

# SOME FACTORS ASSOCIATED WITH THE ADOPTION OF RECOMMENDED CORN PRODUCTION PRACTICES IN SOUTHERN PHILIPPINES

Myrna M. Avila

Instructor, Office of the Director of Extension, Visayas State College of Agriculture, Baybay, Leyte, Philippines.

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## ABSTRACT

A total of 175 corn farmers in the three provinces of Region XI were personally interviewed with the use of an interview schedule. Of the nine recommended corn production practices, the farmers had high adoption rate in six, namely: seed treatment, weed control, thinning, distancing of plants, insect control, and application of fertilizer. Use of high yielding variety, use of machinery and disease control were also adopted by the corn farmers. Most of the farmers adopted five to seven recommended corn production practices. Socio-economic and diffusion variables such as credit, gross income, gross production, quality of road, availability of transportation facilities, use of printed media, contact with corn experts and attendance in informational gatherings were related to the adoption of recommended corn production practices.

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**KEY WORDS:** Corn farmer. Adoption. Recommended practices. Personal variables. Economic variables. Region XI. Southern Philippines.

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## INTRODUCTION

Filipino farmers have been exposed to recommended corn-growing practices but no one can be certain on the extent of and the factors that influenced the adoption of these practices. A number of significant studies have brought out useful information on agricultural

extension and related matters on the diffusion of innovations (Rogers, 1971). However, little is known about agricultural innovation in Southern Mindanao, particularly among corn farmers in Region XI. These areas were considered to be one of the many corn producing regions in the Philippines with a great proportion of corn-eating



population and corn-area utilization. Additionally, Region XI was one of the priority regions under the "Masaganang Maisan" program of the Philippines and there was little, if any, research on the adoption of corn innovations in that part of the country. This study therefore sought to identify some variables related to the adoption of recommended corn production practices among corn farmers.

### METHOD

The study was confined to the provinces of South Cotabato, Davao del Sur and Davao City. Only farmers who cultivated at least one hectare of corn field were included in this study. One hundred seventy five farmers were selected to comprise the respondents using the multi-stage sampling techniques.

The collection of data was done by personal interview in the farmers' residence or on their farms, whichever was convenient to the respondent.

Percentages, ranks, averages and standard deviations were used in describing the characteristics of the farmers and the farming practices adopted by them. In determining the significance of association between the selected variables and adoption of corn practices, the chi-square test was used.

### RESULTS AND DISCUSSION

#### *Characteristic of Respondents.*

Table 1 shows the characteristics

of the corn farmers in Region XI. As a group, they are two years younger than the corn farmers in Leyte (Pascual, 1971) and more than one year older than the Leyte rice farmers (Contado, 1969). Their average education is higher by 1.6 years than the Leyte corn farmers (Pascual, 1971).

The farmers are not neophytes in corn farming. More than one-third (34%) farmed for 21-30 years, although the farmers of this group are four years younger in corn farming than those in Leyte. Mindanao corn farmers cultivated almost the same area of corn field as those in Leyte.

Generally, the respondents belong to the middle-income group. On the average, their annual income is ₱7,466.04 compared to Leyte corn farmers with only ₱1,817.00.

#### *Recommended Production Practices Adopted by the Corn Farmers.*

Nine recommended corn production practices were adopted by the corn farmers in Region XI. These included the following: use of high yielding variety, use of machinery, distancing of plants, application of fertilizer, thinning, weed control, disease control, insect control, and seed treatment.

Of the nine recommended corn production practices, the majority of the farmers had high adoption rate in six practices, namely: seed treatment, weed control, thinning, distancing of plants, insect control, and application of fertilizer.

