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FARMERS' ADOPTION LEVEL OF CORN CULTIVATION TECHNOLOGY (*Zea mays* L) IN THE SUB-DISTRICT OF LABUHANBATU DISTRICT ON THE INFLUENCE OF SOCIOECONOMIC ASPECTS

(Tingkat Adopsi Petani Terhadap Teknologi Budidaya Jagung (Zea mays L) Pada Pengaruh Aspek Sosial Ekonomi Di Kecamatan Pangkatan Kabupaten Labuhanbatu)

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ABSTRACT

Farmers are the people who use land (nature), labor, and capital to organize production in the agricultural field, whether for profit or not. Farming is a production organization.Corn (*Zea mays* L.) is one of the main commodities of legumes. It is a staple food in the United States because it is a good source of vegetable protein that helps diversify the food supply and ensures the nation's food security. Farmers are influenced by a variety of factors, including economic ones, such as capital control, the expectation of greater profits from farming, which will be chosen in comparison to other forms of farming. This is especially true when it comes to prioritizing optimal production results. The study was *conducted* in Sidorukun Village, Pangkatan District, Labuhanbatu Regency, with the goals of determining the level of farmer adoption of corn cultivation technology and the socioeconomic influence of farmers on corn cultivation technology.By using survey techniques, this study employs either quantitative or descriptive methods. According to the study's findings, the adoption rate of maize cultivation in Sidorukun village, Pangkatan District, Labuhanbatu Regency, is influenced by age, education level, duration of farming, and frequency of counseling. Additionally, corn cultivation did not adhere to all components of cultivation technology recommended by Field Agricultural Extension (PPL).

Keywords: *Corn, Socio-Economic, Farming, Agricultural Extension*

ABSTRAK

Usaha tani adalah orang yang menggunakan tanah (alam), tenaga kerja, dan modal untuk menyelenggarakan produksi di bidang pertanian, baik untuk memperoleh keuntungan maupun tidak. Pertanian merupakan organisasi produksi. Jagung (*Zea mays* L.) merupakan salah satu komoditas utama kacang-kacangan. Ini adalah makanan pokok di Amerika Serikat karena merupakan sumber protein nabati yang baik yang membantu mendiversifikasi pasokan makanan dan memastikan ketahanan pangan nasional. Petani dipengaruhi oleh berbagai faktor, termasuk faktor ekonomi, seperti kontrol modal, harapan keuntungan yang lebih besar dari pertanian, yang akan dipilih dibandingkan dengan bentuk pertanian lainnya. Apalagi dalam hal mengutamakan hasil produksi yang Maksimal Penelitian dilakukan di Desa Sidorukun, Kecamatan Pangkatan, Kabupaten Labuhanbatu, dengan tujuan untuk mengetahui tingkat adopsi petani terhadap teknologi budidaya jagung dan pengaruh sosial ekonomi petani terhadap jagung. teknologi budidaya. Dengan menggunakan teknik survei, penelitian ini menggunakan metode kuantitatif atau deskriptif. Berdasarkan hasil penelitian, tingkat adopsi budidaya jagung di Desa Sidorukun, Kecamatan Pangkatan, Kabupaten Labuhanbatu, dipengaruhi oleh umur, tingkat pendidikan, lama pertanian,

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dan frekuensi penyuluhan. Selain itu, budidaya jagung tidak mengikuti semua komponen teknologi budidaya yang direkomendasikan oleh Penyuluh Pertanian Lapang (PPL).

Kata kunci: *Jagung, Sosial Ekonomi, Usahatani, Penyuluh Pertanian*

INTRODUCTION

Indonesia is a developing nation where the majority of the population relies on agriculture for their livelihood. According to Hadi, (2015), the agricultural sector plays a significant role in the national development framework because, in addition to aiming to provide food for the entire population, it also contributes to the country's non-oil and gas sector's foreign exchange.

Farmers are the people who use land (nature), labor, and capital to organize production in the agricultural field, whether for profit or not. Farming is a production organization. In other words, the success of a farming business is closely related to the income and expenses incurred. Farming is said to be successful if the farm is able to generate sufficient income to cover all of the necessary costs and tools. According to Haryati *et al.*, (2014), a variety of factors, including biophysical, social, economic, and political, influence an individual's capacity to produce agricultural food products.

