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Determination of Production and Marketing Behaviors of Producers Selling Products to the Turkish Grain Board, (Kırşehir Province Mucur District Micro Field Study)

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ABSTRACT

The aim of this study is to examine the socio-economic characteristics of producers who sell wheat to the Turkish Grain Board (TGB), which is an interventionist organization in the purchase and sale of grain in Türkiye, as well as some of their behaviors regarding production, marketing preferences, and their relations with TGB. The sample of the study consisted of 100 wheat producers in the Mucur district of Kırşehir province. The obtained data were interpreted by converting them into tables, cross-tabulations, and graphs. The data in the cross tables were statistically interpreted using Chi-square analysis. It can be said that producers are not satisfied with TGBs' purchasing practices for some reasons. The most important reason for this is that quality-based purchasing practices have an extremely negative impact on prices. It was determined that they were not satisfied, and this resulted in high price reductions in quality-based purchasing, and as a result, there was distrust in analysis practices. Quality-based purchasing policy is a method that allows wheat quality characteristics to be determined with various devices in a short time. This method, which is decisive in quality classification and product pricing scale, must be explained correctly to producers. Otherwise, the producer 's trust in the TGB may gradually decrease. This can be achieved through initiatives taken by the institution or through various publications and training activities. One of the most important results of this study is that TGBs and decision-makers are more sensitive to local producers. For decision-makers to maintain their influence on the producer, they must carefully examine the details of the processes with an inductive approach, starting from the bottom up. This situation is considered critical in terms of food security.

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Introduction

Wheat is an indispensable food that forms the building block of human nutrition worldwide. Wheat; flour, pasta, semolina, biscuits etc. It is consumed as. In recent years, the demand for wheat has increased significantly because of the pandemic, the Russia-Ukraine war, and the risk of climate events (Anonymous, 2021b). With an increase of 11 million tons in 2020/21, it reached the highest stock amount of 289 million tons in total. China, with a 17% share in the 289 million tons of stock, ranks first, followed by the EU and India, respectively. Türkiye ranked 10th in the world grain rankings with a share of 3% (Anonymous, 2021a). Wheat yield in the 2020/21 season; While there was a decrease in the European Union, Ukraine, the United States, India, and Argentina, an increase was observed in countries other than these countries compared with the previous seasons. In the 2020/21 season, wheat yield was determined to be 3.45 tons/ha, with a decrease of 1.7% (Anonymous, 2021a).

Wheat production, supply, use, trade, and ending stocks between 2017/2022 are shown in Table 1. As shown in Table 1, there has been an increase in grain production worldwide. Wheat production in states such as Russia, Canada, USA, and Brazil increased, and wheat production in states such as the EU, Ukraine, and Argentina decreased (Anonymous, 2020b).

When the world wheat cultivation areas are examined in Figure 1, five major producing countries come to the fore. These are the USA, China, EU, Russia, and India. These countries account for 44.9% of the world 's wheat cultivation area as of 2022. India ranks first, followed by Russia, the EU, China, and the United States.

Table 1. Wheat Grain Market (thousand tons)

Years	2017/18	2018/19	2019/20	2020/21	2021/22
Production	2.694.90	2.647.70	2.712.10	2.772	2.791.30
procurement	3.520.10	3.506.90	3.546.50	3.598.20	3.618.80
Using	2658.9	2.690.30	2.712.40	2.762.10	2.809.60
Trade	423.2	411.30	439.40	476.7	480.30
Expiring Stocks	859.2	834.50	826.20	827.5	822.10

Source: (FAO, 2021)

Table 2. World Wheat Data (thousand tons)

	2017/18	2017/18	2019/20	2020/21	2021/22	Annual rate of change (%)
Area (Thousand Ha)	218.475	215.439	216.654	221.848	223.790	0.9
Yield (Ton/Ha)	3.49	3.4	3.53	3.5	3.53	0.9
Production	762.557	731.552	764.156	776.097	788.978	1.7
Consumption	740.499	733.179	741.805	774.267	785.297	1.4
End of Year Stocks	287.816	284.084	299.439	294.667	294.962	0.1
Export	184.046	174.053	187.880	193.046	199.036	3.1
Import	185.427	176.158	194.876	199.648	202.422	1.4
Export Price ($/Ton)	211	241	219	239	284	19

Source: (Anonymous, 2021b)

