Prepared under Report 931:1274
"Nutrition: Consumption Effects
of Agricultural Policies"

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This study has been elaborated by the personnel of the "Study of the Effects of Agricultural Development Policies on Food Consumption in Central America', under the technical responsibility of Lic. Magdalena García Ugarte.

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This document is part of a series of studies prepared for the Project "Study of the Effects of Agricultural Development Policies on Food Consumption in Central America", the purpose of which is the development and application of a quantitative methodology to analize, initially in Honduras, the impact of agricultural policies on patterns of consumption and foodstuffs in the units of sectorial and institutional planning within the Honduran Government, and latter, disseminate the technical and methodological results to other Central American countries.

The Project is executed in compliance with a Technical Cooperation Program suscribed by the Secretaría Permanente del Tratado General de Integración Económica Centroamericana (SIECA); the Secretaria del Consejo Superior de Planificación Económica (CONSUPLANE) and the Secretaria de Recursos Naturales, representing the Honduran Government. The Project is also supported by financial contributions from the AID Regional Office for Central América and Panamá (ROCAP).

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I INTRODUCTION

The Technical Cooperation contract suscribed by the Honduran Government and the Secretaría Permanente del Tratado General de Integración Económica Centroamericana (SIECA) for the execution of a study on the effects of the agicultural development policies on patterns of consumption and foodstuffs in Central America, basically pursues the development and application of a quantitative methodology to analize, initially in Honduras, the impact of agricultural policies on patterns of consumption and foodstuffs of different population groups, in order to institutionalize this analytical frame within the sectorial and institutional planning units of the Honduran Government, and later, disseminate the technical and methodological results to the other Cental American countries.

The contract originally included the building of sub-regional behavior agricultural models, beguinning with the Southern Region and spreading it out to the other regions in order to build an aggregate model for the other four or six regions, congruent with the model for the Southern Region.

Linear programing is the methodology to be used in the building of the models, but including significant details on the

behavior of the small farmers as producers and consumers, and their relationship with other groups. In this sense, the methodology differs from other optimization models at farm level built in Honduras, in which the objective function incorporates improvements in consumption and nutrition for the small farmer family unit.

Throughout the development of this Project it became obvious that the building of a regional model could not be initiated until a model at farm level had first been built; on the other hand, as a result of evaluations, the usefulness and importance of the elaboration of several regional models within the framework of economic planning was questioned; particularly in view of the methodological difficulties in relating them to each other to build a national model.

Hence, even though it had not been included in the terms of reference of the Technical Cooperation Contract agreed upon between the Government and SIECA, and for the reasons explained in the preceeding paragraph, the efforts necessarily had to be oriented to the building of a farm model in order to proceed, later on, with the regional model for the Southern Region. Moreover, based in the recommendations formulated in the evaluation meetings, and taking into consideration the limitations of time and technical

personnel, the work plan was modified to direct the activities towards the building of a farm model, a regional model and a national model.

This report presents a description of a farm model and illustrations as to its usefulness for the simulation of policies that could be applied to agricultural and nutritional development.

There are several ways to introduce consumption patterns at farm level in the linear programming models; the most widely used is to incorporate restrictions on consumption. In this document the following models are developed:

a) A model for a small farm (3 Mzs.*) located in a relatively infertile zone of the Southern Region, in which the nutritional component is incorporated by describing the relationship between the intake of nutrients and income, according to the methodology proposed by Drs. Daniel Salcedo and Roger Norton. 1/

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* Manzana = 1.7 acre

1/ A detailed explanation of this methodology can be found in the document "Nutrition Relationships in Farm Models" written by Roger Norton and Daniel Salcedo. July 1982. Doct. 28/82 of Project " Study of the effects of Agricultural Development Policies on Food Consumption forthe Central American Population" Honduran Government - ECID/ SIECA.

b) A model for a large farm (50 Mzs.) located in a relatively fertile zone of the Southern Region which incorporates commercial crops. The nutritional component is handled traditionally through a restriction in the intake of nutrients.

c) In each of the above models the nutritional component was incorporated by introducing Engel's Curve, estimated for farmers based on the Income and Expense Survey, as well as on the contribution of the principal products to the total intake of calories and proteins.

The data used for building these models was obtained from different sources: the Censo Nacional Agropecuario de 1974, the Encuesta de Coeficientes Técnicos y Gastos de Producción de la DPS/SRN, the Encuesta de Ingresos y Gastos de los Hogares en Honduras 1978, de la DGEC, CONSUPLANE, UNAH y BCH, and the Encuesta de Consumo de Alimentos 1978-1979 de SAPLAN.

II DESCRIPTION OF THE REGION

The documents "Descripción agro-económica y social de la Region Sur" Doct. N°16 and the "Informe sobre suelos, uso actual y capacidad de uso de la tierra de la Region Sur" 2/ Doct. N°33, contain a detailed explanation of the economy, agricultural, social and demographic aspects of the region. Data is available, and additional information at municipal level, is in the process of being published, regarding the availability of labor; as well as stratified data (6 stratas) by farm size on land use, production and yield, so that it becomes unnecessary to discuss it here. Nevertheless, as this report refers to linear programing models for a small farm (3 Mzs.), located in relatively infertile lands, and a large farm (50 Mzs. or more) in relatively fertile lands, it is necessary to explain the criteria followed to determine the degree of fertility, as well as of representativity in the region, of the farms included in the stratas used as patterns for the models.

2/ "Descripción agro-económica y social de la Region Sur." Doct. 17/81 and"Informe sobre suelos, uso actual y capacidad de uso de la tierra en la Región Sur" Doct. 33/82. Prepared by the Project "Study of the effects of Agricultural Development Policies on Food Consumption in Central America" Honduran Government-ECID/SIECA.

The Honduran Southern Region comprises 36 municipalities: 16 in Choluteca, 9 in Valle, 4 in Francisco Morazán, 5 in El Paraíso and 2 in La Paz.

The difference between 'relatively infertile' and 'fertile' soils of the different municipalities was established based on the degree of slope and its fertility. Under the denomination 'relatively infertile' were grouped those in which almost the whole area had slopes ranging from 15 to 60°, with soils ranging from loam sandy, loam silty to sandy loam, which are the types of soils that prevail in the zone.

The municipalities under the category 'relatively fertile' soil, are those with a considerable extension of flat or relatively flat lands (40%), with soils generally identified as loam-loam silty, loam-cleyey, sandy, and stony clay.

The results were: 27 municipalities within the 'relatively infertile' and 9 in the 'relatively fertile' categories. Annex 5 shows the list of the municipalities included in each category.

Another important aspect for the purposes of this work is the number of farms included in the stratas in which the model has been tested.

In this respect, insofar as the municipalities with 'relatively fertile' soil are concerned and in accordance with the 1974 agricultural census, there were at that time 7337 farms with less than 3 Mzs., with a total surface area of 10,600 Mzs, representing approximately 36,600 people,if we consider each farm representative of a family unit with a 5 member average.

Even though the land in these municipalities generally has very steep slopes and should not be used for agriculture, reality shows that this is how it is used, especially for corn and sorghum.

Due to soil and topography limitations the 3 manzana model for agricultural exploitation is circumscribed to the cultivation of a corn and sorghum combination farmed by traditional methods and a low degree of technology, since advanced agricultural practices cannot be applied in this environment.

In the municipalities under the 'relatively fertile' category there were, in 1974, 5119 farms smaller than 3 manzanas with a total area of 7438 manzanas. If the same pattern is applied (5 members per family unit per farm) the total would come to 25,600 people.

The comparison established in the preceeding paragraphs demonstrates the usefulness of the farm model in the simulation of policies that could be applied to improve the socio-economic conditions of the small farmer.

The larger farm model (50 Mzs.) used in the simulation of policies in 'relatively fertile' lands, enables the inclusion of larger combinations of crops. The number of farms over 28 manzanas in municipalities with fertile soil, came to 1105 in 1974, with a total area of 170.622 Mzs. It is possible that part of these lands were affected by the agrarian reform process; nevertheless, this type of process has been oriented towards the creation of community farms, therefore it is considered that the number of farms and the land extension of farms larger than 28 Mzs., has not changed significantly, eventhough the ownership and operational systems have been altered! In any case, the model is equally applicable to a large farm of single ownership than to an agrarian reform communal farm.

Table N°1 shows the percentual relation of the productive structure of the Southern Region according to size of farm and sub-region (relatively fertile or infertile soils).

TABLE N°1

PRODUCTION STRUCTURE

REGION: SOUTH

SUB-REGION: RELATIVELY FERTILE SOILS

Percentual Relation

Strata Size Farm	Cultv. Area (Mzs.)	Corn I Only	Corn I Comb.	Corn II Only	Sorghum Comb.	Rice	Sesame Seed	Cotton	Sugar Cane
3	6942	.36	.46	.16	.47	.01	.01	-	.01
3-72	24909	.25	.45	.12	.45	.01	.04	.02	.01
72	16498	.15	.13	.04	.12	.06	.03	.24	.28

SUB REGION: RELATIVELY INFERTILE SOILS

Strata Size Farm	Cultv, Area (Mzs.)	Corn I Only	Corn I Comb.	Corn II Only	Sorghum Comb.	Beans I Only	Beans I Comb.	Beans II Only
3	9112	.14	.63	.10	.63	.01	.03	.04
3-72	34888	.10	.58	.08	.36	.09	.19	.33
72	7473	.19	.27	.04	.24	.02	.06	.05

SOURCE: National Agricultural Census 1974

III TECHNICAL COEFFICIENT

Annex I shows the technical coefficients used to build these farm models, obtained from information in the "Encuesta de Coeficientes Técnicos y Costos de Producción" by DPS/SRN.

The following were the estimated requirements for each crop: monthly labor, mechanical and animal traction, improved indigenous seed, fertilizers, chemicals and other production costs. Yield and sales prices were also calculated to determine the return of each crop according to cycle and technology.

TABLE N° 2

DAILY AVERAGE CONSUMPTION

Annual Income	0 - 999	1000-3999	4000-9999	Rural Southern Region
Product	Amount gr.	Amount gr.	Amount gr.	Amount gr.
Milk	28.8	55.8	83.5	36.4
Eggs	12.0	20.1	26.1	26.6
Cow Mt.	15.2	30.1	72.3	14.4
Pork "	14.3	20.7	46.8	8.6
Poultry	3.4	10.6	5.5	8.5
Beans	42.2	50.2	42.8	58.0
Rice	27.1	40.8	54.8	23.2
Corn	254.4	194.1	134.5	240.1
Sugar	43.6	34.3	99.3	23.7
Lard	10.1	17.3	20.4	10.2
Coffe	7.7	8.5	9.3	6.8

SOURCE: Foodstuffs Consumption Survey
First Report SAPLAN

V RESULTS OBTAINED FROM A MODEL FOR A SMALL FARM

1. Model Description

Annex 2 presents the matrix for the lineal programing model for a small farm, which is described as follows:

a) Production Structure

The farmer confronts ten alternatives for production, being able to choose from planting either corn, beans or sorghum, be it singly or combined, in the first or second crop of the year. He can also choose between two types of technology: non-technified (traditional), that is, without utilizing improved seed, fertilizers or chemicals; or semi-technified, in which he utilizes the above mentioned inputs.

The model has been set-up in such a manner, that in order to be able to acquire the inputs the farmer must be subject of credit. At the same time, to carry out the necessary agricultural activities neither animal nor mechanical traction can be used due to the steep slopes of the lands in the farms object of this study.

b) Production Destination

The products obtained from the farms can be destined either for auto-consumption or sale. In general these farmers consumed 80% or more, of their production.

c) Labor

The available family labor can be either used in activities belonging to the farm or be hired out. At the same time the farmer can hire outside labor.

d) Income and Expenditures Balance

Income for the farmeris obtained from the sales of his products or from the hiring out of family labor. His expenses reflect costs of production and costs of foodstuffs.

e) Resources Availability

The farmer makes use of 3 Mzs. of land and 30 man-days per month of family labor.

f) Nutritional Components

The nutritional component of calories and proteins has been introduced in the model as a function of the surplus, this surplus being defined as the Net Income less food expenses.

The ratios used in this model are the following:

(a) Calorie consumption = 1.96 + 0.00185Y

(b) Protein Consumption = 0.04 + 0.00016Y

These ratios were obtained utilizing information from the "Encuesta de Consumo de Alimentos" (Food Consumption Survey) of SAPLAN, and from the"Encuesta de Ingresos y Gastos" (Income and Expense Survey).

The above method was modified later with the introduction of Engel's Equation (Ratios between food expenses and income) along with the proportion of calories supplied by each foodstuff. The ratio Expenses on Foodstuffs = 2.32 + 028Y was obtained. This ratio expressed in monthly per capita values.

g) Objective Function

The model seeks to maximize the surplus (net income) after satisfying all the nutritional requirements of the producer farmer and his family.

2. Analysis of Results

The use of quantitative micro-economic models could be very important as a source of information for policy formulation. It could also be a handy tool to determine the importance of assumptions used to measure the results of

analysis such as policy objectives, implements to be used and non-controllable factors. Consequently, the sensitivity analysis results in a more efficient use of the available resources.

To illustrate the usefulness of the farm model as an analytical tool to be used by planners, this study presents policy simulations on hypotetical farms of 3 Mzs. on relatively infertile soil, and 50 Mzs. farms of relatively fertile soil; both in the Southern Region and representative of the reality of the zone.

The results of these simulations are shown in tables 3 to 8 and the following appreciations are made: Table 3 shows the results of credit policies in a 3 mz.(or less)model farm.

In the basic solution, without credit assistance, the farmer directs his activities to non-technified production, combining corn and sorghum in the first crop, and planting beans in the second crop. Production expectancy is 30 qq for corn, 8 for beans and 12 for sorghum; of which 22, 3 and 12 respectively are sold. The difference is kept for auto-consumption.

The cash results obtained from the sale of the surplus under the above mentioned conditions, could amount to L.338.00 per annum. Insofar as calories and protein consumption is concerned, the results are not adequate to fulfill the mimimum nutritional requirements.

In the basic solution all the labor used in the farm is family labor.

The simulation with the use of credit shows the changes that could take place as the rate of interest is modified. As for the farmed area, a higher degree of technology is observed when the rate of interest decreases, especially when it goes from 50% (private money lenders) to 20% (bank credit).

The total of credit used does not vary significantly when the interest rate drops from 20%, which could mean that a credit policy with reasonable interest could be as effective as a no-interest policy.

