or from other outside organizations engaged in giving loans to farmers.

In its efforts to extend effective aid to farmers, the Commonwealth Government created the Farmers Loan Division, an agency to carry out the important task of rehabilitating the farmers through the grant of loans. The functions of the Farmers Loan Division, which used to be under the Bureau of Labor, have been absorbed by the Bureau of Plant Industry. Loans are contemplated to be extended through the agency of cooperative associations. The Agricultural And Industrial Bank and the Philippine National Bank are government controlled banking institutions which extend crop loans. There are also private financing agencies from which borrowing may be done. In some instances an organized association may borrow on its own account on the security of its assets or on that of its directors.

Danger of overborrowing.—The danger to be guarded against in the system is that of overborrowing. The capacity to pay must be the guiding element and no organization should borrow beyond its ability to pay back in the normal course of business. Then, again, no association should borrow more funds than it can reasonably have any use or need for. To this effect the making or proper estimates is essential. An association may have a borrowing capacity of twice or thrice what it needs for its purpose. The wise policy would be to borrow only what it can use and no more.

Reasonable interest rates constitute an

important factor in the system of borrowing. Now that limitations are imposed by law on usury, it is much easier as it is used to be to obtain loans at reasonable charges. An association must so prepare its budget estimates as to enable to secure always the best results.

The extent to which an association should depend on borrowed capital will have to be determined as a matter of policy by itself. Unwise borrowing may result in loss of control by the association over its affairs. The relationship between the association and its creditors may come to a point where the latter are in a position to dictate policies. In such cases the association becomes helpless and ineffective, as long as it remains so indebted. It is to be desired that borrowing should be on such a scale as to preclude the possibility of having the control of the associations interests alienated into the hands of creditors.

SUMMARY

Financing involves the question of raising money. By whatever method an association secures its funds either for fixing investments or for current expenditures, as the case may be, the fact remains that it must use an adaptable method.

The foregoing discussion has shown in brief the different methods resorted to in financing an enterprise. The methods described and suggested are by no means exclusive. They are the common forms utilized by established organizations. It must be known that the use of one method does not preclude the use of the others, and, as conditions may warrant, an association may employ one or more of them.

So it may actually happen that, in due time, an association organized as a stock association, with capital raised thru the sale of stock, and all shares thereof fully subscribed and paid for, may meet with the need of additional funds which it may decide to raise by levying assessment on members. Or, an association, the original capital of which proceeded from the levy of fixed entrance fees from members may decide to finance projected expansion programs by adopting a system of withholding payments. In short, adoption and/or modification of any of the suggested methods to follow would be a question of operation of cooperative associations.

READ

Farming
AND
Cooperative

(Continued from page 1)

P750,000 Allotted For Livestock

STATION	Length of Record	Average Monthly Rainfall	Average Monthly Rainy Days
	Years	m'm	
Cagayan, Oriental Misamis	4	108.3	15
Dansalan, Lanao	29	94.4	10
Dumaguete, Oriental Negros	27	114.4	14
Hacienda San Jose, Oriental Negros	19	128.5	11
Iwahig Penal Colony, Palawan	24	60.4	7
Hacienda Asia, Occidental Negros	10	55.6	6
Central Bearin, Occidental Negros	16	76.1	6
Binalbagan Estate, Occidental Negros	18	58.8	9
Isabela Sugar Company, Occidental Negros	16	59.2	6
Cebu Sugar Company, Talisay, Cebu	10	96.8	15
Cebu City	36	107.5	14
Hacienda Vallehermoso, Oriental Negros	19	118.1	12
Pontevedra, Occidental Negros	16	65.0	7
Lucena, Iloilo	20	70.7	7
Hacienda Lanjagan, Iloilo	10	124.6	10
Capiz, Capiz	36	144.1	17
Masbate, Masbate	34	182.7	17
Odiangan, Romblon	13	68.1	9
Romblon, Romblon	35	118.0	13
Boac, Marinduque	14	85.0	16
San Pablo, Laguna	13	46.6	10

AVERAGE MONTHLY RAINFALL AND RAINY DAYS FOR THE MONTH OF JANUARY IN DIFFERENT TYPES

Fourth Type:—No very pronounced maximum rain period and no dry season.