Corn (*Zea Mays* L.) is one of the main commodities of legumes. It is a staple food in the United States because it is a good source of vegetable protein that helps diversify the food supply and ensures the nation's food security. Since domestic corn production only produces 0.8 million tons per year, the annual demand for corn exceeds 2 million tons, necessitating 1.2 million tons of imports to meet it. Taking into account a number of factors, including the following, the anticipated demand for corn will continue to rise alongside the rising corn consumption by Indonesians: increasing population, rising per capita income, and public awareness of nutrition in food. Consumption per capita from 8.12 kg in 2005 to 9.46 kg in 2020, or an average increase of 1.02 percent per year (Purba, R. C. 2017), Many factors influence farmers, particularly in terms of prioritizing optimal production results. These factors include economic factors, such as capital control, expectations of greater profits from farming, plant age, stability of production yields, easy or not, and plant age (Nasution, A. H. 2014)

Any time, the money is sold.The quality and size of the land owned, commodity resistance to pests and diseases, production potential, degree of adaptation, and climate suitability are all technical factors (Sidauruk *and* Ginting, 2015). Long-standing customs and practices, neighboring farms, labor availability, farmer and family interests, education level, and other social factors are all examples (Todu, 2015).

Farmers face both internal and external challenges when putting the farm's production process into action. Internal challenges include a lack of quality and quantity production factors (Utama, 2007). Therefore, in order for farmers to maximize income, they must be adept at selecting and coordinating profitable crop varieties and combining existing production factors. In contrast, external issues include invasions of pests and diseases as well as natural conditions or seasons (Yusdianto, H. 2017).

An adoption procedure for an agricultural product is necessary alongside corn farming. The introduction of innovation to the farming community precedes the adoption process, and then a mental process is used to accept or reject the innovation. In the event that the consequence of the psychological cycle is a choice to acknowledge a development, then reception happens. (Utama, 2007), there are several stages in the adoption process: awareness, attention, evaluation, experimentation, adoption, and confirmation.

In the Pangkatan District of the Labuhanbatu Regency, the aim of this study

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was to ascertain the level of farmer adoption of corn cultivation technology and the socioeconomic influence of farmers on corn cultivation technology.

RESEARCH METHODS

The location and time of the study

This study was carried out at an elevation of 18 meters above sea level in Sidorukun Village, which is located in the Pangkatan District of the Labuhanbatu Regency.Figure 1 depicts the research that took place from April to June of 2022

Figure 1. Map of Research Locations in Sidorukun Village, Pangkatan District, Labuhanbatu Regency

Research methods

This study used quantitative or descriptive methods to conduct a survey of corn farmers in the Sidorukun Village area of the Pangkatan District

RESULTS AND DISCUSSION

Corn cultivation technology adoption rates by farmers in Sidorukun Village, Pangkatan District, Labuhanbatu Regency

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Table 1. Level of Adoption of Corn Cultivation Technology in Sidorukun Village, Pangkatan District, Labuhanbatu Regency

No	Teknologi budidaya	Average score achieved	Expected Score	Percentage of achievement (%)
1	Varietas	2.5	22	70.22
2	Pengolahan lahan	2.2	11	67.22
3	Penanaman	1.9	32	78.88
4	Pemeliharaan	1.5	22	68.98
5	Pemupukan	1.57	21	66.87
6	Pengendalian hama penyakit	1.13	21	78.98
7	Panen dan Pasca panen	2.43	11	78.77
	Jumlah	1.89	20	72.85

The adoption of corn cultivation technology in the study area can be described as moderate, as shown in Table 1 and Figure 2.