When a higher degree of technology is applied, the corn yield increases substantially; the increase is less substantial in the surghum production and, in

of consumer goods for the second one. As point of reference, the basic solution described before is maintained (Policies without credit availability).

When a 50% reduction in the price of consumer goods is simulated in the model, there are no changes relating to the basic solution inasmuch as the distribution of farmed land and the use of production technology is concerned; but sales, and auto-consumption patterns are modified as the farmer decides in favor of selling all his crops and buying the same products at subsidized prices, thereby increasing his cash surplus.

When the simulation is for a 50% reduction in the price of production imputs, the results show an increase in the semi-technified farming of corn, both for the first and second crops, maintaining reduced areas for sorghum and beans. The production of corn is increased considerably in relation to the basic solution, and of course, sales are also increased. Auto-consumption increases too. All of the production of sorghum and beans is destined to family consumption increasing thereby the intake of calories and proteins.

When credit is used, family and hired labor are intensified coincident with larger farmed areas and more advanced cultural practices.

Different simulations can be made according to the type of policies to be evaluated ex-ante. Table 5 registers the results of the simulation of different policies, starting from a basic model with credit availability at cero rate of interest.

The first simulation, from right to left, shows the possibility to increase the area of farm land from 3 to 7 manzanas (results of an agrarian reform) which could bring forth the following results:

- Substantial increase in the non-technified farmed area of a combination corn-sorghum.
  As a result, an increase in the production of corn and sorghum.

- Greater sales of both products and increased autoconsumption resulting in a higher nutritional intake and greater cash suplus.

- Another interesting aspect is the considerable increase in the use of hired help.

be seen in the purchases of corn and beans registered in the model.

The next simulation is of a 50% reduction in the price of the agricultural inputs which accounts for the total semi-technification of the farmed land used for the first and second corn crops, and leaves a small area for bean cultivation. Credit is used in the same proportion as in the basic model. It is under these circumstances that the highest yields are obtained; larger amounts of grain are destined to auto-consumption with a noticeable improvement in the intake of calories and proteins as well as greater cash surplus. There is also an increase in the use of family and hired labor.

VI DESCRIPTION AND RESULTS OF A LARGE FARM MODEL

1. Model Description

a) Production Structure

The farmer confronts thirteen production alternatives, being able to choose from planting either corn or sorghum which can be produced through three different technologies, and/or planting cash crops such as cotton, sesame seed, rice and sugar cane.

b) Labor

For production activities either family or hired labor can be used. For cotton and sugar cane planting the farmer can only use hired labor which has a different rate at harvest time.

c) Soil

The use of soil resources is calculated on a monthly basis and all the crops compete for the same land area.

d) Other Inputs

The other production inputs are treated as a whole, accounting for:

i) Amount of seed used, differentiating between indigenous and improved.

ii) Quantity of fertilizers used.

iii) Expenditures in chemicals.

iv) Amount of tractor/hours and animal power/days

v) Other expenses incurred into during the production process.

The use of inputs is based on the assumption of an unlimited offer, that is to say that the farmer can have any amount at his disposal.

e) Production Balance

The total production for each product is accounted for; in the case of corn and sorghum the production can be used either for auto-consumption or sale.

f) Income and Expenditures Balance

The total result of the farmer's operation is accounted for; the income reflects the sale of products and the expenditures the costs of production and foodstuffs.

g) Nutritional Component

The nutritional component was incorporated according to the established pattern for this type of model; that is to say restrictions were established for the amount of calories and proteins to be consumed.

Latter, in order to simulate a consumption pattern in the model, the aforementioned treatment was modified incorporating Engel's equation (ratio between foodstuffs expenditures and income) together with the total proportion of calories contributed by each type of food. The Engel's equation used in this model is:

Food expenditures = 8.23 + 0.09Y where the variables express per-capita monthly values.

h) Risk Matrix

Generally, agricultural producers are subjected to fluctuations in yield and prices. In the particular case of the agricultural product that offers a greater income return but at the same time demands higher technification and costs, the yield fluctuations (due to climatological or phyto-sanitary problems), or price fluctuations (market inestability), are determining factors in the decisions made by the producers, since those risks affect their income. Consequently, there exists in each producer his own risk aversion which becomes evident, with greater intensity, for the crops destined to the international market. The degree of aversion lessens in

degree of technification required for the export crops, the price fluctuations in the external market, and the climatic variations, turn these crops into a higher risk than the traditional ones. To take this factor into consideration there has been included in the model a risk aversion coefficient as a restrictive factor in the return potential of these crops. The basic solution model includes a risk aversion coefficient as well as credit access; in this manner the simulations have been based on the following three assumptions:

a) 50% subsidy in the price on inputs

b) 50% subsidy in the price of foodstuffs, and

c) An increase in the availability of land.

Nevertheless, before explaining the expectations of the results of these three assumptions, it is necessary to refer to the response of the basic model to the risk aversion. On this point it is observed that when the risk aversion equals cero, the farmers tend to use the larger amount of land to cotton production which offers the greatest return; but, as risk aversion increases, the land area cultivated with cotton decreases, and increases the extension of land

the traditional crops (basic grains) because: are used for family subsistence, the degree of technification is not as intensive which represents lower costs, and they are sold at the national market, better known and more controlable by the producers.

The above mentioned risk aversions are incorporated in the farm model to avoid in the optimum result planting plan, results that over-estimate the riskier crops and uder-estimate the less risky.

Risk is considered as a cost to be substracted from the total profit.

2. Analysis of Results

The hypotetical case of the large farm (50 mzs.) located in relatively fertile lands allows the appraisal of the simulations of the model with more complex production relationships as much as for the larger extension of land farmed, as for the diversity of crops planted. Included in this model are export crops such as cotton, sesame seed and sugar cane, as well as the traditional crops for internal consumption. It has been already explained in this study, that the high

cultivated with rice, which, after cotton, offers the greatest return. (see table N°6). When the simulation assumes a 50% subsidy in the costs of inputs, the producer shifts his production efforts to rice so that all the available land is destined to that activity; this is an idicator that, when the aforementioned circumstances prevail, rice becomes the most attractive crop. Also, the use of credit increases somewhat, as well as the use of hired labor, even though the latter is kept at lower levels than when cotton is grown. A remarkable result of this simulation is the cash surplus which is attributable to two reasons: first, the considerable increase in rice production as a result of a higher degree of technology and the use of larger amounts of inputs; and, second, to the savings resulting from the reduction (by half) in the price of inputs which represent the most expensive items in the costs of technified production.

The next assumption, shown in table N° 6, is the subsidy in the price of foodstuffs; the answer is similar to that of the basic model, in as much as a lower price on foodstuffs does not influence the production decisions made by the farmer of medium or large farms, since the basic factors that determine those decisions

are of an economic nature, which does not seem to be the case in the smaller farms.

In the third assumption, the availability of farming land increased from 50 to 70 Mzs. Under these circumstances the answer is the same as in the basic model, in the sense that the production decisions, even though in a larger extension of land, are oriented to those products which offer the greater returns such as cotton and rice, going from the first to the second as the risk aversion increases.

When matching these results against the original model (tables 3 and 6), there are no changes in the production structure. The basic differences in the results of these models refer solely to the consumption patterns; in the original model the calorie and protein intake comes from auto-consumption of corn, beans and sorghum; while, when the Engel's equation and the calories obtained from different foodstuffs are introduced, a more balanced and representative diet than the one observed in reality is obtained.

In other tests made there was included in the model the distribution of foodstuffs purchased and the results can be seen in tables 7 and 8.

In the case of the model for a small farm, when the total production is sold and the foodstuffs acquired through purchase, there can be seen an increase of L.174.00 in the surplus obtained by the producers in relation to the results of the original model, and an increase of L.189.00 if the results are matched with the use of credit policies.

The large farm shows a difference in the production structure due to the fact that in the model that includes the Engel's curve a restriction was imposed in the sugar cane crop; that is why in the solution there appears only an area of 14 mzs. for this crop. Nevertheless, the model responds in the same form as the original with respect to the rest of the products, that is to say, with a risk aversion coefficient of cero, the farmer cultivates most of the total area with cotton; this situation has a tendency to diminish as the risk aversion increases, making the farmer shift to rice which is a crop with less risk.

Another difference that can be observed in both models is in the intake of calories and proteins: 1980 calories per person in the original model and 1140 in the model with the Engel's curve. The decrease in the calorie intake is due to the fact that when the

Model was built, the lower limit of calories included was too low (950 calores per person approximately). On the other hand in the original model, the calories primarily came from autoconsumption of corn and purchase of beans, while the other model compels the farmer to a more varied diet which implies higher costs for foodstuffs and incites him to try to keep it lower than the low limits permitted.

IV CONSUMPTION PATTERN

The consumption of foodstuffs has been investigated for the country, however, the economic determinants of those patterns have not yet been analized. Nonetheless, there is information available on average diet patterns per annual income strata for the entire country, as well as for the rural areas in the Southern Region as shown in Table N°2. In this table it is ease to observe that the basis for food and nourishment are beans and corn. The total calories consumed,56%, come from corn, at the lowest income levels, and 28% at the highest.

The consumption of beans is similar at all stratas.

Cuadro Nº 3

MODELO FINCA PEQUEÑA (3 manzanas ó menos)

Resultados de Políticas de Crédito a Diferentes Tasas de Interés.

	0 %	10 %	20 %	50 %	Solución Básica 100 %
s Cultivadas					
z - frijol Primera					
z - sorgo Primera	1.39 mz	1.43	1.43	1.44	1.16
z Primera					1.71
z Postrera					
jol Postrera				1.56	1.84
go Primera "					
z semitecnificado Primera	1.60	1.57	1.57	1.56	
z semitecnificado Postrera	.79	.63	.65		
jol semitecnificado Postrera	.81	.94	.92		
go semitecnificado Postrera					
ducción (qq)					
Maíz	57.89	54.69	55.09	44.25	30.39
Frijol	5.20	6.02	5.92	7.19	8.49
Sorgo	14.63	15.05	15.00	15.09	12.13
tribución Producción					
entas (qq)					
Maíz	48.06	46.77	47.15	36.25	22.35
Frijol	-	-		1.54	3.04
Sorgo	11.27	12.36	12.30	12.37	9.40
o Consumo					
Maíz (qq)	9.89	7.92	7.94	8.00	8.04
Frijol	5.20	6.02	5.92	5.65	5.45
Sorgo	3.36	2.69	2.70	2.72	2.73
dito (Lps)	78.67	75.65	76.02	45.98	
ente (Lps)	376.36	370.44	364.61	349.29	337.70
orías	1,443.25	1,291.58	1,286.69	1,276.91	1,262.23
teínas	48.92	48.92	48.92	48.92	44.03
de Obra (% anual)					
Usada en Finca Familiar	229.21	229.57	229.54	236.63	249.83
Contratada	11.57	11.26	11.30	6.82	.71
Ociosa	83.00	83.00	83.00	83.00	83.00

BEST AVAILABLE

Cuadro Nº 4

MODELO DE FINCA PEQUEÑA

Resultados de Políticas sin Crédito

	Solución Básica	50% reducción precio de Insumos	50% reducción precio de Productos de Consumo
s Cultivadas			
-frijol Primera			
-sorgo Primera	1.16	0.47	1.16
-Primera	1.71		1.71
-Postrera			
ol Postrera	1.84		1.84
o Primera			
semi tecnificado Primera		2.53	.14
semi tecnificado Postrera		2.01	
ol semi tecnificado Postrera		0.52	
o semi tecnificado Primera			
occión (qq)			
	30.39	89.06	30.39
ol	8.49	3.35	8.43
o	12.13	4.95	12.14
ribución Producción			
as (qq)			
	22.35	74.49	30.39
ol	3.04	-	8.48
o	9.40	-	12.14
Consumo			
(qq)	8.04	14.57	-
ol	5.45	3.35	-
o	2.73	4.95	-
ito (Lps)		63.93	4.05
dente (Lps)	337.70	396.14	367.41
ías	1,262.23	1,795.50	1,291.58
inas	44.03	48.92	48.92
de Obra (dh/año)			
a			
en finca			
liar	249.83	255.64	249.83
ratada	.71	18.17	0.71
da	83.00	66.52	83.00

Cuadro Nº 5

MODELO DE FINCA PEQUEÑA

Resultados de Diferentes Políticas con Crédito

a Tasa de Interés de Ø%

BEST AVAILABLE

	Modelo Básico	50% reduc. en precio de los Insumos	50% reduc. Precio de los Productos de Cons.	Incremento en Tierra de Cultivo de 3 a 7 Mzs.
Cultivadas				
Frijol Primera	1.39		0.95	6.30
Sorgo Primera				
Primera				
Postrera				
Postrera				
Primera				
Semi tecnificado Primera	1.60	3.00	2.05	0.70
Semi tecnificado Postrera	.79	2.31	2.05	0.17
Semitecnificado Postrera	.81	.68	-	.53
Semitecnificado Primera				
ción (q q)				
	57.89	99.92	83.94	70.76
	5.20	4.37	-	3.38
	14.63	-	10.02	66.15
(qq)				
	48.06	80.94	83.94	56.05
	-	-	-	-
	11.27	-	10.02	61.15
Consumo (qq)				
	9.89	18.98	-	14.71
	5.20	4.37	-	3.38
	3.36		-	5.00
	78.67	76.14	107.45	33.06
	376.36	449.26	411.89	402.20
	1,443.25	1,819.96	1,330.72	1,815.07
	48.92	53.82	53.82	48.92
de Obra dh/año				
	229.21	265.17	242.38	239.11
	11.57	29.52	22.61	183.44
Mano de Obra	83.00	83.00	83.00	83.00
(qq)				
			10.53	
			6.69	

Sub-región: Relativamente fértiles

Tamaño finca: 50 Mz

Coeficientes de Areas al Riesgo / Políticas / CARACTERISTICAS	0	0.5	1.0	1/ 0	0	0.5	1.0	0	0.5	1.0
	Modelo Base			50% Subsidio Precio de Insumos	50% subsidio Precio Pructos Alimentos			Disponibilidad de Tierra 70 Mz.		
Estructura Productos (Mz)										
Maíz	2.7	2.7	2.5		2.8	2.7	2.5	2.7	2.7	2.5
Arroz	2.4	12.6	47.0	50	2.2	12.6	47.0	2.4	12.6	67.0
Ajonjolí	2.8	2.7	2.9		2.8	2.7	2.9	2.8	2.7	2.9
Algodón	44.9	34.6	-		45.0	34.7	-	64.9	54.6	-
Producción (qq)										
Maíz	68	68	62		70.6	67.8	62.3	68	67.0	62
Arroz	109.3	481	1722	2600	104.2	480.9	1,722.4	109.3	481.1	2,442
Ajonjolí	38.8	38.4	41		39.2	38.0	41.2	38.8	38.4	41.2
Algodón	1,437.8	1,108.6	-		1,440.5	1,109.5	-	2,078.0	1,748.6	-
Sorgo			18				18.2			18.0
Crédito	25,986.9	23,960.0	17,109.7	18099	25,982.9	23,965.50	17,109.7	36,903.7	34,876.9	24,068.7
* Excedente Monetario	7,990.4	7,947.0	7,665.0	20,054.0	8,280.1	8,237.6	7,954.4	11,261.0	11,219.0	10,773.4
Calorías (cal)	1,991.2	1,991.2	1,991.2	1,991.2	1,991.2	1,991.2	1,991.2	1,991.2	1,991.2	1,991.2
Proteínas (gr)	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2
Empleo (dh/año)										
Mano obra familiar	316.4	316.1	319.4	210	249.8	317.1	323.6	318.5	317.9	323.6
Mano Obra contratada	1,916.9	1,780.0	1,388.5	1,885	1,919	1,778.2	1,384.3	2,721.0	2,603.0	1,980.0
Compras										
Maíz (qq)	-	-	-	12.11	12.11	12.11	12.11	-	-	-

* Excedente Moneratio = Ingreso Bruto- Costos de Producción - Gastos en Alimentos

1 / No se registran cambios en la estructura productiva a medida que aumenta el coeficiente de aversión al riesgo

/eme:

CUADRO No.