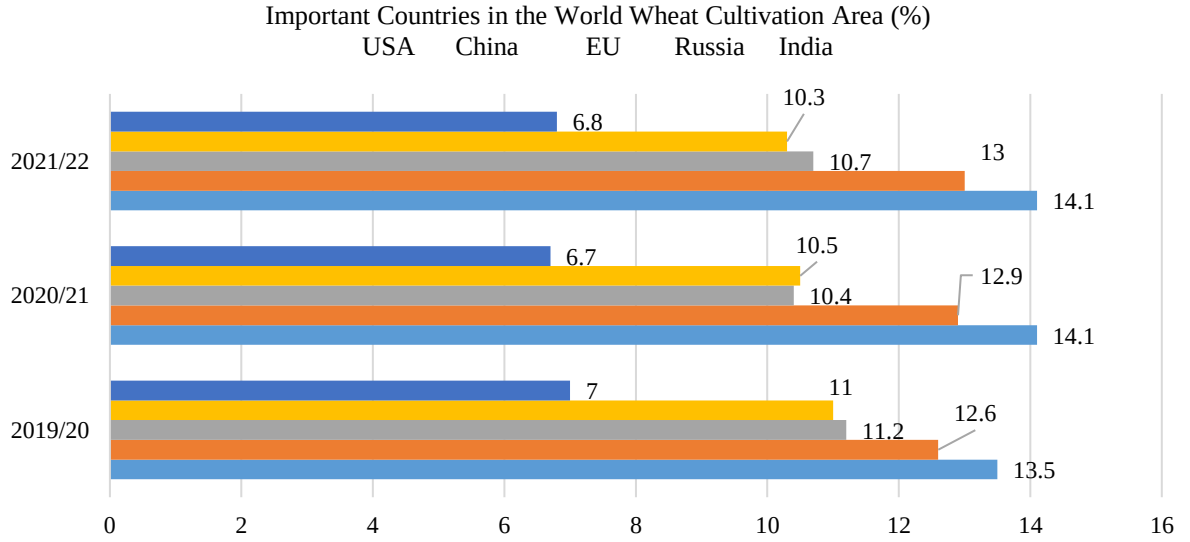

Figure 1. Share of Leading Countries in terms of Wheat Cultivation Areas in the World (Anonymous, 2021b)

It can be said that the leading countries in terms of cultivation area have a say in meeting world wheat demand and price formation. The countries listed in Figure 1 in terms of cultivation areas differ slightly in terms of production amount when their productivity levels are considered. While the largest producer in terms of production amount is China, it is followed by the EU, India, Russia, and the USA (Anonymous, 2021b). This situation may bring about some nativities in terms of the world 's general conjuncture and in today 's conditions where regional integration is negatively differentiated. In this case, Türkiye contributes to the processes with its regulatory and impressive mission due to its geography and strategic location.

Total grain production in 2021/22 is 2.8 billion tons. 28% of the production in question consists of wheat. 41% of grain exports consists of wheat. Russia, the EU, the USA, Ukraine, Canada, Australia, and Türkiye rank first in world wheat exports (Anonymous, 2021b). According to Ankara Commodity Exchange data, world wheat production increased in the 2020/21 season compared with the previous year and reached 763 million tons. Some balance has been achieved as wheat consumption increased in China and decreased in the United States. As the price increase in corn and barley increased the tendency toward wheat, the wheat trade between China and Pakistan in the 2020/21 season increased by 5 million tons compared to the previous year, reaching 189 million tons (Anonymous, 2021a).

Wheat is one of the most traded agricultural products because a significant portion of the world 's wheat volume is produced by certain countries, and wheat is the most consumed grain in the world (Gómez and Devadoss, 2004).

When recent years are examined in wheat imports of countries, it is seen that there has been an upward acceleration, and due to the Pandemic, production decreased in the 2020/21 season and the use of wheat as feed increased. This changed the demand for wheat, and imports increased compared with previous years (Anonymous, 2021a). Countries in international wheat trade are Egypt (13 million tons), Indonesia (10 million tons), China (10.5 million tons), Türkiye (9 million tons),

Algeria (6.5 million tons), Bangladesh (6.5 million tons). tons) and Brazil (6.6 million tons). Russia (about 40 million tons), EU (about 33 million tons), USA (about 25 million tons), Canada (about 23.5 million tons), Australia (about 21 million tons), Ukraine (about 20 million tons), and Argentina (approximately 13 million tons) stated that it is at the forefront in exports (Büyükkılıç, 2021).

When Türkiye 's wheat production in 2003/2018 is examined, it can be said that it is partially similar to world data (Table 6). Türkiye, which has an important place in the world wheat market, accounts for 3.24% of the world wheat economy (İstikbal, 2020). Looking at Table 4, while the cultivated areas in Türkiye have decreased over time since 2003, fluctuations can be seen in production.

According to the data of the Ministry of Agriculture and Forestry of the Republic of Türkiye, despite the negativities experienced in both logistics and supply chain due to the pandemic (COVID-19) seen in the world, the problems experienced did not turn into a food crisis. The increase in demand for wheat due to the pandemic has caused wheat prices to rise. To avoid any problems in food supply during the pandemic period in Türkiye, producers worked non-stop and produced 20.5 million tons, an increase of approximately 8% compared to 2019. In 2020, it amounted to 20.5 million tons, with an increase in approximately 8% compared with the previous year (Anonymous, 2021c).