Most of the farmers adopted five



**Table 1.** Characteristic of corn farmers in Southern Mindanao.

Variable	Number	Percent	Average
Age (years)			
30 and below	28	16	
31-40	40	23	
41-50	47	27	
51-60	51	29	
60 and above	7	5	44.0
Educational attainment (level)			
None	16	9	
1-4 grade	47	27	
5-6 grade	54	31	
7-10 grade (high school)	51	29	
College	7	4	5.3
Farming experience (years)			
1-10	43	25	
11-20	55	31	
21-30	60	34	
31 and above	17	10	19.0
Length of residence in the barrio (years)			
1-15	50	29	
16-30	97	55	
31-45	23	13	
46 and above	5	3	21.5
Land tenure (tenurial status)			
Owner	77	44	
Part-owner	13	7	
Share-tenant	60	35	
Leaseholder	25	14	
Size of farm (ha.)			
1.00-1.75	45	26	
2.00-2.75	38	22	
3.00-3.75	37	21	
4.00-4.75	18	10	
5.00 and above	37	21	3.0
Gross income (P)			
2,500 and below	58	33	
2,501-5,000	48	27	
5,001-7,500	26	15	
7,501-10,000	12	7	
10,001 and above	31	18	P7,466.04
Gross production (cavans)			
250 and below	74	42	
251-500	42	24	
501-1,000	39	22	
1,001 and above	20	12	522.51



**Table 2.** The recommended corn production practices adopted by the corn farmers.

Recommended Practice	Number of Respondents	Percent
Seed treatment	154	88
Weed control	154	88
Thinning	151	86
Distancing of plants	150	85
Insect control	102	58
Application of fertilizer	100	57
Use of machinery	80	46
Use of high yielding variety	73	42
Disease control	49	28

to seven recommended corn production practices (Table 3). The mean score of 5.76 can be considered as high considering that it is more than 50 percent of the total number of corn production practices.

*Factors Associated with the Adoption of Recommended Corn Production Practices.*

Results of the statistical test

using the chi-square showed that of the 18 variables included in the analysis eight were found to be significantly associated with the adoption of recommended corn production practices (Table 4).

The findings revealed that farmers who secured credit were able to buy fertilizers, chemicals, and other production inputs; thus they tended to be more innovative. This can be attributed to the many respondents

**Table 3.** Number of recommended corn production practices adopted by the corn farmers.

No. of Practice Adopted	No. of Respondents Reporting	Percent
One practice	0	0
Two practices	0	0
Three practices	7	4
Four practices	23	13
Five practices	47	27
Six practices	38	22
Seven practices	43	25
Eight practices	15	8
Nine practices	2	1
Total	175	100

Mean adoption score = 5.76



who joined the Masaganang Maisan Program in order to avail themselves of loans from lending institutions of the government.

The annual gross income of farmers was found to have a certain degree of association with the adoption of recommended corn production practices. One possible

explanation is that with more income available, there is ready capital to purchase farm production inputs needed in the farm operations. Thus, the higher the income the higher the adoption level, and vice versa.

In this study, it also appeared that the higher the gross production

**Table 4.** Chi-square values showing the factors associated with adoption of recommended corn production practices.

Variable	Degree of Freedom	Computed Chi-square value
<u>Farmer's characteristics</u>		
Age	4	5.65 <sup>ns</sup>
Educational attainment	4	3.52 <sup>ns</sup>
Farming experience	3	3.32 <sup>ns</sup>
Length of residence	2	0.68 <sup>ns</sup>
Leadership experience	1	0.58 <sup>ns</sup>
<u>Economic factors</u>		
Tenure status	3	0.56 <sup>ns</sup>
Size of farm	4	8.96 <sup>ns</sup>
Household members' participation	2	0.11 <sup>ns</sup>
Credit	3	14.61 **
Gross income	2	6.91 *
Gross production	3	13.12 **
<u>Infrastructural factors</u>		
Quality of road	2	13.95 **
Availability of transportation facilities	1	6.82 **
<u>Diffusion factors</u>		
Use of radio	3	3.92 <sup>ns</sup>
Use of printed media	1	4.66 *
Organization affiliation	1	1.84 <sup>ns</sup>
Contact with corn specialist	3	26.24 **
Attendance in informational gatherings	1	14.07 **

\* Significant

\*\* Highly significant

ns Not significant



of the corn farmers, the higher was the motivation to adopt more corn innovations. Thus, those who were getting more yield adopted more recommended corn production practices.