MODELO FINCA PEQUEÑA (3 Manzanas)

(Incorporando Patrón del Gasto)

Resultados de Políticas de Crédito a diferentes tasas de interés

	0%	10%	20%	30%	50%	70%	100%
Areas Cultivadas (Mzs.)							
Maíz - Frijol Primera							
Maíz - Sorgo Primera	.95	1.27	1.27	1.26	1.44	1.39	1.16
Maíz Primera						.45	1.71
Maíz Postrera							
Frijol Postrera				.42	1.56	1.61	1.84
Sorgo Primera							
Maíz semitecnificado Primera	2.05	1.73	1.73	1.74	1.56	1.15	.14
Maíz semitecnificado Postrera	2.05	1.22	1.22	1.16			
Frijol semitecnificado postrera		.5	.5	.15			
Sorgo semitecnificado Postrera							
Excedentes (Lps.)	565.78	556.51	547.79	539.79	526.83		511.54
Gastos en alimentos	314.12	311.53	309.09	306.78	303.22		299
Excedentes - Gastos Alimentos	251.66	244.98	238.70	232.78	223.6	217.53	212.61
Crédito	107.45	87	87	80	46	34	4
Ventas (qq)							
Maíz	84	66.5	66.5	66.5	44	40	30
Frijol		3	3.2	2.9	7	7	8
Sorgo	10	13	13	13	15	14.6	12
Compras (qq)							
Carne	.6	.6	.59	.58	.58	.58	.57
Vegetales							
Maíz	9.7	9.6	9.6	9.5	9.4	9.3	9.3
Frijol	1.66	1.65	1.64	1.62	1.61	1.59	1.38
Azúcar	1.71	1.69	1.68	1.66	1.65	1.63	1.62
Manteca	0.40	.39	.39	.39	.38	.38	.37
Calorías	1409	1398	1387	1376	1361	1350	1341
Proteínas	27	27	27	27	26	26	26

CUADRO No. 8

MODELO DE FINCA GRANDE (50 Mz)
(Incorporando el Patrón del Gasto)
Resultados de diferentes políticas con crédito

POLITICAS	Modelo Base			Insumos	Alimentos	Tierra		Crédito 1)			
RIESGO	0	0.5	1	No incide	0 1/	0	.5	0.05	0.2	0.3	.5
Estructura Productiva (Mz)											
Maíz de Primera no Tecnific.										2.7	50
Maíz de Primera Tecnificado	0.1					0.1			1.9	47	
Maíz de Primera Semi-Tecnif.	2.7	2.7	2.7		2.7	2.7	2.7		2.7	2.7	
Arroz Semi-Tecnificado	.6	11	29		.6	.6	11	.6	45		
Arroz Tecnificado	1.6	1.7	1.7	36	1.6	1.6	1.7	1.6			
Ajonjolí Tecnificado	2.8	2.7	2.7		2.8	2.8	2.7	2.7	5	50	50
Algodón	31	21	2.4		31	51	41	31			
Caña	14	14	14	14	14	14	14	14			
Ventas (qq)											
Maíz	71	68	68		71	71	68	68	129	1609	900
Arroz	104	481	1140	1872	104	104	481	110	1636		
Ajonjolí	39	38	38		39	39	38	38	64	700	700
Algodón	992	661	76		992	1618	1301	991			
Caña	1104	1104	1104	1104	1104	1104	1104	1104			
Ingresos	24707	22690	19068	15483	24707	35625	33608	24728	16477	8823	4441
Costo Neto	8306	8264	8115	18856	8306	11578	11535	9542	6595	4956	4006
Gasto en alimentos	1300	1296	1283	2249	1300	1594	1591	1411	1146	998	913
Compras (gr./día/											
Maíz	122	122	122	122	122	122	122	122	125	270	122
Frijol	25	25	25	30	24	24	24	26	24	44	24
Arroz	32	31	31	38	31	31	31	32	31	56	31
Carne	154	153	151	288	347	198	197	169	131	75	91
Leche	49	49	48	59	48	48	48	50	48	87	116
Azúcar	58	58	58	70	57	57	57	59	57	103	57
Manteca	12	12	12	15	12	12	12	12	12	21	12
Calorías	1142	1142	1138	1392	1120	1120	1120	1172	1120	2033	1120
Prot. fres	48	47	47	75	83	56	56	51	43	51	38

1/ En términos de estructura productiva se obtienen los mismos resultados que en el modelo base. - El patrón de consumo no varía al cambiar el coeficiente de aversión al riesgo.

2/ A estas tasas de interés, el coeficiente de aversión al riesgo no incide en la estructura productiva.

A N E X O S

MODELO NACIONAL FINCA PEQUEÑA (3 Mz)

COEFICIENTES TECNICOS

PRODUCTO: MAIZ-SORGO
CICLO: I
TECNOLOGIA NO TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero					
Febrero					
Marzo					
Abril			7.10		
Mayo			8.38		
Junio			14.79		
Julio			1.91		
Agosto			7.14		
Septiembre			2.87		
Octubre			.43		
Noviembre			4.13		
Diciembre			8.65		
TOTAL			55.40	1.50	83.10

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.	0.15	8.00	3.20
Semilla M.			
Fertilizante			
Químicos			

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)			
Animal (D-V)			

Rendimiento; 7.60 Maíz, Rendimiento : 10.50 Sorgo qq/Mz
Precio de Mercado : 7.0 Maíz Lps/qq
Precio de Mercado : 10.50 Sorgo Lps/qq
Costo de Producción : 96.01 Lps
Ingreso bruto : 118.0
Rentabilidad : 1.24
% de producción destinado para autoconsumo :
% de producción destinado para ventas :
Otros gastos (Lps) 9.71

FUENTE :

MODELO FINCA PEQUEÑA (3 Mz)
COEFICIENTES TECNICOS

PRODUCTO: MAIZ - FRIJOL
CICLO: I
TECNOLOGIA NO TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero					
Febrero					
Marzo					
Abril					
Mayo			16.20		
Junio			8.9		
Julio			16.20		
Agosto			6.90		
Septiembre			7.10		
Octubre			5.20		
Noviembre			.90		
Diciembre			4.40		
TOTAL			66.1	1.50	99.15

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C. Maíz	0.3	20.00	8.0
Semilla C. Frijol			
Semilla M.			
Fertilizante			
Químicos			

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)			
Animal (D-V)			

Rendimiento; 8.5 Maíz , Rendimiento 3.60 Frijol qq/Mz
Precio de Mercado : 7.00 Maíz Lps/qq
Precio de Mercado :18.30 Frijol Lps/qq
Costo de Producción : 114.90 Lps
Ingreso bruto : 126.1
Rentabilidad 1.1
% de producción destinado para autoconsumo :
% de producción destinado para ventas :
Otros gastos (Lps) 7.75

FUENTE :

MODELO FINCA PEQUEÑA (3 Mz)

COEFICIENTES TECNICOS

PRODUCTO: MAIZ
CICLO: I
TECNOLOGIA : NO TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero					
Febrero					
Marzo			5.89	2.00	
Abril			5.17	2.00	
Mayo			10.22	2.00	
Junio			7.31	2.00	
Julio			2.99	2.00	
Agosto			7.90	2.00	
Septiembre			5.90	2.00	
Octubre					
Noviembre					
Diciembre					
TOTAL			43.35	1.50	65.03

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.	0.20	10.00	2.00
Semilla M.			
Fertilizante			
Químicos			

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)			
Animal (D-V)			

Rendimiento; 10.40 qq/Mz
Precio de Mercado : 7.00 Lps/qq
Precio de garantía :
Costo de Producción : (Lps) 71.83
Ingreso bruto : 72.80
Rentabilidad 1.013
% de producción destinado para autoconsumo :
% de producción destinado para ventas :
Otros gastos (Lps) 4.82

FUENTE :

COEFICIENTES TECNICOS

PRODUCTO: MAIZ
CICLO: II
TECNOLOGIA : NO TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero			7.57	10.00	
Febrero			5.09	10.00	
Marzo					
Abril					
Mayo					
Junio					
Julio					
Agosto					
Septiembre			11.83		
Octubre			8.87		
Noviembre			8.35		
Diciembre			4.18		
TOTAL			42.84	1.50	64.26

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.	0.15	10.0	1.50
Semilla M.			
Fertilizante			
Químicos			

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)			
Animal (D-V)			

Rendimiento: 8.9 qq/Mz
Precio de Mercado :
Precio de garantía : 7.00 Lps/qq
Costo de Producción : (Lps) 69.92
Ingreso bruto : 6.23
Rentabilidad
% de producción destinado para autoconsumo :
% de producción destinado para ventas :

Otros gastos (Lps) 4.16

FUENTE :

MODELO FINCA PEQUEÑA (3 Mz)-

COEFICIENTES TECNICOS

PRODUCTO: SORGO

CICLO: I

TECNOLOGIA : NO TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero					
Febrero					
Marzo			3.60		
Abril			4.30		
Mayo			4.30		
Junio			14.10		
Julio			3.3		
Agosto			4.4		
Septiembre					
Octubre					
Noviembre			2.50		
Diciembre			13.60		
TOTAL			50.1	1.50	75.65

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.	0.15	8.00	1.20
Semilla M.			
Fertilizante			
Químicos			

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)			
Animal (D-V)			

Rendimiento; 11.80 qq/Mz

Precio de Mercado : 6.25 Lps/qq

Precio de garantía :

Costo de Producción : 83.25 Lps

Ingreso bruto : 73.75

Rentabilidad

% de producción destinado para autoconsumo :

% de producción destinado para ventas :

Otros gastos (Lps) .690

FUENTE :

MODELO FINCA PEQUEÑA (Mz)

COEFICIENTES TECNICOS

PRODUCTO: FRIJOL

CICLO: II

TECNOLOGIA : NO TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero			9.30	20.00	
Febrero			2.20	20.00	
Marzo					
Abril					
Mayo					
Junio					
Julio					
Agosto			9.20		
Septiembre			9.20		
Octubre			16.0		
Noviembre			10.60		
Diciembre			10.20		
TOTAL			57.5	1.50	86.25

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.			
Semilla M.			
Fertilizante			
Químicos			

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)			
Animal (D-V)			

Rendimiento: 4.60 qq/60

Precio de Mercado :

Precio de garantía :

Costo de Producción : 18.50 Lps/qq

Ingreso bruto : 85.1

Rentabilidad

% de producción destinado para autoconsumo :

% de producción destinado para ventas :

FUENTE :

MODELO FINCA PEQUEÑA (5 Mz)

COEFICIENTES TECNICOS

PRODUCTO: FRIJOL
CICLO: II
TECNOLOGIA : SEMI-TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero			11.70		
Febrero			2.20		
Marzo					
Abril					
Mayo					
Junio					
Julio					
Agosto			9.20		
Septiembre			9.20		
Octubre			16.0		
Noviembre			11.60		
Diciembre			10.20		
TOTAL			60.9	1.50	91.35

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.	0.5	22.0	11.00
Semilla M.			
Fertilizante	0.2	25.30	5.06
Químicos			

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)			
Animal (D-V)			

Rendimiento: 6.4 qq/Mz
Precio de Mercado : 18.5 , Lps/qq
Precio de garantía :
Costo de Producción : Lps/Mz 119.21
Ingreso bruto : 118.59 Lps/Mz
Rentabilidad
% de producción destinado para autoconsumo :
% de producción destinado para ventas :

Otros gastos Lps 11.80

FUENTE : DPS/MRN " Encuesta de Coeficientes Técnicos y Costos de Producción 1977 "

MODELO FINCA PEQUEÑA (3 Mz)

COEFICIENTES TECNICOS

PRODUCTO: MAIZ

CICLO: II

TECNOLOGIA : SEMI-TECNIFICACO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero			9.62		
Febrero			5.09		
Marzo					
Abril					
Mayo					
Junio					
Julio					
Agosto					
Septiembre			11.83		
Octubre			8.87		
Noviembre			9.35		
Diciembre			4.18		
TOTAL			48.59	1.50	72.89

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.	0.25	16.50	4.13
Semilla M.			
Fertilizante	0.75	25.30	18.99
Químicos			

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)			
Animal (D-V)			

Rendimiento;
Precio de Mercado :
Precio de garantía :
Costo de Producción : Lps/Mz 106.91
Ingreso bruto : 115.99 Lps/Mz
Rentabilidad 1.08
% de producción destinado para autoconsumo :
% de producción destinado para ventas :

Otros gastos Lps 10.91

FUENTE : DPS/MRN " Encuesta de Coeficientes Técnicos y Costos de Producción 1977 ".

MODELO FINCA PEQUEÑA (3 Mz)

COEFICIENTES TECNICOS .