According to TUIK data for the 2020/21 period, Türkiye 's wheat cultivation areas cover 3.2% of the world. Cereals constitute 70% of the total cultivated area in Türkiye. Wheat takes the first place among grains. Wheat production; In 2020/21, the cultivation area and yield increased by 7.9% to 20.5 million tons (Anonymous, 2021b).

Table 3 shows increases and decreases in the values in the planted area, production, usable production, consumption, and per capita consumption columns between 2009/19.

The Role of the TGB in the Grain Market of Türkiye

TGB was established in 1938 as an organization whose capital belongs to the state, is subject to the provisions of Decree Law No. 233 dated 08/06/1984, has legal personality, and has autonomy in its activities. TGB, which is affiliated with the Ministry of Agriculture and Forestry, is headquartered in Ankara and its capital is 2,550,000,000 TL (Anonymous, 2020a). TGB takes precautions by taking regulatory steps in the market to prevent grain prices from falling and producers from being victimized. It stocks products and sells existing stocks by ensuring balance in the market (Ekmen, 2019).

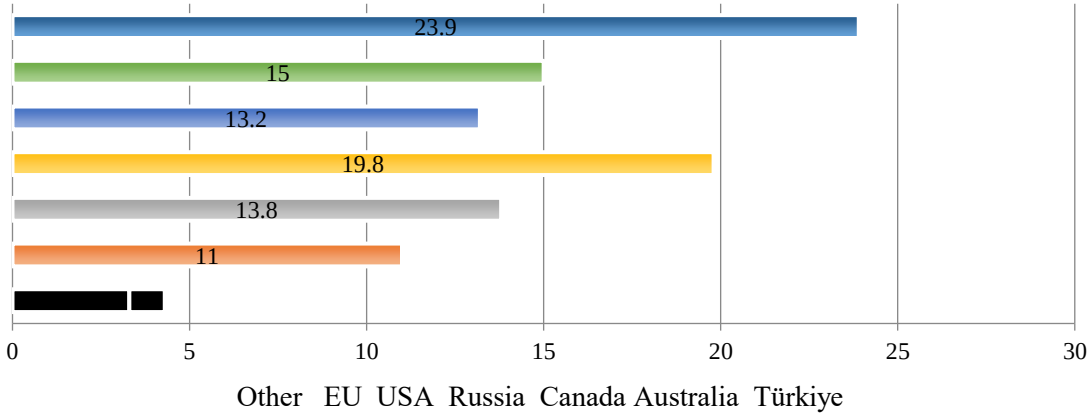

Figure 2. World Wheat Export percentage by Country (2020/21) (Anonymous, 2021b)

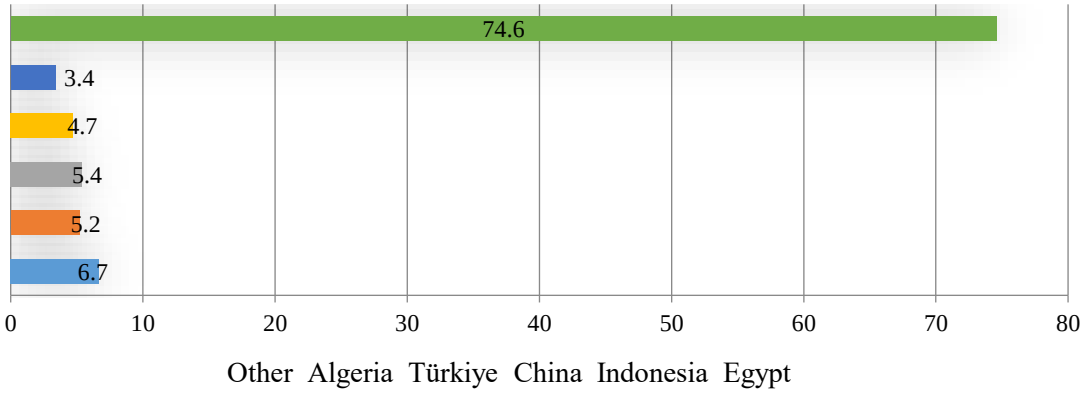

Figure 3. World Wheat Import percentage by Country (2020/21) (Anonymous, 2021b)

Table 3. Türkiye Wheat Cultivated Area, Production, and Consumption Data Between 2009 and2019 (TUIK, 2022)

Years	Cultivated Area (Hectare))	Production (Ton)	Usable Production	Total consumption (ton)	Per capita consumption (kg)	Usage (Ton)
2009	8.100.000	20.600.000	19.467.000	14.494.543	199,8	22.418.007
2010	8.103.400	19.674.000	18.591.930	15.766.287	213,9	22.766.035
2011	8.096.000	21.800.000	20.601.000	17.089.529	228,7	23.825.535
2012	7.529.639	20.100.000	18.994.500	17.042.330	225,4	23.024.199
2013	7.772.600	22.050.000	20.837.250	16.329.709	213	25.022.439
2014	7.919.209	19.000.000	17.955.000	15.604.364	200,8	23.735.716
2015	7.866.887	22.600.000	21.357.000	14.399.259	182,9	25.466.527
2016	7.671.945	20.600.000	19.467.000	14.490.08	181,5	24.053.405
2017	7.668.879	21.500.000	20.317.500	-	174,6	26.427.069
2018	7.299.271	20.000.000	18.900.000	-	179,4	25.367.562
2019	6.846.327	19.000.000	17.955.000	-	192,8	28.748.317

