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EQUIPMENT OF MAŁOPOLSKA FARMS WITH AGRICULTURAL TRACTORS OF CHOSEN BRANDS

Summary

The changes in Malopolska farms equipment with chosen tractor brands were presented. The study involved 356 farms, located in Malopolska region, in which 855 tractors were reported. The analyzes demonstrated that Ursus tractors purchase dominated several years ago, while the last years are characterized by a large variety of purchased equipment. The most commonly bought brands of tractors in the examined farms include Ursus, Zetor, New Holland, Massey Ferguson and John Deere. These brands account for over 76% of purchased tractors.
***Key words**: agricultural technology, agricultural tractors, brand, machinery park*

WYPOSAŻENIE MAŁOPOLSKICH GOSPODARSTW W CIĄGNIKI ROLNICZE WYBRANYCH MAREK

Streszczenie

Przedstawiono zmiany wyposażenia małopolskich gospodarstw w ciągniki rolnicze wybranych marek. Badania dotyczyły 356 gospodarstw, zlokalizowanych na terenie Małopolski, w których odnotowano 855 ciągników. Przeprowadzone analizy wykazały, że o ile przed kilkunastu laty dominowały zakupy ciągników marki Ursus, to ostatnie lata cechują się znaczną różnorodnością nabywanego sprzętu. Najczęściej kupowane marki ciągników w badanych obiektach to: Ursus, Zetor, New Holland, Massey Ferguson oraz John Deere. Wymienione marki stanowią ponad 76% zakupionych ciągników.
***Słowa kluczowe**: technika rolnicza, ciągniki rolnicze, marka, park maszynowy*

1. Introduction

Proper management of the farm requires suitably equipped machinery park. The machinery park equipped with too few machines does not allow to perform the field work on one's own and in specified time. On the other hand, too extensive set of machines generates unnecessary costs, which are borne by the farm [1, 7]. Buying tractors and machines, the farmers are guided by various motivations, not always rational and technologically or economically justified [8]. Over the years, tractors of only selected brands, such as Ursus, Zetor, Massey Fergusson or MTZ, were available in our country. An appearance of new companies on the market at the end of the last century resulted in an increased purchase of new and remarketed equipment, mostly imported from Western Europe. As a result, modern tractors and agricultural machinery appeared on the Polish farms. In addition, older tractors and machines imported from abroad and sold by farmers who purchased newer equipment were bought on the secondary market [4, 5]. The volume of purchases was significantly affected by the availability of external funds, mainly within SAPARD and RDP programs [2, 3, 6].

2. Material and Methods

The study covered 356 farms located in Malopolska region. The information was collected in the years 2008-2014 and concerned 855 tractors owned by the farmers. Purchase of the equipment was realized using own farmers' means and external funds, mostly obtained under the RDP program. The data were divided into the area groups depending on the area of the farm and the year groups – depending on the year of machine purchase (the last year of the study was adopted as the base year).

Table 1 presents the number of tractors in particular area groups and year groups. Analysis involved the share of each brand in years, year groups, and area groups.

Table 1. Number of tractors in area groups and year groups
Tab. 1. Liczba ciągników w grupach obszarowych i grupach lat

		Year groups					
		up to 5	6–10	11–15	16–20	above 20	in total
Area groups	up to 5.00	27	5	3	6	26	67
	5.01–10.00	138	19	12	20	104	293
	10.01–20.00	153	28	7	15	98	301
	20.01–50.00	47	14	10	8	43	122
	above 50.00	29	13	4	1	25	72
	In total	394	79	36	50	296	855

Source: own work / Źródło: opracowanie własne

3. Results

Figure 1 presents the share of individual brands of tractors. Ursus tractors accounted for as much as 35% in the machinery park of the examined farms. A significant share was also noted for Zetor (13%), New Holland (12%), Massey Ferguson (9%) and John Deere tractors (7%). These brands were included in further analyzes. In total, as many as 26 brands of tractors were reported in the examined farms.