PRODUCTO: SORGO
CICLO: I
TECNOLOGIA : SEMI- TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero					
Febrero					
Marzo			3.60		
Abril			4.30		
Mayo			4.30		
Junio			14.1		
Julio			5.3		
Agosto			4.4		
Septiembre					
Octubre					
Noviembre			2.50		
Diciembre			13.60		
TOTAL			53.5	1.5	80.25

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.	0.25	13.68	3.42
Semilla M.			
Fertilizante	.5	25.30	12.65
Químicos			

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)			
Animal (D-V)			

Rendimiento;
Precio de Mercado :
Precio de garantía :
Costo de Producción : Lps/Mz 106.52
Ingreso bruto : 112.50 Lps/Mz
Rentabilidad 1.06
% de producción destinado para autoconsumo :
% de producción destinado para ventas :
Otros gastos Lps 10.20

FUENTE : DPS/MRN " Encuesta de Coeficientes Técnicos y Costos de Producción 1977 "

MODELO FINCA PEQUEÑA (3 Mz)

COEFICIENTES TECNICOS

PRODUCTO: MAIZ
CICLO: I
TECNOLOGIA : SEMI-TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero					
Febrero					
Marzo			5.89		
Abril			5.17		
Mayo			10.22		
Junio			8.31		
Julio			2.99		
Agosto			9.87		
Septiembre			4.90		
Octubre					
Noviembre					
Diciembre					
TOTAL			47.35	1.50	71.03

Insumos	Cantidad	Lps/Mz Precio	Lps./Mz. Valor
Semilla C.	0.25	16.50	4.13
Semilla M.			
Fertilizante	1	25.30	25.30
Químicos			

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)			
Animal (D-V)			

Rendimiento; 20.5 qq/Mz
Precio de Mercado : 7.0 Lps/qq
Precio de garantía :
Costo de Producción : Lps/Mz 111.03
Ingreso bruto : 143.30/Lps/Mz
Rentabilidad : 1.29
% de producción destinado para autoconsumo :
% de producción destinado para ventas :

Otros gastos (Lps) 10.57

FUENTE : DPS/MRN " Encuesta de Coeficientes Técnicos y Costos de Producción 1977 "

MODELO FINCA GRANDE (50 Mz)

COEFICIENTES TECNICOS

PRODUCTO: CAÑA

CICLO:

TECNOLOGIA TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero		43.0			
Febrero		4.0			
Marzo		7.6			
Abril					
Mayo					
Junio		6.67			
Julio		2.33			
Agosto		7.05			
Septiembre		2.53			
Octubre					
Noviembre					
Diciembre					
TOTAL					

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.			
Semilla M.	3.67	22.0	80.74
Fertilizante	4.0	25.30	101.20
Químicos			28.73
			210.57

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)	1.17	10.0	11.70
Animal (D-V)			

Rendimiento; 78.83 T.M/Mz

Precio de Mercado : Lps/TM 14 .30

Precio de garantía :

Costo de Producción : Lps 610.29

Ingreso bruto : Lps 1127.26

Rentabilidad 1.8471

% de producción destinado para autoconsumo :

% de producción destinado para ventas :

Otros gastos Lps . 241.66

FUENTE : DPS/MRN " Encuesta de Coeficientes Técnicos y Costos de Producción 1977 "

MODELO FINCA GRANDE (50 Mz)

. COEFICIENTES TECNICOS

PRODUCTO: ALGODON
CICLO:
TECNOLOGIA TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero					
Febrero					
Marzo					
Abril		1.57			
Mayo					
Junio		1.06			
Julio		2.38			
Agosto		0.99			
Septiembre		2.39			
Octubre					
Noviembre		1.28			
Diciembre		31.36			
TOTAL		41.23	41.23	2.00	82.46

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.			
Semilla M.	0.46	35.0	16.1
Fertilizante	3.0	25.30	75.9
Químicos			246.56
			338.56

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)	6.21	10.0	62.10
Animal (D-V)	1.07	4.0	4.28

Rendimiento; 32 qq/Mz
Precio de Mercado : 29.50 Lps/qq
Precio de garantía :
Costo de Producción : Lps 575.27
Ingreso bruto : Lps 944.00
Rentabilidad 1.6409
% de producción destinado para autoconsumo :
% de producción destinado para ventas :

Otros gastos L 87.87

FUENTE : DPS/MRN . Encuesta de Coeficientes Técnicos y Costos de Producción 1977 "

MODELO FINCA GRANDE (50 Mz)

COEFICIENTES TECNICOS

PRODUCTO: AJONJOLI
CICLO:
TECNOLOGIA TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero	11.6				
Febrero	6.6				
Marzo					
Abril					
Mayo					
Junio					
Julio					
Agosto					
Septiembre					
Octubre	8.8				
Noviembre	13.0				
Diciembre	12.8				
TOTAL	52.8		52.8	2,00	105.6

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.			
Semilla M.	0.05	80.0	4.00
Fertilizante	2.0	25.30	50.6
Químicos			5.12
			59.72

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)	2.50	10.0	25.0
Animal (D-V)	3.0	4.0	12.0

Rendimiento; 14 qq/Mz
Precio de Mercado : Lps/qq 22.75
Precio de garantía :
Costo de Producción :Lps 210.69
Ingreso bruto : 318.5
Rentabilidad 1.5117
% de producción destinado para autoconsumo :
% de producción destinado para ventas :

Otros gastos L 8.37

FUENTE : DPS/MRN " Encuesta de Coeficientes Técnicos y Costos de Producción 1977 "

MODELO FINCA GRANDE (50 Mz)
COEFICIENTES TECNICOS

PRODUCTO: AJONJOLI
CICLO:
TECNOLOGIA SEMI-TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero					
Febrero					
Marzo					
Abril					
Mayo					
Junio					
Julio	6.0				
Agosto	12.6				
Septiembre	9.7				
Octubre					
Noviembre	8.2				
Diciembre	5.40				
TOTAL	41.9		41.9	2.0	83.8

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.			
Semilla M.	0.06	80.0	4.80
Fertilizante	2.0	25.30	50.60
Químicos			7.50
			62.90

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)	2.5	10.0	25.00
Animal (D-V)	3.0	4.0	12.00

Rendimiento; 13 qq/Mz
Precio de Mercado : 22.75 Lps/qq
Precio de garantía :
Costo de Producción : Lps 181.07
Ingreso bruto : 295.75
Rentabilidad 1.6333
% de producción destinado para autoconsumo :
% de producción destinado para ventas :

Otros gastos Lps 8.37

FUENTE : DPS/MRN "Encuesta de Coeficientes Técnicos y Costos de Producción 1977 "

MODELO FINCA GRANDE (50 Mz)
COEFICIENTES TECNICOS

PRODUCTO: ARROZ
CICLO: II
TECNOLOGIA TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero					
Febrero					
Marzo					
Abril					
Mayo					
Junio					
Julio					
Agosto	21.6				
Septiembre	10.0				
Octubre	3.0				
Noviembre	3.1				
Diciembre	3.0				
TOTAL	40.7		40.7	2.00	81.40

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.			
Semilla M.	2.7	42.0	113.40
Fertilizante	9.5	25.30	240.35
Químicos			134.64
			488.39

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)	5.0	10.0	50.00
Animal (D-V)			

Rendimiento; 52 qq/Mz
Precio de Mercado : 23.25 Lps/qq
Precio de garantía :
Costo de Producción : Lps 814.54
Ingreso bruto : Lps 1209.00
Rentabilidad 1.4842
% de producción destinado para autoconsumo :
% de producción destinado para ventas :

Otros gastos - Lps 194.75

FUENTE : DPS/MRN " Encuesta de Coeficientes Técnicos y Costos de Producción 1977 "

MODELO FINCA GRANDE (50 Mz)

PRODUCTO: ARROZ
CICLO: I
TECNOLOGIA SEMI-TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero					
Febrero					
Marzo					
Abril					
Mayo					
Junio	11.6				
Julio	2.0				
Agosto	15.20				
Septiembre					
Octubre	11.0				
Noviembre					
Diciembre					
TOTAL	29.8		29.80	2.0	59.6

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.			
Semilla M.	2.0	42.0	84.0
Fertilizante	4.0	25.30	101.20
Químicos			137.75
			322.95

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)	2.50	10.0	25.0
Animal (D-V)			

Rendimiento; 36 qq/Mz
Precio de Mercado : 23.25 Lps/qq
Precio de garantía :
Costo de Producción : Lps 527.17
Ingreso bruto : Lps 837.0
Rentabilidad 1.5877
% de producción destinado para autoconsumo :
% de producción destinado para ventas :
Otros gastos Lps. 119.62

FUENTE : DPS/MRN " Encuesta de Coeficientes Técnicos y Costos de Producción 1977 "

COEFICIENTES TECNICOS

PRODUCTO: MAIZ
CICLO: I
TECNOLOGIA NO TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero					
Febrero					
Marzo					
Abril			11.06		
Mayo			10.22		
Junio			7.31		
Julio			2.99		
Agosto			7.90		
Septiembre			5.90		
Octubre					
Noviembre					
Diciembre					
TOTAL			45.38	2.00	90.76

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.	0.25	10.0	2.5
Semilla M.			
Fertilizante			
Químicos			4.10

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)			
Animal (D-V)			

Rendimiento; 18 qq/Mz
Precio de Mercado : Lps/qq 7.00
Precio de garantía :
Costo de Producción : Lps/Mz 105.73
Ingreso bruto : Lps 126.00
Rentabilidad 1.19
% de producción destinado para autoconsumo :
% de producción destinado para ventas :
Otros gastos 8.37

FUENTE : DPS/MRN "Encuesta de Coeficientes Técnicos y Costos de Producción 1977 "

MODELO FINCA GRANDE (50 Mz)

COEFICIENTES TECNICOS

PRODUCTO: MAIZ
CICLO: I
TECNOLOGIA TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero					
Febrero					
Marzo					
Abril					
Mayo	3.0				
Junio	6.0				
Julio	1.0				
Agosto	9.2				
Septiembre	9.0				
Octubre					
Noviembre					
Diciembre					
TOTAL	28.2		28.2	2.00	56.40

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.			
Semilla M.	0.32	16.50	5.28
Fertilizante	2.0	25.30	50.60
Químicos			18.38
			74.26

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)	2.25	10.0	22.50
Animal (D-V)	2	4.0	8.00

Rendimiento; 33 qq/Mz
Precio de Mercado : 7.10 Lps/qq
Precio de garantía :
Costo de Producción : Lps/Mz 174.78
Ingreso bruto : Lps/Mz 231.00
Rentabilidad 1.32
% de producción destinado para autoconsumo :
% de producción destinado para ventas :
Otros gastos Lps 13.62

FUENTE : DPS/MRN " Encuesta de Coeficientes Técnicos y Costos de Producción 1977 "

MODELO FINCA GRANDE (50 Mz)

COEFICIENTES TECNICOS

PRODUCTO: MAIZ
CICLO: I
TECNOLOGIA SEMI-TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero					
Febrero					
Marzo					
Abril	11.06				
Mayo	10.22				
Junio	8.31				
Julio	2.99				
Agosto	9.87				
Septiembre	4.90				
Octubre					
Noviembre					
Diciembre					
TOTAL					

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.			
Semilla M.	0.25	16.50	
Fertilizante	1.0	25.30	
Químicos			8.25

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)			
Animal (D-V)			

Rendimiento; 25 qq/Mz
Precio de Mercado : 7.0 Lps/qq
Precio de garantía :
Costo de Producción :
Ingreso bruto :
Rentabilidad
% de producción destinado para autoconsumo :
% de producción destinado para ventas :
Otros gastos 10.62

FUENTE : DPS/MRN " Encuesta de Coeficientes Técnicos y Costos de Producción 1977 "

MODELO FINCA GRANDE (50 Mz)

COEFICIENTES TECNICOS

PRODUCTO: MAIZ-SORGO
CICLO: I
TECNOLOGIA : NO TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero					
Febrero					
Marzo					
Abril	7.10				
Mayo	8.38				
Junio	14.79				
Julio	1.91				
Agosto	7.14				
Septiembre	2.87				
Octubre	0.43				
Noviembre	4.13				
Diciembre	10.65				
TOTAL	57.42		57.40	2.00	114.8

Insumos		Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.	Maíz	0.2	10.0	2.0
	Sorgo	0.15	8.0	1.2
Semilla M.				
Fertilizante		1.5	25.30	37.95
Químicos				
TOTAL				41.15

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)			
Animal (D-V)			

Rendimiento; Maíz = 13 qq/Mz Sorgo = 16 qq/Mz
Precio de Mercado : Sorgo - 6.25 Maíz - 7.00 Lps/qq
Costo de Producción : 165.66 Lps/Mz
Ingreso bruto : Lps/Mz 191.00
Rentabilidad 1.15
% de producción destinado para autoconsumo :
% de producción destinado para ventas :
Otros gastos Lps. 9.71

FUENTE : DPS/MRN "Encuesta de Coeficientes Técnicos y Costos de Producción 1977 "

COEFICIENTES TECNICOS

PRODUCTO: SORGO
CICLO: I
TECNOLOGIA : TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero					
Febrero					
Marzo					
Abril	5.4				
Mayo	10.0				
Junio	2.0				
Julio	2.0				
Agosto	9.0				
Septiembre					
Octubre					
Noviembre					
Diciembre					
TOTAL	28.4		28.4	2.00	56 .8

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.			
Semilla M.	0.31	13.68	4.24
Fertilizante	2.0	25.30	50.60
Químicos			20.48
			75.32

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)	4.50	10.0	45.00
Animal (D-V)	1.0	4.0	4.0

Rendimiento; 40 qq/Mz
Precio de Mercado : 6.25 Lps./qq
Precio de garantía :
Costo de Producción : L 196.99
Ingreso bruto : Lps 250.00
Rentabilidad 1.269
% de producción destinado para autoconsumo :
% de producción destinado para ventas :
Otros gastos Lps 15.87

FUENTE : DPS/MRN "Encuesta de Coeficientes Técnicos y Costos de Producción 1977 "

PRODUCTO: SORGO
CICLO: I
TECNOLOGIA : SEMI TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero					
Febrero					
Marzo					
Abril	5.40				
Mayo	10.0				
Junio	2.0				
Julio	2.0				
Agosto					
Septiembre					
Octubre	20.0				
Noviembre	8.0				
Diciembre					
TOTAL	47.4		47.4	2.00	94.80

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.			
Semilla M.	0.25	13.68	3.42
Fertilizante	1.0	25.30	25.30
Químicos			9.68
			38.40

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)			
Animal (D-V)	8.0	4.0	32.0

Rendimiento; 30 qq/Mz
Precio de Mercado : 6.25 Lps/qq
Precio de garantía :
Costo de Producción : Lps 177.32
Ingreso bruto : Lps 187.50
Rentabilidad : 1.057
% de producción destinado para autoconsumo :
% de producción destinado para ventas :

Otros gastos: Lps 12.12

FUENTE : DPS/MRN "Encuesta de Coeficientes Técnicos y Costos de Producción 1977 "

MODELO FINCA GRANDE (50 Mz.)