Quality of roads influenced the adoption rates among corn farmers in the area. In areas with "good" and "fair" roads, farmers tended to have high rates of adoption of recommended corn production practices. The possible explanation of this finding is that with better roads, there is better communication and contacts between farmers and change agents and probably better market for their farm produce.

The data revealed that the more available the transportation from the farm to the market, the higher was the adoption of recommended corn production practices. A probable reason that can be drawn to explain the relationship is that availability of transportation facilities and presence of good roads enable the farmers to market their produce faster with lesser production cost in terms of time and money, thus encouraging them to be more innovative.

The study indicated that respondents who used printed matters relevant to corn production tended to adopt more recommended practices. Printed media as a channel of communication can be utilized to facilitate awareness and adoption of farm innovations by farmers.

Agricultural development programs have recognized the need for change agents who will be in close contact with the farmers and act as the direct source of technical ex-

pertise. The findings revealed that contact with corn farm technicians positively influenced the adoption rate of recommended production practices among corn farmers. The trend of association could be explained by the fact that innovative or responsive farmers usually seek the advice of the corn farm management technicians and consequently learn new ideas and skills in corn production.

The data showed that the percentage of high adopter is high among those who had attended informational gatherings. It could be inferred that attendance in informational gathering likely resulted in farmers' learning of new ideas and further motivated them to acquire more knowledge and skills in corn farming.

#### IMPLICATION AND RECOMMENDATIONS

Some sociological and economic factors were found to be relevant to the adoption of recommended corn production practices. For one, there seems to be a need for government personnel to motivate and encourage more farmers who lack capital to avail themselves of credit from lending institutions of the government such as the rural banks, the Philippine National Bank, and the Development Bank of the Philippines so that they can procure the necessary production inputs for their farm operations. Furthermore, better roads and transportation facilities should also be provided by the government to the barrios to



facilitate communication and contact between farmers and farm management technicians. Good roads and transportation facilities enable the farmers to market their produce faster and with lesser production costs in terms of time and money.

The result of the study also points out the necessity of exposing the farmers to the demonstrative effect of innovation. Educators and scientists should therefore continuously search for improvement in corn technology and to inform the farmer about the new practices through demonstration production trials and other means of disseminating such information. Furthermore, agricultural development programs have recognized the need for change agents who will be in close contact with the farmers and act as direct source of technical expertise. The technicians should not therefore try to cover an area more than what they could serve during the duration of their assignment. To facilitate contact with farm management technicians, it is suggested that they cover an area with a reasonable number of farmers (around 50) to handle. It is further suggested that trained and competent technicians should reside as much as possible in the barrio so that farmers could easily contact them when they need their advice.

Printed media as channel of communication can be utilized to facilitate awareness and adoption of

farm innovations by farmers. The government and other institutions must endeavor then to produce and provide reading materials containing information relevant to agricultural production in the reading centers to the barrio. It is important, however, for these materials to be prepared within the level of education and comprehension of the farmers.

The foregoing recommendations should receive serious considerations in the planning and implementation of an effective instructional and extension program that will be workable for the farmers in the region if development goals are to be realized. To accomplish this, an integrated approach to the development of the region must be planned and implemented. Effective training programs and other extension activities are indispensable activities to attain higher productivity levels among farmers. On the whole, it implies that extension workers and institutions must not overlook the limitations of the farmers in the formulation of program of development. Likewise, change agents should not only make farmers aware of the agricultural innovations being introduced to them but most importantly, they should encourage the farmers to adopt the innovations so that extension efforts will become more meaningful, realistic and effective. Finally, extension workers must have a "sense of commitment" in educating and helping the farmers.



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