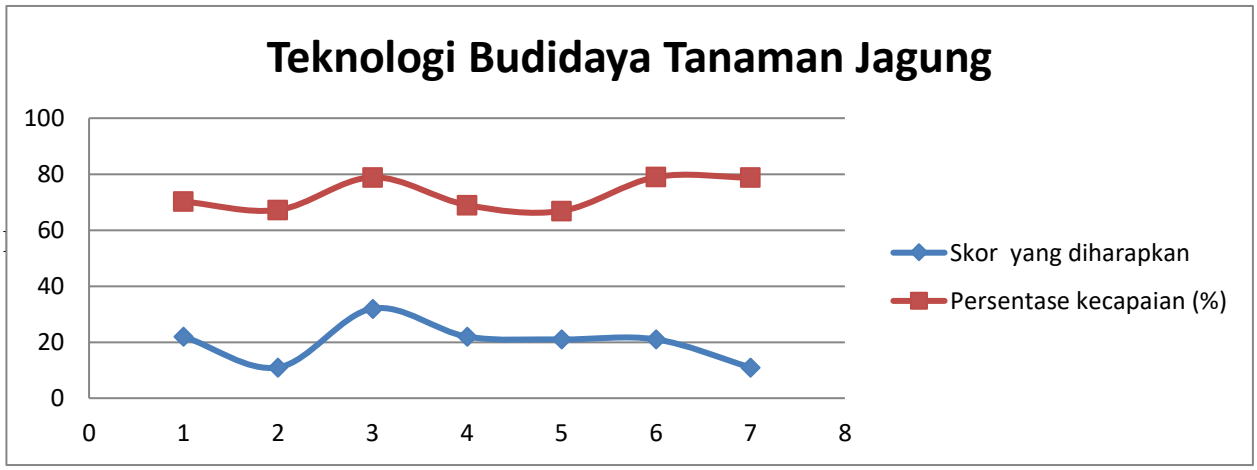

Figure 2. Level of Adoption of Corn Cultivation Technology in Sidorukun Village, Pangkatan District, Labuhanbatu Regency

This is due to the fact that farmers' adoption of corn cultivation technology is categorized as medium due to the research area's continued use of traditional agricultural systems, high fertilizer prices, insufficient capital, the absence of extension workers' roles, and the absence of clear socialization from the local government.

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Table 2. Regression Results of Socio-Economic Aspects with Farmer Adoption Rate

Socio-Economic Aspects of Farmers		
Koefisien	T-Calculate	T-Table
12.00	8.33	
14.90	11.21	
24.12	12.11	
26.60	12.58	3.06
20.11	10.03	
20.32	11.642	
21.53	10.302	
20.75		

Sourced from field agricultural instructors (PPL), whose job it is to provide information on corn cultivation technology like the use of superior varieties, how to cultivate corn soil, spacing, planting, maintenance, fertilization, and effective pest and disease management in corn farming. consequently having a beneficial effect on farmers' production and income. However, in Sidorukun Village in the Pangkatan District of the Labuhanbatu Regency, where farmers do not perceive the extension worker's role, the extension worker's performance and role are still below the required level. In addition, farmers believe they are more knowledgeable than others because they believe they have been farming longer

The Relationship Between Farmers' Adoption Rate of Corn Cultivation Technology and Farmers' Socio-Economic Aspects

In Sidorukun Village, Pangkatan District, Labuhanbatu Regency, the regression results from the influence of farmers' socioeconomic factors on farmer adoption of corn cultivation technology can be seen in Table 2. F count (8.136) is higher than F table (2.74) in Table 2 indicating that age, educational level, farming duration, counseling attendance, dependents, and land area all have a positive impact on corn cultivation technology adoption. The coefficient of R2 is 0.752, indicating that age, level of education, length of farming, frequency of counseling, number of dependents, and land area all have a significant impact on the ups and downs of corn cultivation technology.while additional variables that were not estimated in the study have an impact on the remaining 24.8%.