Table 4. Global Wheat Production and Türkiye (Million Tons / Hectare) (İstikbal, 2020)

Years	World Production	Total Cultivated Area	Production of Türkiye	Cultivated Area of Türkiye	Türkiye's share in Production	Türkiye's share in the Cultivated Area
2003	549.9	207.4	19	9.05	3.45	4.36
2005	627	221.6	21.5	9.22	3.42	4.16
2007	606.5	215.4	17.2	7.95	2.83	3.69
2009	683.6	225.1	20.6	8.02	3.01	3.56
2011	696.8	220.2	21.8	8.06	3.12	3.66
2013	710.3	218.8	22	7.75	3.09	3.54
2015	741.6	223.4	22.6	7.84	3.04	3.5
2016	748.3	219	20.6	7.6	2.75	3.47
2017	773.4	218.4	21.5	7.66	2.77	3.5
2018	734	214.2	20	7.28	2.72	3.39

While the TGB itself provides the purchase and sale of existing products, the organizations active with the TGB are cooperatives, and Agricultural Credit Cooperatives and Beet Growers Cooperatives (Pankobirlik) play an important role in the purchase, sale, and storage of grain (Ekmen, 2019). In addition to cooperatives, licensed warehouses have taken their place in the market since 2011 and purchase and store grain on behalf of the TGB. Licensed Warehouse was first established on 26/2/2010, in partnership with the Union of Chambers and Commodity Exchanges of Türkiye, with 50% shares in TGB-TOBB Agricultural Products Licensed Warehousing Industry and Trade Joint Stock Company. It is an organization with a capital of 100 million, headquartered in Ankara, in which the Product Specialization Stock Exchange also participates with 15% shares, by the Decision of the Council of Ministers dated 06/04/2017 and numbered 2017/9986 (Anonymous, 2020a).

78% of the purchases made in 2020 were made as ELÜS through TÜRB (Turkish Product Specialization Exchange). While TGB purchases within its own structure by appointment, all purchases in licensed warehouses are made without an appointment. A purchase price is given for each class of product. It purchased products up to 50% more than the production numbers of producers registered with FRS (Anonymous, 2020b).

Considered as a strategic product in terms of its production and usage areas, wheat's shockability allows taking action against possible risks. Although its production depends on natural conditions, it is directly affected by country policies because of its stockability. Country policies interact with producer behavior. Therefore, determining the behavior of producers at the micro level is considered important. In this research, the socioeconomic characteristics, preferences, and decisions in wheat production and marketing processes of wheat producers who deliver products to TGB through Licensed Warehouse A.Ş. in Mucur district of Kırşehir province, located in a strategically important region (Central Anatolia Region of Türkiye), are examined. 80% of the economy of Mucur District of Kırşehir province consists of agriculture. Wheat, barley, beet and sunflower etc. plantings are occurring. There are 803,627 ha of agricultural land as irrigated land (779,567 ha) and irrigated land (24,060 ha). These include 5,000 ha of vegetable-planted area, 3,000 ha of fruit-planted area, and 3,500 ha of vineyards. There are 500,000 ha of field and 110,000 ha of fallow land. The number of farmers registered with Farmer Recording System (FRS) is 3,500 (Anonymous, 2022a).

Material and Method

The main material of the study consists of surveys conducted with wheat producers who sell products to the TGB in the Mucur district of Kırşehir province.

In the research, it was determined that production was mainly performed with rainfed farming systems in terms of the geographical features and business typologies of the region. Producers mostly evaluate the products they produce in TGB and licensed warehouses. During the 2021 production period, the number of producers selling products to TGB through Licensed Warehouse Inc. (LİDAŞ) was 343 businesses (Kırşehir TGB records, 2021). Among the businesses in question, 114 producers (30% of the population) were purposely included in the sample. Among the surveys obtained from 114 producers, 14 surveys that were thought to be incomplete/erroneous were excluded, and the research was conducted with data collected from 100 producers. The Purposeful Sampling

Method is frequently used in agricultural economics studies (Çiçek and Erkan, 1996). The obtained data were interpreted by converting them into tables and graphs. Some variables deemed important were made into cross-tabulations, and a statistical chi-square analysis was performed. Cross tables are made according to the business size groups. Business size groups were planned to show the most appropriate distribution within the sample volume, and 0–65 da was expressed as the first group, 66–140 da as the second group, and 141-+ da was expressed as the third group.

Research Findings

Socio-Demographic Characteristics of Producers

When the sociodemographic characteristics of the producers were examined, it was determined that all of them were men, the majority of them were high school graduates in terms of education, there were more women in the household, and all of them had health insurance. It can be said that the grain production experience is approximately 21 years.