STATION	Length of Record	Average Monthly Rainfall	Average Monthly Rainy Days
	Years	mm.	
Lapac Agricultural School, Sulu	18	83.3	6
Glan, Cotabato	18	83.8	9
Jolo, Sulu	41	121.2	10
Paranglilap, Zamboanga	19	67.2	5
Letuan, Zamboanga	19	61.5	6
Upi, Cotabato	10	92.0	10
Davao City, Mindanao	36	122.4	9
Kidapawan, Cotabato	18	176.8	9
Maridagao Rubber Experimental Station, Cotabato	9	112.7	10
Camp. Mactan, Davao	6	253.9	19
Impalutau, Bukidnon	11	183.0	20
Siari Valley Estates, Zamboanga	9	54.6	6
Pamplona Plantation Company, Oriental Negros	11	184.8	13
Hacienda Palanas, Oriental Negros	19	125.5	11
Tagbilaran, Bohol	36	128.1	15
Maasin, Leyte	36	251.9	12
Hawaiian Philippine Company, Occidental Negros	18	191.1	12
North Negros Sugar Company, Occidental Negros	15	172.2	21
Janiuay, Iloilo	18	118.8	12
Ormoc, Leyte	36	173.5	16
Dueñas, Iloilo	20	86.9	21
Bitogon, Iloilo	20	154.2	13
Dumarao, Capiz	20	171.1	11
Dao, Capiz	20	154.2	14
Calbayog, Samar	35	201.3	20
Halcon Rubber Experimental Station, Mindoro	9	213.7	18
Naga, Camarines Sur	35	113.9	12

In line with the policy of President Roxas to speed up the rehabilitation of the livestock population of the country which was seriously depleted as a result of the war operations, the Department of Agriculture and Commerce has already placed order worth approximately P750,000 for the importation of breeding animals, according to Undersecretary Jose S. Camus.

Due to lack of transportation facilities, however, he says, only 27 pure-bred pigs, 315 chickens and 2 Arab stallions have so far been received. These will be used for the restocking of government breeding stations and stock farms. Orders have been made in the United States, India and South Africa and other countries.

These orders are in addition to 100,000 Leghorn and New Hampshire chicks ordered by the President from the United States, which have already been delivered and are now being sold to the public.

According to Secretary Camus, utmost efforts have been exerted to secure shipping facilities needed for bringing in the imported livestock within the shortest period of time possible. President Roxas, it was learned, is particularly desirous to bring in as many work animals as possible from Indo-China at the earliest practicable date to help solve the present food problem which is the primary objective of the current national food production campaign.

—oO—

tenants of Central Luzon have been caused by the delay, if not the failure, of the government to enforce the new tenancy law.

"Fortunately, we have at the helm of our government able and patriotic men. The recent act of Secretary Ozaeta in revoking an order of the department of justice in the enforcement of the tenancy law with a view to meeting the requirement of swift enforcement of the law clearly attests to the high caliber and integrity of Secretary Ozaeta whose responsiveness to the demands of the effective enforcement of the new tenancy law is a sure guarantee for its swift and expeditious enforcement."

—oO—

Urges Enforcement of 70-30 Share Law

Pointing out that no law is easier to enforce than the 70-30 crop-sharing provisions of Republic Act No. 34, Rep. Jose J. Roy (Tarlac, L) appealed to all government officials to enforce the law in order not to give cause to the tenant population of the country for doubting the sincere motive of the administration in its desire to ameliorate or improve the lot of the tenants.

The Tarlac congressman issued the appeal last night in a speech over station KZPI in connection with the daily peace and order program of the department of the interior.