COEFICIENTES TECNICOS

PRODUCTO: SORGO
CICLO: I
TECNOLOGIA: NO TECNIFICADO

REGION : SUR

Mes	Cantidad (dh/Mz) Familiar	Contratada	Total	Precio	Valor
Enero					
Febrero					
Marzo					
Abril					
Mayo	9.0				
Junio	3.40				
Julio	2.2				
Agosto	7.2				
Septiembre	2.2				
Octubre					
Noviembre					
Diciembre	7.20				
TOTAL	31.2			2.00	62.40

Insumos	Cantidad	Lps/qq Precio	Lps./Mz. Valor
Semilla C.	0.22	8.0	1.76
Semilla M.			
Fertilizante			
Químicos			6.24
TOTAL			8.00

TRACCION

Tracción	Cantidad	Lps./H Precio	Lps./Mz Valor
Mecánica (H-T)			
Animal (D-V)			

Rendimiento; 15 qq /Mz
Precio de Mercado : 6.25 Lps/qq
Precio de garantía :
Costo de Producción : Lps/Mz 80.27
Ingreso bruto : 107 Lps/Mz
Rentabilidad 1.31
% de producción destinado para autoconsumo :
% de producción destinado para ventas :

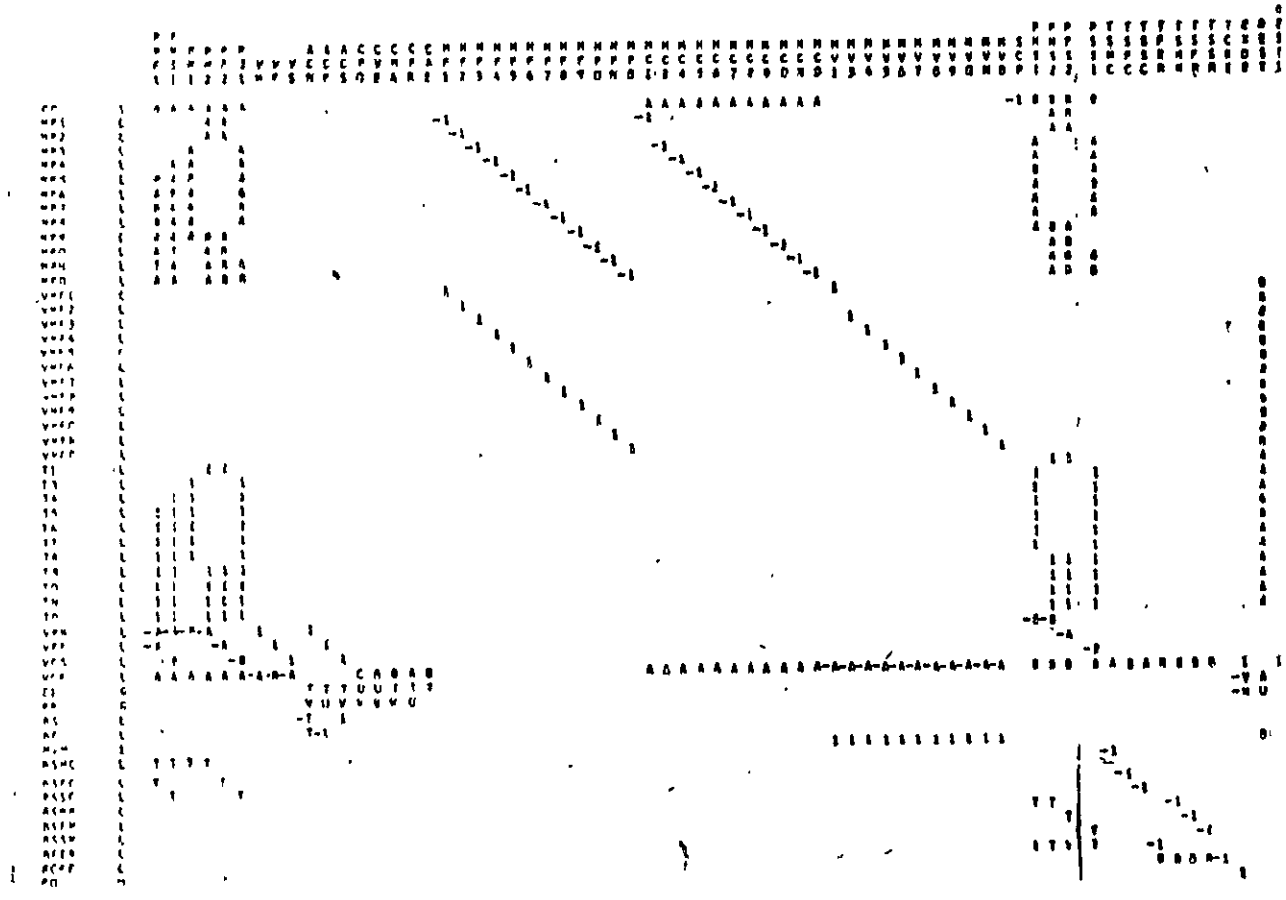
Otros gastos Lps. 9.87

FUENTE : DPS/MRN "Encuesta de Coeficientes Técnicos y Costos de Producción 1977 "

A N E X O Nº 2

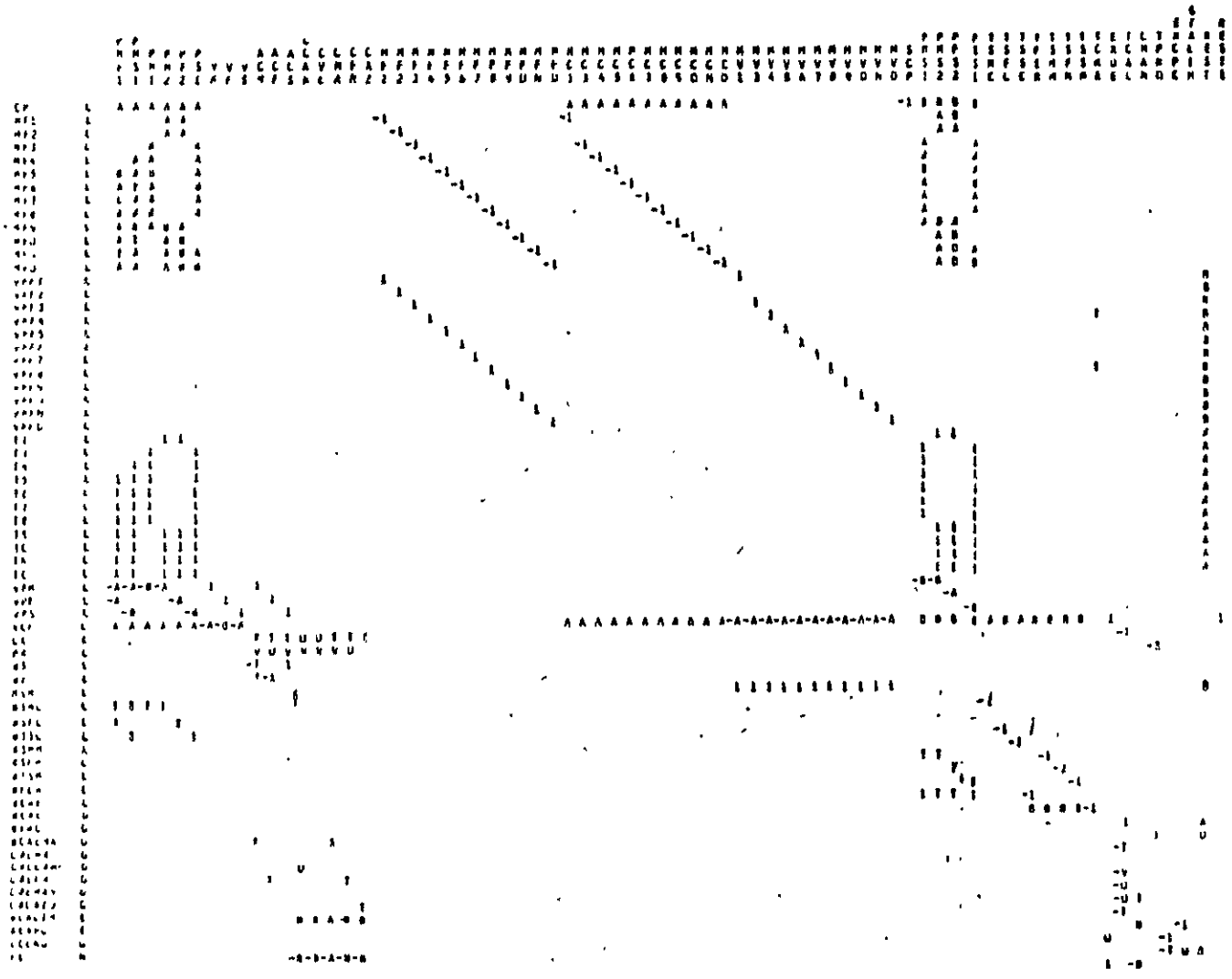
MATRIZ MODELO FINCA PEQUEÑA

(3 M z)



A N E X O Nº 2

MATRIZ MODELO FINCA PEQUEÑA
Incorporando Ecuación de Engel
(3 M z)



ANNEX N° 2

MATRIX DESCRIPTION

(Small Farm)

LINES

CP Accounting of Production Cost with exception of variables.

$MP_{.}^{AI}$ Balance of total labor used for production activities.

Al = Monthly Code

Al = 1, 2 --- 9, 0, N. D

$VMF_{.}^{Al}$ Monthly balance of family labor

Al = Monthly Code

Al = 1, 2, --- 9, 0, N, D

$T_{.}^{Al}$ Monthly balance of the use of land

Al = Monthly Code

A = 1, 2, --- 9, 0, N, D

VP^{Al} Production Balance

Al = Product Code

M = Corn (Maiz)

F = Beans (Frijol)

S = Sorghum (Sorgo)

VCF = Accounting for net income less foodstuffs costs

CL = Calorie relation - intake

A1 = Product Code

PO = Poultry

VE = Vegetables

MA = Lard (manteca)

FR = Beans

AZ = Sugar (azucar)

MF. A1 = Monthly amount of family labor used

A1 = Monthly Code

A1 = 1, 2, --- 9, 0, N, D

MC. A1 = Monthly amount of hired labor

A1 - Monthly Code

SCP = Total amount of other costs incurred by the producer (handling of production)

TS. A1 A2 . Total of seed used

A1 = Product Code

A2 = Type of seed Code

A2 = M = improved (mejorada)

C = indigenous

TFER = Total of fertilizers used

TCRE = Total of credit used

EXDE = Cash surplus obtained

REST = Right side of each equation

LINES

$P._{A1}^{A2}$ Area dedicated to the planting of each crop according to cycle and using traditional technology

A1 = Product Code

A2 = Cycle Code

A1 = MF = Corn - Beans

MS = Corn - Sorghum

M = Corn

S = Sorghum

F = Beans

1 = First

A2 = 2 = Second

$P._{A1}^{A2}$ S. Area dedicated to the planting of each crop according to cycle and using semi-technified technology

A1 = Product Code

A2 = Cycle Code

$V._{A1}$ = Total amount of sold production

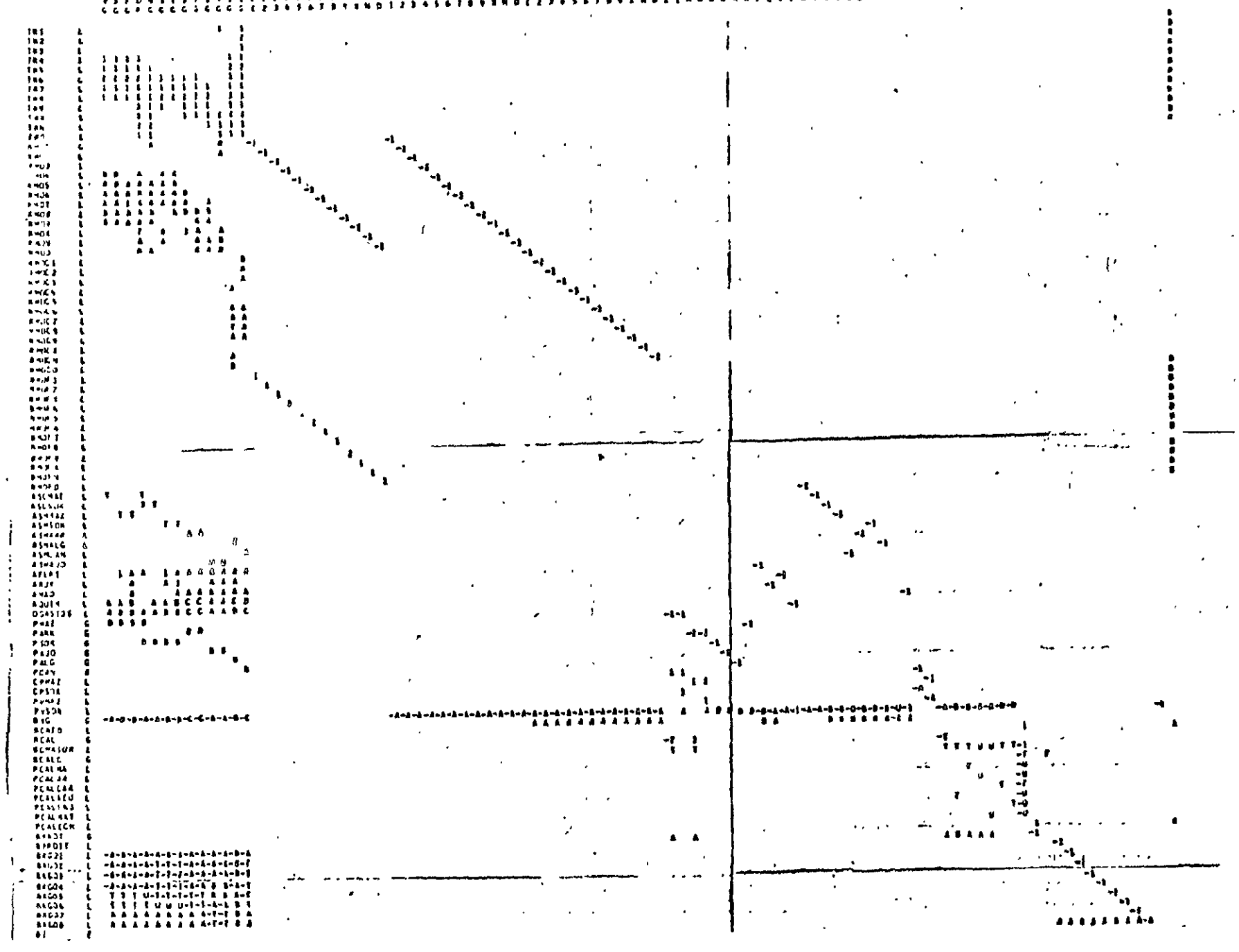
A1 = Product Code

$AC._{A1}$ = Total of production destined for auto-consumption

A1 = Product Code

$C._{A1}$ = Quantity of other foodstuffs used

PR	Protein relation - intake
BS	Proportional Balance of corn and sorghum consumption
BF	Proporcional Balance of corn and beans consumption
VMV	Balance of hired-out family labor
BSMA	Acounting of indigenous seed used - corn -
BSFC	Accounting of indigenous seed used - beans -
BSSC	Accounting of indigenous seed used - sorghum -
$BS._{M}^{A1}$	Accounting, by product, of improved seed used
A1	Product Code
A1 = M	= Corn
F	= Beans
S	= Sorghum
BFER	Accounting of total of fertilizers used
BCRE	Accounting of total credit used
FO	Function objective: to maximize the cash surplus, defined as gross income less production and foodstuffs costs.