Factors affecting producers' wheat production decisions for the next year are given in Table 6. When the table is examined, it is determined that while the first group of enterprise size groups shapes the production decision according to the previous year 's wheat prices, the second and third enterprise size groups shape their production decisions according to the previous year's yield. According to the chi-square analysis, no statistically significant difference was observed in terms of factors affecting the determination of production decisions by business size groups. According to Aydın and Unaktan (2016), producers primarily base their decisions on their own experience and then take into account the experiences of experts. In the study by Doğan and Kan (2018), they investigated the effects of changes in temperature and precipitation in Türkiye between 1997 and 2016 on wheat yield. According to the results of their analysis, the yield was inversely proportional to temperature and had a positive relationship with precipitation. They stated that productivity can be increased by choosing the appropriate variety (Doğan and Kan, 2018).

Table 5. Socio-Demographic Characteristics of Producers

	n	%
Gender		
Male	100	100,0
Age(x̄)	47.58	
Education		
Literate	2	2.0
Primary School	10	10.0
Secondary School	19	19.0
High School	37	37.0
College	11	11.0
University	21	21.0
Total	100	100
Household Size (Excluding Business Owner)		
Male	85	36.15
Female	150	63.85
Health Assurance		
Agriculture Bağ-Kur	26	26.0
Pension Fund	14	14.0
SSK	60	60.0
Total	100	100
Annual Agricultural Income (x̄-₺)	176670.00	
Annual non-Agricultural Income (x̄-₺)	58486.84	
Agricultural Experience (x̄-year)	20.61	
Cereal Production Experience (x̄-year)	20.59	

Table 6. Factors Effective in Determining Wheat Production Decision One Year Ago

			WPP	AYP	NFM	BBA	AGNP
Business Size Groups	1. Group	n	16	14	7	16	5
		%	30.77	25.45	41.18	57.14	38,46
	2. Group	n	19	22	4	8	3
		%	36.54	40.00	23.53	28.57	23,08
	3. Group	n	17	19	6	4	5
		%	32.69	34.55	35.29	14.29	38,46
Total		n	52	55	17	28	13
		%	100	100	100	100	100
χ^2=37.918			P:0.217		P>0.05		

WPP: Wheat Price in the Previous Year; AYP: According to the Yield of the Previous Year; NFM: Newly-Formed Marketing Channels; BBA Not Being Affected by Anything; AGNP: According to the Guidance of Neighboring Producers; *Exceeds 100% because more than one option is marked.

Table 7. Characteristics Preferred by Producers in Wheat Varieties They Plant by Business Size Groups

	1. Group		2. Group		3. Grpup		Test and p Value
	n	%	n	%	n	%	
Certification of the Wheat Seed							χ^2=4.240 p=0.132
Yes	15	41.7	14	41.2	6	20.0	
No	21	58.3	20	58.8	24	80.0	
When choosing a variety, it is important that the variety I plant has a high yield.							χ^2=2.652 p=0.241
I agree	5	13.9	1	2.9	2	6.7	
Absolutely I agree	31	86.1	33	97.1	28	93.3	
The Quality of the Variety I Will Plant is Important in Variety Selection							χ^2=2.620 p=0.280
I agree	5	13.9	1	2.9	3	10.0	
Absolutely I agree	31	86.1	33	97.1	27	90.0	
The Market Selling Price of the Variety I Will Plant is Important in Variety Selection							χ^2=1.036 p=0.671
I agree	3	8.3	1	2.9	2	6.9	
Absolutely I agree	33	91.7	33	97.1	27	93.1	
When choosing a variety, it is important that the variety I plant is easy to market.							χ^2=2.563 p=0.836
I'm undecided	1	2.8	0	0.0	0	0.0	
I agree	2	5.6	3	8.8	1	3.3	
Absolutely I agree	33	91.7	31	91.2	29	96.7	
I Prefer to Plant the Variety I Am Used to							χ^2=8.475 p=0.306
I strongly disagree	0	0.0	0	0.0	1	3.3	
I do not agree	0	0.0	1	2.9	0	0.0	
I'm undecided	1	2.8	2	5.9	5	16.7	
I agree	8	22.2	5	14.7	5	16.7	
Absolutely I agree	27	75.0	26	76.5	19	63.3	
The variety I choose is resistant/tolerant of diseases and pests.							χ^2=1.888 p=1.000
I'm undecided	1	2.8	0	0.0	0	0.0	
I agree	5	13.9	4	11.8	4	13.3	
Absolutely I agree	30	83.3	30	88.2	26	86.7	
It is Important to Be More Resistant to Temperature							χ^2=0.555 p=1.000
I agree	2	5.6	1	2.9	1	3.3	
Absolutely I agree	34	94.4	33	97.1	29	96.7	
It is Important to Be Resistant to Low Water							χ^2=1.405 p=0.508
I agree	2	5.6	1	2.9	3	10.0	
Absolutely I agree	34	94.4	33	97.1	27	90.0	
It is Important to Use Less Fertilizer							χ^2=1.597 p=0.939
I'm undecided	1	2.8	0	0.0	1	3.3	
I agree	4	11.1	5	14.7	4	13.3	
Absolutely I agree	31	86.1	29	85.3	25	83.3	
Seed Price of the Variety I Will Prefer is Important for My Variety Preference							χ^2=4.229 p=0.375
I'm undecided	3	8.3	2	5.9	0	0.0	
I agree	7	19.4	5	14.7	9	30.0	
Absolutely I agree	26	72.2	27	79.4	21	70.0	
The Recommendation of the Place I Purchase the Seeds is Important in Variety Selection							χ^2=1.330 p=0.886
I'm undecided	1	2.8	2	5.9	2	6.7	
I agree	12	33.3	12	35.3	12	40.0	
Absolutely I agree	23	63.9	20	58.8	16	53.3	
I Prefer Varieties whose Seeds Are Easily Available							χ^2=11.847 p=0.009*
I'm undecided	2	5.6	3	8.8	0	0.0	
I agree	4	11.1	5	14.7	13	43.3	
Absolutely I agree	30	83.3	26	76.5	17	56.7	
It is Important to Have the Type Included in the TGB's Procurement Table							χ^2=5.308 p=0.491
I do not agree	0	0.0	1	2.9	0	0.0	
I'm undecided	2	5.6	3	8.8	6	20.0	
I agree	10	27.8	10	29.4	8	26.7	
Absolutely I agree	24	66.7	20	58.8	16	53.3	
Varieties for which TGBs Give High Prices According to Quality Analysis Are Important							χ^2=8.649 p=0.066
I'm undecided	1	2.8	3	8.8	8	26.7	
I agree	9	25.0	9	26.5	7	23.3	
Absolutely I agree	26	72.2	22	64.7	15	50.0	