"It now becomes the serious task of the government," Congressman Roy said, "to enforce the new tenancy law effectively. Discontents bordering on unrest among the

IN LIGHTER VEIN

(Reprints from Reader's Digest)

Whistle Stops

A YOUNG matron was enjoying the attentions of her dinner partner, a handsome Westerner. "But how old do you think I am?" she asked.

"Shucks," he replied, "I don't know, ma'am, but if I saw you on the street, I'd whistle first and estimate afterward."

A VIVACIOUS brunette of about 40 was standing on the boardwalk at Virginia Beach when she heard an admiring whistle from a very young sailor. He ambled up purposefully with his cap pushed jauntily over one eye.

"Son," she reproved him gently, amused and flattered, "don't you flirt with me! I'm a grandmother."

"But, grandmother," replied the undismayed sailor, "what big eyes you have!"

If WE treat people too long with that pretended liking called politeness, we shall find it hard not to like them in the end.

The Milkman Cometh

A MILMAN'S life is never dull, and Vancouver milkmen have learned not to be surprised at any sort of request. Here are copies of notes actually left by customers:

Dear Milkman: When you leave my milk, knock on my bedroom window and wake me. I want you to give me a hand to turn the mattress. P. S. Hope you don't mind.

Dear Milkman: My back door is open. Please put milk in refrigerator, get money out of cup in drawer and leave change on kitchen table in pennies because we want to play bingo tonight.

Dear Milkman: When you leave the milk please put coal on the furnace, let the dog out, and put the newspapers inside the screen door. P. S. Don't leave any milk.

DON'T marry for money; you can borrow it cheaper.

THE SECRET of life is not to do what you like, but to like what you do.

IF SOMEONE betrays you once, it's his fault. If he betrays you twice, it's your fault.

THERE IS a Hindu proverb which says, "You will only grow when you are alone."

HE WHO marries might be sorry. He who does not will be sorry.

As long as a woman can look ten years younger than her daughter she is perfectly satisfied.

WITH OUR GOVERNMENT

We take pleasure in announcing to our farmers, farm hands and farm employees, of a vital opportunity to be useful in the mechanization of farming. The AMEC has opened up a school for tractor operators.

We wish our friends in the fields will take note of this important step of the government. (Editors).

J A D F A R M S

TOKYO, Jan. 6 (INS)—Filipinos who blame food lack upon antiquated farming methods and whose government is sponsoring the mechanization of farms as a way out of agricultural difficulties, will be interested to know that almost six million people have an old fashioned way of doing things that is more productive than anything the machine age can boast about.

But that is a fact in Japan.

Japanese farmers cannot use tractors or other machinery on their farms and get as good a crop yield as they do now, with methods that look antiquated to an American.

Wolf I. Ladejinsky, department of agriculture economist loaned to Gen. Douglas MacArthur to work on Japan's agricultural problems, said without reservation:

"It would be a step backwards rather

than forwards if Japanese agriculture was mechanized.

"The Japanese farmer literally has learned to grow two blades of grass where one grew before."

He quoted figures.

"Japan has the highest crop yields of rice and wheat of any major rice or wheat growing nation in the world," he said.

"The Japanese raises almost twice as much rice from an acre of paddy land as the farmer in any of the other rice growing nations of Asia.

"Furthermore, the Japanese rice farmer grows 65 bushels of rice on the same acreage from which an American gets 40 bushels.

"In the wheat fields, the Japanese gets 28 to 30 bushels per acre while the Ame-

Continued on Page 20

OUR PLEDGE

With the beginning of the New Year 1947, we want to reiterate once more our pledge to the cause of better farming in our country. The Philippine Farmers Association Incorporated has for its purposes the following:

1. To foster a close relationship among farmers;
2. To organize efforts for the stabilization of agricultural production;
3. To promote improvements of rural life;
4. To encourage improvements in the efficiency of farm management, and
5. To cooperate with the government for the speedy rehabilitation of the Philippine economy.