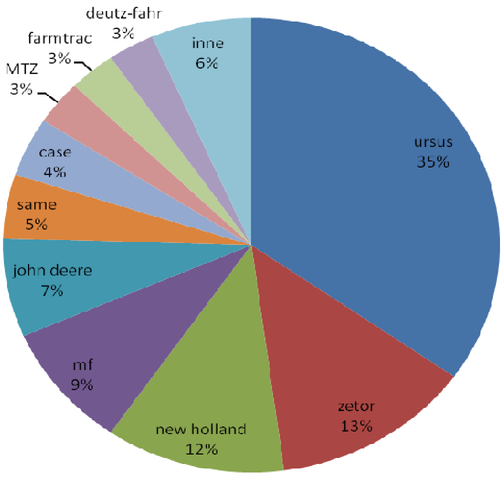

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Fig. 1. Share of chosen brands of tractors
Rys. 1. Udział wybranych marek ciągników

Figures 2 and 3 present the shares of selected brands of tractors in year groups, and area groups. Ursus tractors purchase was predominant in the examined farms in the group 11 years and earlier. In previous year groups, the share of this group exceeded 75%, and Massey Fergusson tractors constituted the only significant competition. Subsequent years were characterized by a decline in Ursus tractors purchase. Their place was gradually occupied by Zetor (27% in the period 6-10 years, and 17% in the last period), and New Holland tractors (10 and 23%, respectively). The availability of RDP funds, as well as a more differentiated offer of the suppliers, caused in the last years of study that the farmers chose many different brands, as evidenced by the fact that the position "other" constitutes up to 39%.

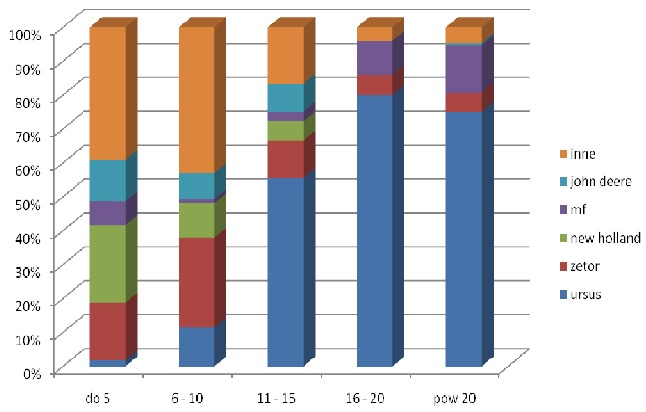

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Fig. 2. Share of chosen brands of tractors in year groups
Rys. 2. Udział wybranych marek ciągników w grupach lat

A gradual increase in the share of New Holland tractors with an increasing farm area can be observed in the area groups. In the biggest farms, this share reaches 38%. The opposite, though not as strong tendency, can be noted in relation to Ursus brand. A gradual decrease in the diversity of tractor brands with an increasing area of the farm, proves that owners of smaller farms are less attached to the brand than it is observed in case of larger acreage. It is interesting, that Zetor and John Deere brands demonstrated the largest share in medium farms, and this second brand was not observed at all in the small farms.

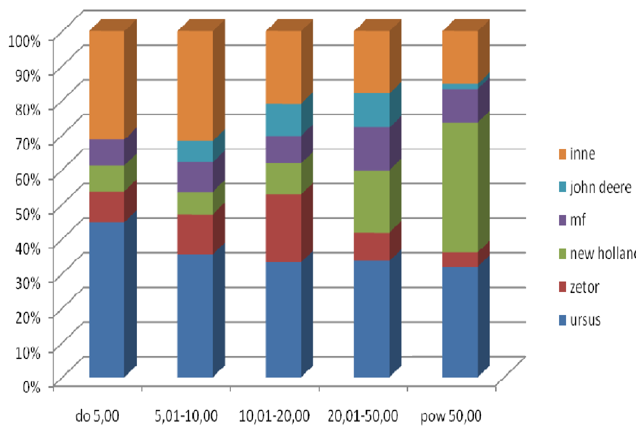

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Fig. 3. Share of chosen brands of tractors in area groups
Rys. 3. Udział wybranych marek ciągników w grupach obszarowych

Figure 4 presents the number of tractors purchased in the examined farms in particular years. The trend line was indicated on the chart as a moving average for a period of 5 years. A significant increase in tractors purchase in last years of the study was due to investment funds supported by RDP implementation in the examined farms.