83.3% of landowners with small wheat cultivation areas prefer varieties whose seeds are easily available, which is definitely effective in selection, 76.5% of those with medium land areas prefer varieties whose seeds are easily available, which is definitely influential in selection, 56% of large landowners prefer varieties whose seeds are easily available. It was observed that 7 of them preferred varieties whose seeds were easily available, which was definitely effective in the selection. According to the results of the chi-square analysis, there was a statistically significant relationship between the size of the wheat planted land and the preference for varieties whose seeds are easily available ($p < 0.05$).

38.9% of the owners of small lands with small wheat cultivation area consider it essential that the region of the wheat variety affects the price when selling wheat, 29.4% of the owners of medium land see it as crucial that the region of the wheat variety affects the price when selling wheat, and 29.4% of the owners of large land areas consider it essential that the region of the wheat variety affects the price when selling wheat. It was stated that 40.0% of the owners considered it unimportant that the region of the wheat variety affects the price when selling wheat. According to the results of the chi-square analysis, there was a statistically significant different between the size of the land planted on wheat and the state of thinking that the region of the wheat variety affects the price when selling wheat ($p < 0.05$).

44.4% of the owners of small lands with small wheat cultivation area consider it essential that the glassy grain ratio affects the price of wheat when selling, 61.8% of the owners of medium land see it as crucial that the glassy grain ratio affects the price when selling wheat, and 86% stated that 7.7% of them considered it essential that the glassy grain ratio affects the price of wheat. According to the results of the chi-square analysis, there was a statistically significant different between the size of the land planted on wheat and the belief that the glassy grain ratio affects the price of wheat when sold ($p < 0.05$).

The findings obtained according to some provisions regarding TGBs are as follows. 25.7% of the owners of small lands with wheat cultivation areas agreed with the statement that TGBs' purchasing and price policies affect their production decisions, 25.7% did not agree, and 32.4% of the owners of medium land areas agreed with the statement that TGBs' purchasing and pricing policies affect their production decisions. It was observed that 32.4% of the large landowners agreed with the statement that TGB's purchasing and price policies affect the production decision, and 30.0% strongly agreed with the statement that TGB 's purchasing and price policies affect the production decision. According to the results of the chi-square analysis, there was a statistically significant relationship between the size of the wheat planted land and the level of agreement with the statement that TGB's purchasing and price policies affect the production decisions ($p < 0.05$). No statistically significant different was found between the size of the wheat cultivated land and other characteristics and expressions related to the wheat market ($p > 0.05$).

Kan et al. (2017) found that their resistance to diseases, cold, and drought, as well as their suitability for family consumption (especially taste and taste), straw yield, and good straw quality are the most important reasons for choosing local wheat populations. Animal production is an important factor in the continuity of local wheat varieties in the region, and straw yield is more prominent than wheat yield in some regions. Tasci et al. (2022) in a study based on a 5-point Likert scale; They stated that the criteria that farmers think affect the sales of durum wheat are freedom from foreign matter, glassiness rate, hectoliter, semolina color, protein rate, moisture, and gluten quality, which have a significant impact on determining prices, and they found it to be crucial to have less foreign matter (Taşçı et al.). 2022).