To carry out the above objectives, the Corporation shall undertake the following principal activities:

1. Maintain an information service among members on matters relating to farm management, marketing of farm products, agricultural credit, rural improvements, farmers cooperatives, and soil conservation;
2. To operate, an agency for members, for procurement of commodities, sales of farm products, and placement of services;
3. Finance agricultural operation and farmers cooperatives;
4. Operate and administer farms;
5. Establish processing plants for farm products;
6. Publish a monthly agricultural journal; (Farming and Cooperatives)
7. To do all such other things as are incidental and conducive to the attainment of the above objects or any of them, or which may be conveniently carried on and done in connection therewith, or which maybe calculated directly or indirectly to enhance the value of or render profitable any business or property of the corporation, always provided, that nothing shall be done in connection with the above objects which is prohibited by any laws of the Philippine Islands, now or hereafter existing.

We have kept faith with our pledge in the past although in a small way, but nevertheless in harmony with past circumstances. We are looking to the future with high hopes, to a more active, more vigorous achievement in this year 1947.

Happy and Successful New Year to All.

Govt. Starch 5-Year Machine Farm Plan

The production of rice by large-scale mechanization farming, the first project of its kind ever to be undertaken in the Philippines, will begin this week when tractors will begin to plow about 2,000 hectares of virgin land on the Sabani Estate in Nueva Ecija.

Orders to carry out the initial project of the government's farming by machinery, which is expected to blaze the trail for mechanized farming in this country, have been issued by Miguel Cuaderno, secretary of finance, in his capacity as chairman of the board of the National Development

Company.

This first project of the government's ambitious five-year rice production program, which has been outlined by a commission headed by Felipe Buencamino, Jr., will be undertaken by the Rice and Corn Administration, a new subsidiary of the National Development Company, which was created only a few days ago. Buena-ventura G. Lopez, member of the Rice and Corn Production Commission, has been named head of the RCA.

—oOo—

Jap Farms. . . .

Ladejinsky said the Japanese farmer, forever fighting a scarcity of land, had to learn to get more intensive yields.

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Philippine Farmers Association
1055 Alegui, Manila,

Essay Contest Among Rural

AND

Agricultural High School Students

- TOPIC:**
1. "How 'Farming and Cooperatives' Can Best Serve my Community."
 2. "How Can Better Farming Methods and 'Farming and Cooperatives' Journal Improve My Community"
 3. "What Better Farming Methods and Cooperative Associations May Improve My Community."
 4. "Why Do We Need Better Farming Methods and Cooperative Associations in My Community."

- GIVE:**
1. Address of High School.
 2. Name and Address of Students.
 3. Name and Address of Principal.

- ESSAY:**
1. The write-up should not exceed 300 words.
 2. The write-up should give constructive suggestions limited to your community only.
 3. Criticism on your Community Welfare and suggestions to improve it, should not include the political aspect.
 4. Criticism on the journal and suggestions on how it may be improved to best serve the welfare needs of your community must take into account cost of making the journal.

- CONTESTANTS:**
1. Only third and fourth year high school students may compete in this contest.

- DECISION**
1. The final judge for every High School of selected essays will be the principal of said High School.
 2. Every month the Principal will choose from essays submitted by his students, the five best essays of his High School for that month.
 3. The decision of the Principal shall be final and irrevocable.
 4. The Principal may submit these five essays (not more) each month from his school.
 5. These essays are then sent to the Managing Editor of "Farming and Cooperatives" at 1055 Arlegui, Manila, to be published in the succeeding issues of the journal. Every month, there will be several winners from different High Schools which will be published. A published essay is a winner and will receive one year free subscription to the journal.
 6. Among these published essays will be selected, by 2 judges and the Editors of "Farming and Cooperative," the best, second best, and third best essays for the year, which will be entitled to prizes stated below.

- PRIZES:**
will be:
1. To the three winners among all High Schools at the end of the year prizes

First Prize	P100.00
Second Prize	50.00
Third Prize	25.00

2. Plus one year free subscription to the magazine.
3. These three winners, if any is graduating from the High School, will be offered free scholarships to the Araneta Institute of Agriculture, if he chooses to continue studies there.

BEGIN NOW!!!

★ □ ★ □ ★

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