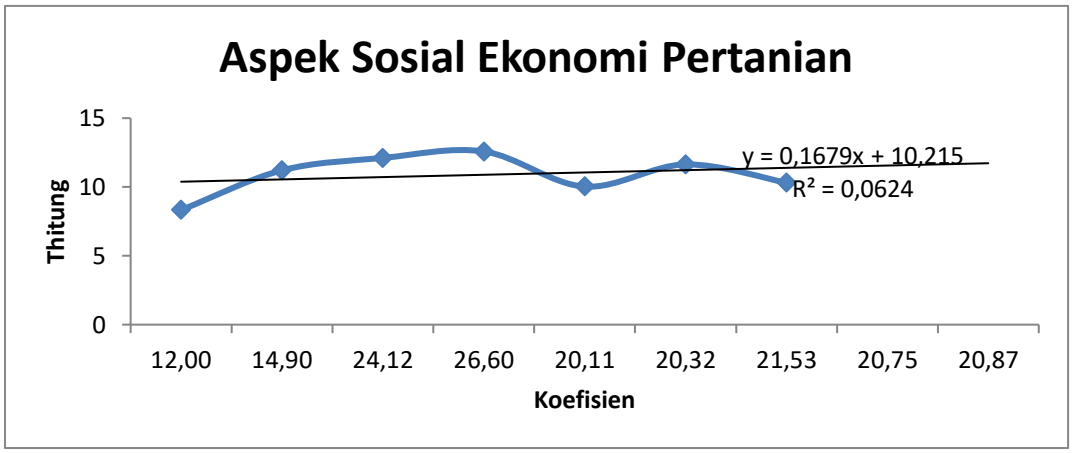

Figure 3. Regression of Socio-Economic Aspects with Farmer Adoption Rate

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CONCLUSIONS

1. Corn cultivation is being used at a moderate rate in Sidorukun Village, Pangkatan Subdistrict, Labuhanbatu Regency.
2. The cultivation of corn in the Sidorukun village area is inappropriate and has not adhered to all aspects of the cultivation technology that the Field Agricultural Extension (PPL) has recommended.
3. The degree of reception of corn development in Sidorukun town is impacted by age, training level, length of cultivating, and recurrence of going to directing while the number of wards and land region don't influence the degree of reception of corn development innovation.

REFERENCES

Hadi, S. (2015). *Tingkat Adopsi Petani Terhadap Inovasi Pasca Panen Padi Dan Jagung Pada Sekolah Lapang Pengelolaan Tanaman Terpadu (Sl-Ptt) Di Desa Bagekpapan Kecamatan Pringgabaya Kabupaten Lombok Timur* (Doctoral dissertation, Universitas Mataram).

Haryati, Y., Nurbaeti, B., & Permadi, K. (2014). Tingkat Adopsi Petani Terhadap Komponen Teknologi Pengelolaan Tanaman Terpadu Jagung Di Majalengka Farmers Adoptionf Of Component Technology Integrated Crop Management Of Corn In Majalengka. *Jurnal Pertanian Agros*, *16*(2), 412-421.

Nasution, A. H. (2014). *Analisis Dampak Adopsi Teknologi Budidaya Jagung terhadap Pendapatan Petani (Kasus: Desa Bangun Panei Kecamatan Dolok Pardamean Kabupaten Simalungun)* (Doctoral dissertation, Universitas sumatera Utara).

Purba, R. C. (2017). Analisis Tingkat Adopsi Petani Terhadap Teknologi Budidaya Jagung dan Hubungannya dengan Faktor Sosial Ekonomi (Kasus: Desa Palding Kecamatan Tigalingga Kabupaten Dairi).

Sidauruk, V. M., & Rahmanta Ginting, E. (2015). Analisis Tingkat Adopsi Petani Terhadap Teknologi Budidaya Jagung Dan Hubungannya Dengan Faktor Sosial Ekonomi (Studi Kasus: Kecamatan Lumban Julu, Kabupaten Toba Samosir). *Journal On Social Economic Of Agriculture And Agribusiness*, *4*(1).

Todu, D. T., Yudiarini, N., & Pratiwi, L. P. K. (2020). Tingkat Adopsi Petani Terhadap Pengembangan Jagung Manis (Kasus di Subak Padanggalak, Kecamatan Denpasar Timur). *AGRIMETA: Jurnal Pertanian Berbasis Keseimbangan Ekosistem*, *10*(20).

Utama, S. P., Cahyadinata, I., & Junaria, R. (2007). Faktor-faktor yang berhubungan dengan tingkat adopsi petani pada teknologi budidaya padi sawah sistem legowo di Kelurahan Dusun Besar Kecamatan Gading Cempaka Kota Bengkulu. *Jurnal AGRISEP: Kajian Masalah Sosial Ekonomi Pertanian dan Agribisnis*, *6*(1), 1-16.

Yusdianto, H. (2007). *Analisis Tingkat Adopsi Petani Terhadap Teknologi Budidaya Jagung Hibrida (Studi Kasus di Desa Tanjung Kamal*

ZIRAA'AH, Volume 48 Nomor 1, Pebruari 2023 Halaman 84-90 p-ISSN 1412-1468 e-ISSN 2355-3545

Kecamatan Mangaran Kabupaten Situbondo) (Doctoral dissertation, University of Muhammadiyah Malang).