In the study conducted by Özbek and Fidan (2013), in light of the analyzes made by the Konya Commodity Exchange and the surveys filled out by the producers, they determined that there were product losses and price reductions in wheat varieties due to diseases and pests (Özbek and Fidan, 2013). Tasci et al. (2020) conducted a study with producers producing durum wheat in the Yozgat region and listed the wheat variety as easily available, familiar, and recommended among the criteria preferred by the producers (Taşçı et al. 2020). James and Alston (2002) investigated policies in wheat fields in terms of yield and quality. According to the data they obtained, yield and quality indices were statistically significant in the distribution of wheat produced within quality classes (James and Alston, 2002).

The distribution of the effects of TGB's transition to the quality-based purchasing system in 2011 and the determination of grain prices on the producers of the producers participating in the research is given in Table 9. In the TGB's purchasing process using the quality-based protein analysis method, it was determined that 64 businesses in all groups did not make any changes in terms of business size. According to the results of the chi-square analysis, there was a statistical difference at the level of $p < 0.10$ in terms of business size groups compared with the quality-based purchasing system. According to the research of Tarhan and Dellal (2021), they stated that the TGB started to implement pricing practices based on protein-based quality criteria in wheat in 2011, causing the price of quality wheat to start trading at a higher value compared to other wheat (Tarhan and Dellal, 2021).

When the reasons of producers for wheat farming are examined, it can be said that there is no sales problem, the land is not suitable for growing other products, and it is an inherited habit. Regarding the wheat planted, it was observed that 24% preferred the generous type, 15% preferred the variety type, 14% preferred the Pehlivan wheat variety, and 11% preferred the Sönmez wheat variety. It has been determined that 60% of the producers participating in the research use their own seeds, while 46% supply them from the Agricultural Credit Cooperative, 22% from seed dealers, 59% use certified seeds and change their seeds every 3-4 years. It has been observed that when choosing wheat to plant, producers pay attention to high yield, quality, market sales price, ease of marketing, planting the variety they are used to, resistance to diseases and pests, water scarcity, low fertilizer need, and seed price The criteria that producers think affect the price when selling their wheat were examined and discussed in percentages. It has been observed that TGB is efficient and effective in determining purchase prices, that it has an impact on production decisions, that they are not satisfied with appointment working systems, and that they are satisfied with

payment planning. To be informed about innovations in agricultural production, producers mostly wanted to gather and provide training in provincial/district agricultural directorates and through the Internet and mobile phone applications. Producers sell their products to licensed warehouses, traders, and flour factories outside the TGB.

Table 8. Information on Wheat Marketing by Producers ' Business Size Groups

	1. Group		2. Group		3. Group		Test and p Value
	n	%	n	%	n	%	
Don't Have Trouble Marketing Wheat							χ^2=2.051 p=0.362
Yes	21	58.3	14	41.2	15	50.0	
No	15	41.7	20	58.8	15	50.0	
When Selling Wheat, DoNot Think that Wheat's Type Affects Its Price							χ^2=6.235 p=0.280
Insignificant	1	2.8	0	0.0	0	0.0	
Normal	0	0.0	1	2.9	1	3.3	
Important	11	30.6	6	17.6	11	36.7	
Critical	24	66.7	27	79.4	18	60.0	
When Selling Wheat, DoNot Think that the Region of the Wheat Variety Affects Its Price							χ^2=17.333 p=0.022*
Very unimportant	2	5.6	4	11.8	5	16.7	
Insignificant	6	16.7	5	14.7	12	40.0	
Normal	5	13.9	8	23.5	5	16.7	
Important	9	25.0	7	20.6	0	0.0	
Critical	14	38.9	10	29.4	8	26.7	
When Selling Wheat, DoNot Think that Protein Ratio Affects Its Price							χ^2=1.372 p=0.585
Important	4	11.1	3	8.8	1	3.3	
Critical	32	88.9	31	91.2	29	96.7	
When Selling Wheat, DoNot Think that Humidity Rate Affects Its Price							χ^2=4.079 p=0.775
Insignificant	1	2.8	0	0.0	0	0.0	
Normal	0	0.0	1	2.9	2	6.7	
Important	6	16.7	5	14.7	5	16.7	
Critical	29	80.6	28	82.4	23	76.7	
When Selling Wheat, DoNot Think that Hectolitre Affects Its Price							χ^2=0.345 p=0.917
Important	3	8.3	4	11.8	3	10.0	
Critical	33	91.7	30	88.2	27	90.0	
When Selling Wheat, DoNot Think that the Concentration of Foreign Matter Affects Its Price							χ^2=4.924 p=0.290
Normal	3	8.3	1	2.9	6	20.0	
Important	10	27.8	10	29.4	8	26.7	
Critical	23	63.9	23	67.6	16	53.3	
When Selling Wheat, DoNot Think that Semolina Color Affects Its Price							χ^2=9.351 p=0.107
Insignificant	1	2.8	0	0.0	0	0.0	
Normal	9	25.0	5	14.7	3	10.0	
Important	12	33.3	11	32.4	5	16.7	
Critical	14	38.9	18	52.9	22	73.3	
When Selling Wheat, DoNot Think that Vitreous Grain Ratio Affects Its Price							χ^2=15.640 p=0.006*
Insignificant	1	2.8	0	0.0	0	0.0	
Normal	8	22.2	4	11.8	0	0.0	
Important	11	30.6	9	26.5	4	13.3	
Critical	16	44.4	21	61.8	26	86.7	
When Selling Wheat, DoNot Think that Gluten Quality Affects Its Price							χ^2=8.823 p=0.166
Insignificant	2	5.6	0	0.0	4	13.3	
Normal	8	22.2	10	29.4	7	23.3	
Important	14	38.9	8	23.5	5	16.7	
Critical	12	33.3	16	47.1	14	46.7	
When Selling Wheat, DoNot Think that Sunk Sunk Destruction Affects Its Price							χ^2=4.480 p=0.724
Insignificant	1	2.8	0	0.0	0	0.0	
Normal	0	0.0	1	2.9	0	0.0	
Important	3	8.3	3	8.8	1	3.3	
Critical	32	88.9	30	88.2	29	96.7	
When Selling Wheat, Do Not Think that the Sale Date Affects Its Price							χ^2=6.647 p=0.559
Very unimportant	0	0.0	2	5.9	0	0.0	
Insignificant	2	5.6	1	2.9	0	0.0	
Normal	6	16.7	7	20.6	4	13.3	
Important	10	27.8	7	20.6	12	40.0	
Critical	18	50.0	17	50.0	14	46.7	