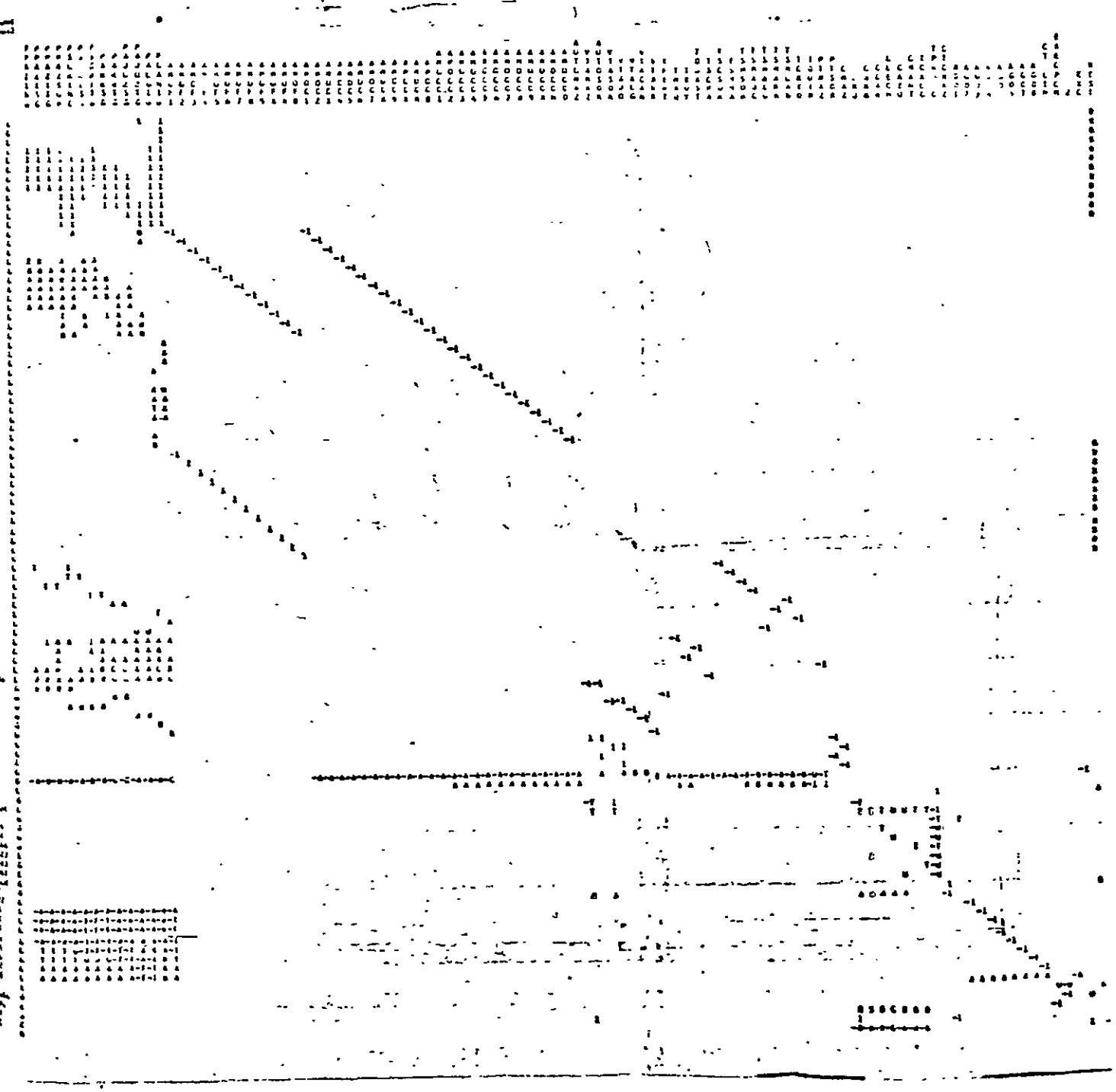


A N E X O Nª 3

MATRIZ MODELO FINCA GRANDE

Incorporando Ecuación de Engel

(50. M z)



ANNEX N° 3

MATRIX DESCRIPTION
(Large Farm)

Lines

A1 Monthly Balance of use of land
TR.

A1 = Monthly Code

A1 = 1, 2, --- 9, 0, N, D

A1 Monthly accounting of labor used
RMO.

A1 = Monthly Code

A1
RMOC. Monthly accounting of hired labor used for commercial crops.

A1 = Monthly Code

A1 Monthly balance of family labor used
RMOF.

A1 = Monthly Code

A1 A2
AS. . Balance of seed used according to type of product

A1 = Type of seed code

A2 = Product code

C = Criolla - Indigenous -

A1 = M Improved

MAZ = corn

SOR = sorghum

A2 =

ARR = rice (arroz)

ALG = cotton (algodon)

AJO = sesame seed (ajonjolí)

CAN = sugar cane (caña)

AFER Accounting of fertilizer used, measured in quintals

ABUY Accounting of animal labor used measured in days/animal

AMAQ Accounting of mechanical traction used measured in hours/tractor

AQUIM Accounting of chemicals used. Measure unit: amount in lempiras

A1
P. Production balance by product

A1 = Product Code

OGASTOS Accounting of the production costs. Measure unit: amount in lempiras

A1
CP. Accounting of the production distribution between autoconsumption and sale

A1 Product Code

A1
PV. Balance of the prorortion of production destined to sale

BYG Income and expenditures balance, including foodstuff costs

BCRED Balance of total credit used

BCAL Balance of calories

BPROT Balance of proteins

BCALC Total accounting of calorie intake

BCMASOR Total balance of corn and sorghum consumption

BPROTT Total accounting of protein intake

A1 PCAL. Balance of the proportion of total calories by product

A1 = Product Code

A1 = MA = corn

AR = rice

AZU = sugar

FRJ = beans

MAR = lard

CAR = meat (carne)

LECH = milk (leche)

A1 BRGO. = Annual balance of wheat

A1 = Annual code

BZ = Accounting of mean deviations.

FO = Function objective = to maximize the cash surplus defined as gross income less production and food-stuffs costs.

COLUMNS

A1 A2 A3
P . . . Cultivated area by product, measured in manzanas

A1 = Product Code

A2 = Cycle Code

A3 = Code by type of technology

A1 = MAZ = corn

SOR = sorghum

MAZSOR corn and sorghum combined

ARR = rice

AJO = sesame seed

ALG = cotton

CAN = sugar cane

A2 = First 1

= Second 2

A3 = N = non-technified

S = semi-technified

T = technified

A1
AMDF. Monthly family labor used measured in man/days

A1 Monthly Code

A1
AMDC. Monthly hired labor for traditional crops measured in man/days

A1 Monthly Code

$AUTO.^{A1}$ Amount for auto-consumption, measured in quintals

A1 = Product Code

$VTA.^{A1}$ Amount of production sold

A1 = Product code

TFERT = Amount of fertilizers used, measured in qq

TMAQ = Total amount of mechanical traction used, measured in tractor/hours

TBUY = Amount of animal labor used, measured in animal/days

TOGAST Total of other costs incurred in the production process, measure unit, lempiras.

$TSC.^{A1}$ = Total of indigenous seed used, mesured in qq

A1 = Product Code

$TSM.^{A1}$ = Total of improved seed used, measured in qq

TCRED Total credit used in the production process, measure unit, lempiras

TQUIM = Total chemicals used, measure unit, lempiras

$PT.^{A1}$ = Total production obtained

A1 = Product Code

$C.^{A1}$ = Purchases of foodstuffs, measured in qq

TCALC = Total intake of calories per family per year, measured in millions of calories

TPROTC Total intake of proteins per family per year, measured in thousand of grains of protein.

CTCMAZ Total intake of corn, measured in qq

A1 RGO. Annual accounting of income deviations, regarding the mean.

CTALIM Total foodstuffs cost

z Accounting of standard deviation of income

EXC Annual surplus obtained, defined as the gross income less production and foodstuffs costs.

MODELO FINCA PEQUEÑA

Datos Básicos

JLUMNS

PMF1	CP	7.75000	MP5	16.50000
PMF1	MP6	8.90000	MP7	16.20000
PMF1	MP8	6.90000	MP9	7.10000
PMF1	MPO	5.20000	MPN	.90000
PMF1	MPD	4.40000	T5	1.00000
PMF1	T6	1.00000	T7	1.00000
PMF1	T8	1.00000	T9	1.00000
PMF1	TO	1.00000	TN	1.00000
PMF1	TO	1.00000	VPM	- 7.60000
PMF1	VPF	- 3.60000	VCF	7.75000
PMF1	BSMC	.20000	BSFC	.35000
PMS1	CP	9.71000	MP4	7.10000
PMS1	MP5	8.38000	MP6	14.79000
PMS1	MP7	1.91000	MP8	7.14000
PMS1	MP9	2.87000	MPO	.43000
PMS1	MPN	4.13000	MPD	8.65000
PMS1	T4	1.00000	T5	1.00000
PMS1	T6	1.00000	T7	1.00000
PMS1	T8	1.00000	T9	1.00000
PMS1	TO	1.00000	TN	1.00000
PMS1	TD	1.00000	VPM	- 8.50000
PMS1	VPS	- 10.50000	VCF	9.71000
PMS1	BSMC	.20000	BSSC	.15000
PM1	CP	5.32000	MP3	5.89000
PM1	MP4	5.17000	MP5	10.22000
PM1	MP6	7.31000	MP7	2.99000
PM1	MP8	7.87000	MP9	3.90000
PM1	T3	1.00000	T4	1.00000
PM1	T5	1.00000	T6	1.00000
PM1	T7	1.00000	T8	1.00000
PM1	VPM	- 10.40000	VCF	5.32000
PM1	BSMC	.20000		
PM2	CP	5.66000	MP1	7.52000
PM2	MP2	5.0[illegible]000	MP9	11.83000
PM2	MPO	8.87000	MPN	8.35000
PM2	MPD	4.18000	T1	1.00000
PM2	T9	1.00000	TO	1.00000
PM2	TN	1.00000	TD	1.00000
PM2	VPM	- 7.70000	VCF	5.66000
PM2	BSMC	.20000		
PF2	CP	4.00000	MP1	9.30000
PF2	MP2	2.20000	MP9	9.20000
PF2	MPO	16.00000	MPN	10.60000
PF2	MPD	10.20000	T1	1.00000
PF2	T9	1.00000	TO	1.00000
PF2	TN	1.00000	TD	1.00000
PF2	VPF	- 4.00000	VCF	4.90000
PF2	BSFC	.30000		

PS1	CP		6.90000	MP3		3.60000
PS1	MP4		4.30000	MP5		4.30000
PS1	MP6		14.10000	MP7		3.30000
PS1	MP8		4.40000	MPN		2.50000
PS1	MPD		13.60000	T3		1.00000
PS1	T4		1.00000	T5		1.00000
PS1	T6		1.00000	T7		1.00000
PS1	T8		1.00000	T9		1.00000
PS1	TD		1.00000	TN		1.00000
PS1	TD		1.00000	VPS	-	11.80000
PS1	VCF		6.90000	BSSC		.15000
VM	VPM		1.00000	VCF	-	7.00000
VF	VPF		1.00000	VCF	-	18.50000
VS	VPS		1.00000	VCF	-	6.25000
ACM	VPM		1.00000	CL		.16050
ACM	PR		.00350	BS	-	.34000
ACM	BF		.23000	BCALMA		.16000
ACF	VPF		1.00000	CL		.15430
ACF	PR		.01020	BF	-	1.00000
ACF	CALFR		.15400			
ACS	VPS		1.00000	CL		.16560
ACS	PR		.00351	BS		1.00000
CCAR	CL		.04300	PR		.00840
CCAR	CALCAR		.04300	BGALIM		150.00000
CCAR	FO	-	150.00000			
CVE	CL		.09000	PR		.00600
CVE	BGALIM		25.00000	FO	-	25.00000
CMA	CL		.16050	PR		.00350
CMA	BCALMA		.16000	BGALIM		11.00000
CMA	FO	-	11.00000			
CFR	CL		.15430	PR		.01020
CFR	CALFR		.15400	BGALIM		28.70000
CFR	FO	-	28.70000			
CAZ	CL		.17280	CALAZU		.17400
CAZ	BGALIM		30.00000	FO	-	30.00000
MF1	MP1	-	1.00000	VMF1		1.00000
MF2	MP2	-	1.00000	VMF2		1.00000
MF3	MP3	-	1.00000	VMF3		1.00000
MF4	MP4	-	1.00000	VMF4		1.00000
MF5	MP5	-	1.00000	VMF5		1.00000
MF6	MP6	-	1.00000	VMF6		1.00000
MF7	MP7	-	1.00000	VMF7		1.00000
MF8	MP8	-	1.00000	VMF8		1.00000
MF9	MP9	-	1.00000	VMF9		1.00000
MFD	MPD	-	1.00000	VMFD		1.00000
MFN	MPN	-	1.00000	VMFN		1.00000
MFD	MPD	-	1.00000	VMFD		1.00000
MC1	CP		2.00000	MP1	-	1.00000
MC1	VCF		2.00000			
MC3	CP		2.00000	MP3	-	1.00000
MC3	VCF		2.00000			
MC4	CP		2.00000	MP4	-	1.00000
MC4	VCF		2.00000			
MC5	CP		2.00000	MP5	-	1.00000
MC5	VCF		2.00000			
MC6	CP		2.00000	MP6	-	1.00000
MC6	VCF		2.00000			
MC7	CP		2.00000	MP7	-	1.00000