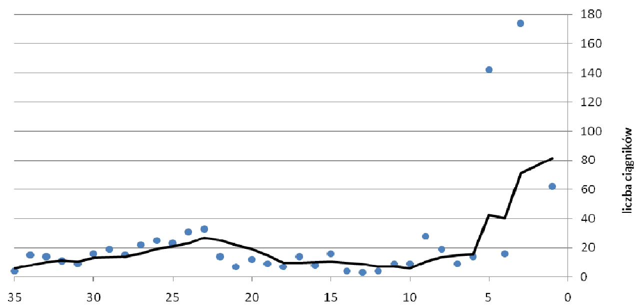

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Fig. 4. Number of tractors in particular years
Rys. 4. Liczba ciągników w latach

The share of selected brands of tractors in particular years is presented in Figure 5. The trend line was indicated on the chart for each brand as a moving average for a period of 5 years.

As in the case of year groups, a gradual decrease in Ursus brand share, which initially was the only one in the farms equipment, can be observed. It is worth to note an increase in the share of Massey Ferguson brand caused by

MF235 and MF255 tractors, then the fall, and increase in the share caused by new designs of this company. Also a gradual market conquering by Zetor tractors can be observed, which appeared 31 years ago in the examined farms, and their share decrease was noted only in the last period, when the predominance of Western brands purchase was observed. New Holland and John Deere tractors started to gain Malopolska market relatively recently, but their share in the latest purchases is considerable.

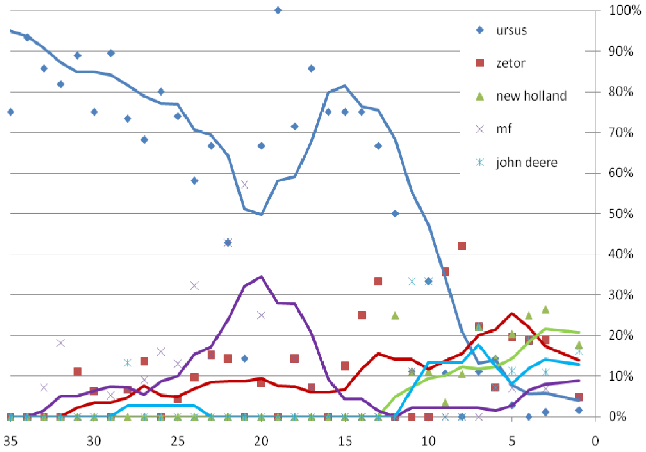

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Fig. 5. Share of selected brands of tractors in particular years
Rys. 5. Udział wybranych marek ciągników w latach

4. Summary

Polish accession to the European Union structures and the emergence of the possibility to apply the external funds, such as SAPARD and RDP, resulted in a change in the structure of agricultural tractors purchase. Large selection of suppliers results in a greater variety of purchased equipment, however, a few dominant brands can be distinguished. While small farms decide to buy tractors of different brands, the large farms prefer to purchase tractors from few reliable manufacturers they trust. This mainly applies to tractors with higher power, although machinery park equipping with smaller tractors is also noted in large farms. An appearance of different brand products on the market usually results in prices reduction. In the case of tractors and agricultural machines, such regularity does not occur, which is caused by the availability of external funds. Thus the only benefit for farmers consists in the possibility of the choice of the right equipment, in which the selection criterion will not be only the power of purchased tractor.

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