Table 9. The distribution of the Effect of TGB 's Transition to a Quality-Based Procurement System in 2011 and Determination of Grain Prices in this Way on Producers

			Changing the Varieties Used	Making Changes in the Cultivation Techniques	Not Making Any Changes	Not Being Aware of this Issue	Total
Business Size Groups	1. Group	n	2	2	23	9	36
		%	11.76	40.00	35.94	64.29	36.00
	2. Group	n	7	2	20	5	34
		%	41.18	40.00	31.25	35.71	34.00
	3. Group	n	8	1	21	0	30
		%	47.06	20.00	32.81	0.00	30.00
Total		n	17	5	64	14	100
		%	100	100	100	100	100.00
χ^2=14.741			P:0.064		P<0.10		

Conclusions and Recommendations

It has been observed that producers mainly plant wheat because of the influence of geography on their lands and the lack of irrigation facilities. Apart from wheat, the first product is the cultivation of barley, followed by cultivating sugar beet and chickpeas. It has been observed that 62% of the cultivation areas of these secondary products are property, 19% are rented, 71% are dry land, and 28% are irrigated land. It was determined that 63% of wheat lands were dry and 31% were irrigated. It can be stated that 37% of irrigated lands use sprinkler irrigation as an irrigation method. It was observed that in the year following the year in which they produced wheat, 54% of them planted barley, while 18% of them left fallow and preferred 2 or 3 years as an alternation year.

Based on the last five years, it has been determined that while a decrease in the cultivation areas of one-third of the producers has been observed, there has been no change in the cultivation areas of the majority. When we look at the producers' use of base, top, and leaf fertilizer, we see that they use bottom fertilizer (in October), top fertilizer (in March), and leaf fertilizer. It has been observed that while small land owners with small cultivation areas consider the region of the wheat variety as important when selling varieties whose seeds can be easily found, medium land owners consider the region of the wheat variety with easily available seeds, while large land owners prefer varieties with easily available seeds, which is definitely effective in the selection. They considered the region of the wheat variety unimportant and stated that the TGB's purchasing policies affected production decisions. One of the most important results of the research is that they are not satisfied with the TGB's purchasing practices for several reasons. The most important of these reasons has been determined that prices are reduced a lot in quality-based purchasing, and as a result, there is distrust in analysis applications. Quality-based purchasing system is the quality determination tests such as determining the protein ratio of the wheat brought by the producer using technological methods, determining the moisture level, and revealing its glassy properties. Price reductions resulting from this extremely rational practice are perceived by the producer as the TGB's price reduction policy. It is thought that explaining this situation to the producer with the right methods will have an impact on the trust in the institution. TGB is an interventionist organization that directs the grain market in Türkiye. The state is the biggest actor in market regulation and plays a role in creating producer and consumer balance by considering all dynamics. One of the most important results of this study is that the TGB and the Republic of Türkiye are more sensitive to local producers. Otherwise, it can be said that TGBs' trust in grain producers will decrease and their tendency to sell products to TGBs will decrease over time. It can be emphasized that the power of a TGB without a producer may become ineffective in the market over time.

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