MC7	VCF	2.00000			
MC8	CP	2.00000	MP8	-	1.00000
MC8	VCF	2.00000			
MC9	CP	2.00000	MP9	-	1.00000
MC9	VCF	2.00000			
MCO	CP	2.00000	MPO	-	1.00000
MCO	VCF	2.00000			
MCN	CP	2.00000	MPN	-	1.00000
MCN	VCF	2.00000			
MCD	CP	2.00000	MPD	-	1.00000
MCD	VCF	2.00000			
MV1	VMF1	1.00000	VCF	-	1.50000
MV1	MVM	1.00000			
MV3	VMF3	1.00000	VCF	-	1.50000
MV3	MVM	1.00000			
MV4	VMF4	1.00000	VCF	-	1.50000
MV4	MVM	1.00000			
MV5	VMF5	1.00000	VCF	-	1.50000
MV5	MVM	1.00000			
MV6	VMF6	1.00000	VCF	-	1.50000
MV6	MVM	1.00000			
MV7	VMF7	1.00000	VCF	-	1.50000
MV7	MVM	1.00000			
MV8	VMF8	1.00000	VCF	-	1.50000
MV8	MVM	1.00000			
MV9	VMF9	1.00000	VCF	-	1.50000
MV9	MVM	1.00000			
MVO	VMFO	1.00000	VCF	-	1.50000
MVO	MVM	1.00000			
MVN	VMFN	1.00000	VCF	-	1.50000
MVN	MVM	1.00000			
MVD	VMFD	1.00000	VCF	-	1.50000
MVD	MVM	1.00000			
SCP	CP	- 1.00000			
PMSI	CP	10.57000	MP3		5.89000
PMSI	MP4	5.17000	MP5		10.22000
PMSI	MP6	8.31000	MP7		2.99000
PMSI	MP8	9.87000	MP9		4.90000
PMSI	T3	- 1.00000	T4		1.00000
PMSI	T5	1.00000	T6		1.00000
PMSI	T7	1.00000	T8		1.00000
PMSI	VPM	- 20.50000	VCF		10.57000
PMSI	BSMM	.25000	BFER		1.00000
PMS2	CP	10.91000	MP1		9.62000
PMS2	MP2	5.09000	MP9		10.83000
PMS2	MPC	8.87000	MPN		9.35000
PMS2	MPD	4.18000	T1		1.00000
PMS2	T9	1.00000	TO		1.00000
PMS2	TN	1.00000	TD		1.00000
PMS2	VPM	- 16.57000	VCF		10.91000
PMS2	BSMM	.25000	BFER		.75000
PFS2	CP	11.80000	MP1		11.70000
PFS2	MP2	2.20000	MP9		9.20000
PFS2	MPC	16.00000	MPN		11.60000
PFS2	MPD	10.20000	T1		1.00000
PFS2	T9	1.00000	TO		1.00000
PFS2	TN	1.00000	TD		1.00000
PFS2	VPF	- 6.41000	VCF		11.80000

```
PFS2      BSFM        .50000   BFER        .20000
PSS1      CP        10.20000   MP3        3.60000
PSS1      MP4        4.30000   MP5        4.30000
PSS1      MP6       14.10000   MP7        5.30000
PSS1      MP8        4.40000   MPN        2.50000
PSS1      MPD       15.00000   T3         1.00000
PSS1      T4         1.00000   T5         1.00000
PSS1      T6         1.00000   T7         1.00000
PSS1      T8         1.00000   T9         1.00000
PSS1      TD         1.00000   TN         1.00000
PSS1      TD         1.00000   VPS     -     18.00000
PSS1      VCF       10.20000   BSSM        .25000
PSS1      BFER        .50000
TSMC      VCF       10.00000   BSMC    -    1.00000
TSFC      VCF       20.00000   BSFC    -    1.00000
TSSC      VCF        8.00000   BSSC    -    1.00000
TFER      VCF       25.30000   BFER    -    1.00000
TFER      BCRE      25.30000
TSMM      VCF       16.50000   BSMM    -    1.00000
TSMM      BCRE      16.50000
TSFM      VCF       22.00000   BSFM    -    1.00000
TSFM      BCRE      22.00000
TSSM      VCF       13.68000   BSSM    -    1.00000
TSSM      BCRE      13.68000
TCRE      VMF4        .15000   VMF8        .15000
TCRE      BCRE    -  1.00000
EXDE      VCF        1.00000   BEXPC       .01490
EXDE      FD         1.00000
TCAL      CL      -  1.00000   BCAL       1.00000
TCAL      BCALMA  -   .54000   CALCAR  -   .00900
TCAL      CALFR   -   .08900   CALMAN  -   .05500
TCAL      CALAZU  -   .10300
CMAN      CALMAN      .40100
TPRJ      PR      -  1.00000   BPRC       1.00000
EXCPC     BEXPC   -  1.00000   ECENG   -   .28000
GTALIM    BGALIM  -  1.00000   ECENG       .01490
$S
REST      VMF1       30.00000   VMF2      30.00000
REST      VMF3       30.00000   VMF4      30.00000
REST      VMF5       30.00000   VMF6      30.00000
REST      VMF7       30.00000   VMF8      30.00000
REST      VMF9       30.00000   VMFJ      30.00000
REST      VMFN       30.00000   VMFD      30.00000
REST      T1          3.00000   T3         3.00000
REST      T4          3.00000   T5         3.00000
REST      T6          3.00000   T7         3.00000
REST      T8          3.00000   T9         3.00000
REST      TD          3.00000   TN         3.00000
REST      TD          3.00000   MVM       83.00000
REST      BCAL        1.96000   BPRC        .04000
REST      ECENG       2.32000
RESTI     VCF         1.00000
$DATA
```

MODELO FINCA GRANDE

Datos Básicos

COLUMNS

PMAZING	TR4	1.00000	TR5		1.00000
PMAZING	TR6	1.00000	TR7		1.00000
PMAZING	TR8	1.00000	RMC4		11.06000
PMAZING	RMC5	10.22000	RMC6		7.31000
PMAZING	RMC7	2.69000	RMC8		7.90000
PMAZING	RMC9	5.90000	ASCMAZ		.25000
PMAZING	ASCIM	4.10000	CGASTCS		8.37000
PMAZING	PMAZ	10.00000	BYG	-	8.37000
PMAZING	BRGC1	- 2.03000	BRGC2	-	2.03000
PMAZING	BRGC3	- 1.53000	BRGC4	-	1.03000
PMAZING	BRGC5	.22000	BRGC6		.47000
PMAZING	BRGC7	1.97000	BRGC8		3.97000
PMAZISG	TR4	1.00000	TR5		1.00000
PMAZISG	TR6	1.00000	TR7		1.00000
PMAZISG	TR8	1.00000	RMC4		11.06000

PMAZISG	RMC5	10.22000	RMC6	6.51000	
PMAZISG	RMC7	2.44000	RMC8	9.87000	
PMAZISG	RMC9	4.90000	ASMMAZ	.25000	
PMAZISG	AFERT	1.00000	ALUIM	6.25000	
PMAZISG	CGASTCS	13.62000	PMAZ	25.00000	
PMAZISG	BYG	- 13.62000	BRG01	- 2.03000	
PMAZISG	BRG02	- 2.03000	BRG03	- 1.53000	
PMAZISG	BRG04	- 1.03000	BRG05	.22000	
PMAZISG	BRG06	.47000	BRG07	1.97000	
PMAZISG	BRG08	3.97000			
PMAZITG	TR4	1.00000	TR5	1.00000	
PMAZITG	TR6	1.00000	TR7	1.00000	
PMAZITG	TR8	1.00000	RMC5	3.00000	
PMAZITG	RMC6	6.30000	RMC7	1.00000	
PMAZITG	RMC8	9.20000	RMC9	9.00000	
PMAZITG	ASMMAZ	.32000	AFERT	2.00000	
PMAZITG	ABUY	2.00000	AMAC	2.25000	
PMAZITG	ALUIM	18.38000	CGASTCS	13.62000	
PMAZITG	PMAZ	33.00000	BYG	- 13.62000	
PMAZITG	BRG01	- 2.03000	BRG02	- 2.03000	
PMAZITG	BRG03	- 1.53000	BRG04	- 1.03000	
PMAZITG	BRG05	.22000	BRG06	.47000	
PMAZITG	BRG07	1.97000	BRG08	3.97000	
PMAZSCR	TR4	1.00000	TR5	1.00000	
PMAZSCR	TR6	1.00000	TR7	1.00000	
PMAZSCR	TR8	1.00000	TR9	1.00000	
PMAZSCR	TRX	1.00000	TRN	1.00000	
PMAZSCR	TRD	1.00000	RMC4	7.10000	
PMAZSCR	RMC5	8.58000	RMC6	14.79000	
PMAZSCR	RMC7	1.91000	RMC8	7.14000	
PMAZSCR	RMC9	2.87000	RMCX	.43000	
PMAZSCR	RMCN	4.13000	RMCD	10.65000	
PMAZSCR	ASCMAZ	.20000	ASCSCR	.15000	
PMAZSCR	AFERT	1.50000	CGASTCS	9.71000	
PMAZSCR	PMAZ	13.00000	PSCR	16.00000	
PMAZSCR	BYG	- 9.71000	BRG01	- 3.65000	
PMAZSCR	BRG02	- 3.00000	BRG03	- 2.45000	
PMAZSCR	BRG04	- 1.20000	BRG05	.10000	
PMAZSCR	BRG06	.55000	BRG07	3.30000	
PMAZSCR	BRG08	5.80000			
PSCRING	TR5	1.00000	TR6	1.00000	
PSCRING	TR7	1.00000	TR8	1.00000	
PSCRING	TR9	1.00000	TRX	1.00000	
PSCRING	TRN	1.00000	TRD	1.00000	
PSCRING	RMC1	4.00000	RMC5	9.00000	
PSCRING	RMC6	3.40000	RMC7	2.20000	
PSCRING	RMC8	7.20000	RMC9	2.20000	
PSCRING	RMCD	7.20000	ASCSCR	.22000	
PSCRING	ALUIM	6.24000	CGASTCS	9.87000	
PSCRING	PSCR	15.00000	BYG	- 9.87000	
PSCRING	BRG01	- 1.62000	BRG02	- .97000	
PSCRING	BRG03	- .92000	BRG04	- .17000	
PSCRING	BRG05	- .17000	BRG06	.06000	
PSCRING	BRG07	1.03000	BRG08	1.03000	
PSCRISO	TR5	1.00000	TR6	1.00000	
PSCRISO	TR7	1.00000	TR8	1.00000	
PSCRISO	TR9	1.00000	RMC4	9.00000	
PSCRISO	RMC5	1.00000	RMC6	2.00000	

PSDR1SG	RMC7		2.00000	RMCX		20.00000
PSDR1SG	RMCN		8.00000	ASMSCR		.25000
PSDR1SG	AFERT		1.00000	ABDY		8.00000
PSDR1SG	ACUIM		9.68000	CGASTCS		12.12000
PSDR1SG	PSCR		30.00000	BYG	-	12.12000
PSDR1SG	BRG01	-	1.02000	BRG02	-	.97000
PSDR1SG	BRG03	-	.92000	BRG04	-	.17000
PSDR1SG	BRG05	-	.17000	BRG06		.08000
PSDR1SG	BRG07		1.33000	BRG08		1.83000
PSDR1TG	TR4		1.00000	TR5		1.00000
PSDR1TG	TR6		1.00000	TR7		1.00000
PSDR1TG	TR8		1.00000	RMC4		5.40000
PSDR1TG	RMC5		10.00000	RMC6		2.00000
PSDR1TG	RMC7		2.00000	RMC8		9.00000
PSDR1TG	ASMSCR		.31000	AFERT		2.00000
PSDR1TG	ABDY		1.00000	AMAG		4.50000
PSDR1TG	ACUIM		20.48000	CGASTCS		15.87000
PSDR1TG	PSCR		40.00000	BYG	-	15.87000
PSDR1TG	BRG01	-	1.02000	BRG02	-	.97000
PSDR1TG	BRG03	-	.92000	BRG04	-	.17000
PSDR1TG	BRG05	-	.17000	BRG06		.08000
PSDR1TG	BRG07		1.33000	BRG08		1.83000
PARRSG	TR6		1.00000	TR7		1.00000
PARRSG	TR8		1.00000	TR9		1.00000
PARRSG	TRX		1.00000	RMC6		11.60000
PARRSG	RMC7		2.00000	RMC8		15.20000
PARRSG	RMCX		1.00000	ASMARR		2.00000
PARRSG	AFERT		4.00000	AMAG		2.50000
PARRSG	ACUIM		137.75000	CGASTCS		119.62000
PARRSG	PARR		36.00000	BYG	-	119.62000
PARRSG	BRG01	-	2.75000	BRG02	-	2.72000
PARRSG	BRG03	-	2.67000	BRG04	-	1.42000
PARRSG	BRG05	-	.92000	BRG06	-	.17000
PARRSG	BRG07		4.33000	BRG08		7.33000
PARRTG	TR6		1.00000	TR7		1.00000
PARRTG	TR8		1.00000	TR9		1.00000
PARRTG	TRX		1.00000	RMC8		21.00000
PARRTG	RMC9		10.00000	RMCX		3.00000
PARRTG	RMCN		3.10000	RMCD		3.00000
PARRTG	ASMARR		2.70000	AFERT		9.50000
PARRTG	AMAG		5.00000	ACUIM		154.64000
PARRTG	CGASTCS		144.75000	PARR		52.00000
PARRTG	BYG	-	144.75000	BRG01	-	2.75000
PARRTG	BRG02	-	2.72000	BRG03	-	2.67000
PARRTG	BRG04	-	1.42000	BRG05	-	.92000
PARRTG	BRG06	-	.17000	BRG07		4.33000
PARRTG	BRG08		7.33000			
PAJD2SG	TR7		1.00000	TR8		1.00000
PAJD2SG	TR9		1.00000	TRX		1.00000
PAJD2SG	TRR		1.00000	RMC7		6.00000
PAJD2SG	RMC8		12.60000	RMC9		9.70000
PAJD2SG	RMCN		3.20000	RMCD		5.40000
PAJD2SG	ASMAJD		.36000	AFERT		2.00000
PAJD2SG	ABDY		3.00000	AMAG		2.50000
PAJD2SG	ACUIM		7.90000	CGASTCS		8.57000
PAJD2SG	PAJD		13.00000	BYG	-	8.57000
PAJD2SG	BRG01	-	7.11000	BRG02	-	5.11000
PAJD2SG	BRG03	-	2.57000	BRG04		12.00000

PAJJ2SG	BRGJ5		13.58000	BRGJ6	-	9.13000
PAJJ2SG	BRGJ7	-	.11000	BRGJ8	-	.11000
PAJJ2TG	TR1		1.00000	TRX		1.00000
PAJJ2TG	TRA		1.00000	TRD		1.00000
PAJJ2TG	RMC1		11.60000	RMC2		6.60000
PAJJ2TG	RMCX		8.80000	RMCA		13.00000
PAJJ2TG	RMCD		12.80000	ASMAJC		.05000
PAJJ2TG	AFERT		2.00000	ABUY		3.00000
PAJJ2TG	AMAC		2.50000	AQUIM		5.12000
PAJJ2TG	CGASTLS		6.37000	PAJC		14.00000
PAJJ2TG	BYG	-	6.37000	BRGJ1	-	7.11000
PAJJ2TG	BRGJ2	-	5.11000	BRGJ3	-	2.57000
PAJJ2TG	BRGJ4		13.58000	BRGJ5		13.58000
PAJJ2TG	BRGJ6	-	9.13000	BRGJ7	-	.11000
PAJJ2TG	BRGJ8	-	.11000			
PALG1G	TR4		1.00000	TR5		1.00000
PALG1G	TR6		1.00000	TR7		1.00000
PALG1G	TR8		1.00000	TR9		1.00000
PALG1G	TRX		1.00000	TRA		1.00000
PALG1G	TRD		1.00000	RMCC4		1.57000
PALG1G	RMCC6		1.06000	RMCC7		2.56000
PALG1G	RMCC8		.99000	RMCC9		2.39000
PALG1G	RMCCA		1.23000	RMCCD		31.26000
PALG1G	ASMALG		.46000	AFERT		3.00000
PALG1G	ABUY		1.07000	AMAC		6.21000
PALG1G	AQUIM		246.56000	CGASTUS		67.27000
PALG1G	PALG		32.00000	BYG	-	67.27000
PALG1G	BRGJ1	-	14.89000	BRGJ2	-	14.14000
PALG1G	BRGJ3	-	12.39000	BRGJ4	-	2.39000
PALG1G	BRGJ5		1.11000	BRGJ6		10.11000
PALG1G	BRGJ7		19.11000	BRGJ8		11.40000
PCAN1G	TR1		1.00000	TR2		1.00000
PCAN1G	TR3		1.00000	TR4		1.00000
PCAN1G	TR5		1.00000	TR6		1.00000
PCAN1G	TR7		1.00000	TR8		1.00000
PCAN1G	TR9		1.00000	TRX		1.00000
PCAN1G	TRA		1.00000	TRD		1.00000
PCAN1G	RMCC1		43.00000	RMCC2		4.[illegible]0000
PCAN1G	RMCC3		7.60000	RMCC6		6.87000
PCAN1G	RMCC7		2.33000	RMCC8		7.05000
PCAN1G	RMCC9		2.53000	ASMCAN		3.87000
PCAN1G	AFERT		4.00000	AMAC		1.17000
PCAN1G	AQUIM		28.73000	CGASTLS		241.66000
PCAN1G	PCAN		78.33000	BYG	-	241.66000
PCAN1G	BRGJ1	-	1.33000	BRGJ2	-	.83000
PCAN1G	BRGJ3	-	.83000	BRGJ4	-	.53000
PCAN1G	BRGJ5	-	.83000	BRGJ6		.27000
PCAN1G	BRGJ7		1.37000	BRGJ8		3.57000
RMCF1	RMC1	-	1.00000	RMCF1		1.00000
RMCF2	RMC2	-	1.00000	RMCF2		1.00000
RMCF3	RMC3	-	1.00000	RMCF3		1.00000
RMCF4	RMC4	-	1.00000	RMCF4		1.00000
RMCF5	RMC5	-	1.00000	RMCF5		1.00000
RMCF6	RMC6	-	1.00000	RMCF6		1.00000
RMCF7	RMC7	-	1.00000	RMCF7		1.00000
RMCF8	RMC8	-	1.00000	RMCF8		1.00000
RMCF9	RMC9	-	1.00000	RMCF9		1.00000
RMCFX	RMCX	-	1.00000	RMCFX		1.00000

AMOFN	RMCN	-	1.00000	BMOFN		1.00000
AMOFD	RMCD	-	1.00000	BMOFD		1.00000
AMOC1	RMC1	-	1.00000	BYG	-	2.00000
AMOC2	RMC2	-	1.00000	BYG	-	2.00000
AMOC3	RMC3	-	1.00000	BYG	-	2.00000
AMOC4	RMC4	-	1.00000	BYG	-	2.00000
AMOC5	RMC5	-	1.00000	BYG	-	2.00000
AMOC6	RMC6	-	1.00000	BYG	-	2.00000
AMOC7	RMC7	-	1.00000	BYG	-	2.00000
AMOC8	RMC8	-	1.00000	BYG	-	2.00000
AMOC9	RMC9	-	1.00000	BYG	-	2.00000
AMOCX	RMCX	-	1.00000	BYG	-	2.00000
AMOCN	RMCN	-	1.00000	BYG	-	2.00000
AMOCD	RMCD	-	1.00000	BYG	-	2.00000
AMOCC1	RMCC1	-	1.00000	BYG	-	4.00000
AMOCC1	BCRED		4.00000			
AMOCC2	RMCC2	-	1.00000	BYG	-	2.00000
AMOCC2	BCRED		2.00000			
AMOCC3	RMCC3	-	1.00000	BYG	-	2.00000
AMOCC3	BCRED		2.00000			
AMOCC4	RMCC4	-	1.00000	BYG	-	2.00000
AMOCC4	BCRED		2.00000			
AMOCC5	RMCC5	-	1.00000	BYG	-	2.00000
AMOCC5	BCRED		2.00000			
AMOCC6	RMCC6	-	1.00000	BYG	-	2.00000
AMOCC6	BCRED		2.00000			
AMOCC7	RMCC7	-	1.00000	BYG	-	2.00000
AMOCC7	BCRED		2.00000			
AMOCC8	RMCC8	-	1.00000	BYG	-	2.00000
AMOCC8	BCRED		2.00000			
AMOCC9	RMCC9	-	1.00000	BYG	-	2.00000
AMOCC9	BCRED		2.00000			
AMOCCX	RMCCX	-	1.00000	BYG	-	2.00000
AMOCCX	BCRED		2.00000			
AMOCCN	RMCCN	-	1.00000	BYG	-	2.00000
AMOCCN	BCRED		2.00000			
AMOCCD	RMCCD	-	1.00000	BYG	-	4.00000
AMOCCD	BCRED		4.00000			
AUTOMAZ	PMAZ	-	1.00000	CPMAZ		1.00000
AUTOMAZ	BCMASLP	-	.25000	BCALC		.16200
AUTOMAZ	BPRCTT		3.49000			
VTAMAZ	PMAZ	-	1.00000	CPMAZ		1.00000
VTAMAZ	PVMAZ		1.00000	BYG		7.00000
AUTOSCR	PSCR	-	1.00000	CPSCR		1.00000
AUTOSCR	BCMASCR		1.00000	BCALC		.16700
AUTOSCR	BPRCTT		3.54000			
VTASCR	PSCR	-	1.00000	CPSCR		1.00000
VTASCR	PVSCR		1.00000	BYG		6.25000
VTAGC	PAGC	-	1.00000	BYG		22.75000
VTALG	PALG	-	1.00000	BYG		29.10000
VTAGAR	PGAR	-	1.00000	BYG		14.30000
VTARR	PARR	-	1.00000	BYG		23.25000
TRENT	MRENT	-	1.00000	BYG	-	25.00000
TRENT	BCRED		25.00000			
TMAZ	AMAZ	-	1.00000	BYG	-	10.00000
TMAZ	BCRED		10.00000			
TBUY	ABUY	-	1.00000	BYG	-	4.00000
TCOAST	COASTLS	-	1.00000	BYG	-	1.00000

TSCMA	ASCMAZ	-	1.00000	BYG	-	10.00000
TSCSCR	ASCSCR	-	1.00000	BYG	-	6.00000
TSMMA	ASMMAZ	-	1.00000	BYG	-	16.50000
TSMMA	BCRED		16.50000			
TSMSCR	ASMSCR	-	1.00000	BYG	-	13.68000
TSMSCR	BCRED		13.68000			
TSMAJC	ASMAJC	-	1.00000	BYG	-	80.00000
TSMAJC	BCRED		80.00000			
TSMALG	ASMALG	-	1.00000	BYG	-	35.00000
TSMALG	BCRED		35.00000			
TSMARR	ASMARR	-	1.00000	BYG	-	42.00000
TSMARR	BCRED		42.00000			
TSMCAN	ASMCAN	-	1.00000	BYG	-	22.00000
TSMCAN	BCRED		22.00000			
TCRED	BYG	-	.10000	BCRED	-	1.00000
TGOIM	AGOIM	-	1.00000	BYG	-	1.00000
TGOIM	BCRED		1.00000			
PTMAZ	CPMAZ	-	1.00000	PVMAZ	-	8.00000
PTSCR	CPSCR	-	1.00000	PVSCR	-	9.00000
CMAZ	ECMASCR	-	.25000	ECALC		.16200
CMAZ	EPROTT		3.49000	CALIM		8.00000
CMAZ	FC	-	8.00000			
CFRJ	BCALC		.15600	PCALFRJ		.15600
CFRJ	BPROTT		10.30000	CALIM		21.00000
CFRJ	FC	-	21.00000			
CARR	BCALC		.16500	PCALAR		.16500
CARR	BPROTT		3.27000	CALIM		26.00000
CARR	FC	-	26.00000			
CCAR	BCALC		.04300	PCALCAR		.04300
CCAR	BPROTT		8.49000	CALIM		150.00000
CCAR	FC	-	150.00000			
CLECH	BCALC		.03200	PCALECH		.03200
CLECH	BPROTT		1.36000	CALIM		13.60000
CLECH	FC	-	13.60000			
CAZO	BCALC		.17400	PCALAZO		.17400
CAZO	CALIM		30.00000	FC	-	30.00000
CMANT	BCALC		.40100	PCALMAT		.40100
CMANT	CALIM		45.00000	FC	-	45.00000
TCALC	BCAL		1.00000	BCALC	-	1.00000
TCALC	PCALMA	-	.28000	PCALAR	-	.10000
TCALC	PCALCAR	-	.03500	PCALAZO	-	.19400
TCALC	PCALFRJ	-	.07500	PCALMAT	-	.09200
TCALC	PCALECH	-	.03000			
TPROTC	EPROT		1.00000	EPROTT	-	1.00000
CTCMAZ	PCALMA		.16200			
RGOI	BRGOI	-	1.00000	BZ		2.00000
RGO2	BRGO2	-	1.00000	BZ		2.00000
RGO3	BRGO3	-	1.00000	BZ		2.00000
RGO4	BRGO4	-	1.00000	BZ		2.00000
RGO5	BRGO5	-	1.00000	BZ		2.00000
RGO6	BRGO6	-	1.00000	BZ		2.00000
RGO7	BRGO7	-	1.00000	BZ		2.00000
RGO8	BRGO8	-	1.00000	BZ		2.00000
CTALIM	ECENGEL		.01490	CALIM	-	1.00000
EXECPCM	ECENGEL	-	[illegible]	PCALPC	-	1.00000
Z	BZ	-	5.29000			
[illegible]	[illegible]	-	[illegible]	[illegible]		[illegible]
[illegible]	FC		1.00000			

RESI	TR1	50.00000	TR2	50.00000
RESI	TR3	50.00000	TR4	50.00000
RESI	TR5	50.00000	TR6	50.00000
RESI	TR7	50.00000	TR8	50.00000
RESI	TR9	50.00000	TRX	50.00000
RESI	TRN	50.00000	TRD	50.00000
RESI	BMCF1	30.00000	BMCF2	30.00000
RESI	BMCF3	30.00000	BMCF4	30.00000
RESI	BMCF5	30.00000	BMCF6	30.00000
RESI	BMCF7	30.00000	BMCF8	30.00000
RESI	BMCF9	30.00000	BMCFX	30.00000
RESI	BMCFN	30.00000	BMCFD	30.00000
RESI	BCAL	2.29000	BFRCT	75.42400
RESI	ECENGEL	8.25000		
RESTI	FC	1.00000		
BOUNDS				
LC COM	PCANIG	14.00000		
UP COM	CMAZ	7.00000		
ENDATA				

ANEXO Nº 5

REGION SUR

Distribución de municipios según fertilidad

MUNICIPIOS POCO FERTILES	MUNICIPIOS RELATIVAMENTE FERTILES
Valle	**Valle**
Aramecina	Alianza
Caridad	Nacaome
Coray	San Lorenzo
Goascorán	
Langue	
Amapala	
Choluteca	**Choluteca**
Concepción de María	Apacilagua
Duyure	Choluteca
Orocuina	El Triunfo
Pespire	Marcovia
San Antonio de Flores	Namasigue
San Isidro	Santa Ana de Yusguare
San José	
San Marcos de Colón	
Morolica	
El Corpus	
Francisco Morazán	
Alburarén	
Curarén	
La Libertad	
San Miguelito	
La Paz	
Lauterique	
San Antonio del Norte	
El Paraíso	
Liure	
Soledad	
Texiguat	
Vado Ancho	
Yauyupe	