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THE ROLE OF FIXED ASSETS IN THE FORMATION OF ADDED VALUE IN GRAIN PRODUCTION

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In conditions of rapid scientific and technical progress in the agricultural sector, the use of progressive technologies of cultivation of agricultural crops, including in grain production, the provision of the agricultural enterprises with the corresponding systems of machines gains importance. It depends on the efficiency of production, and magnitude and structure of added value.

Problems of agricultural production provision, including grain production, with safe material-technical basis of the rehabilitation and modernization of fixed assets and determining their influence on the formation of expenses and added value were considered in scientific works of S.I. Demyanenko, Y.A. Mesel-Veselyak, P.T. Sabluk, M.I. Khorunzhyy and others. However these issues, especially with regard to the formation of added value for intensive resource-saving technologies of cultivation of crops, are insufficient studied, therefore require further research.

The purpose of this article is to determine the impact of the availability of fixed assets of grain production on the size and structure of added value.

The methodology of the study. Scientific studies were carried out using the following methods: monographic, economic and statistics and abstract-logical.

The results of the research. Added value in grain production is one of the important indicators of the economic efficiency. The magnitude and structure of added value depends on many factors, one of which is providing technological process of fixed assets. Provision of agricultural enterprises in Ukraine by agricultural machinery over the last two decades has essentially decreased (table. 1). In particular, the number of tractors for this period decreased by two thirds per 1000 ha of arable land, or 42.9%, although the average power of one tractor, on the contrary, increased by 36.1%. The number of grain harvesters for the specified period decreased in twice per 1000 ha of sown area of grain without corn. If we consider the support of agricultural enterprises by maize harvester combines, the situation is even more complicated.

In 2011, there were 2.3 thous. units of these machines, 15.0% from the rate for 1991. Of course, modern combine harvesters are universal and can harvest not only spiked grain crops, and corn after grain, therefore, the proportion of corn harvesters objectively decreases. Per 1000 hectares in 2011 remained one combine of such type.

In the farms of the population, there is an opposite tendency to the provision of agricultural machinery (table. 2). The number of combine harvesters in 2011 compared to the 2000 in particular category of farms increased by 11 times and reached 22 thousand pieces. Increases the number of tractors. During the analyzed period it increased by 77.2%. In the farms of the population, mini-tractors and tillers

are increasingly popular. In 2011 this type of machinery amounted 65 thousand pieces.

1. Agricultural machinery in agricultural enterprises of Ukraine
(the end of year, thsd. pcs.)

Index	1991	2000	2005	2008	2009	2010	2011	2011 in% to 1991
Tractors	497,3	318,9	216,9	177,4	168,5	151,3	147,1	29,6
per 1000 ha of arable land, pcs	14	11	11	9	9	8	8	57,1
Tractors engines' power, thsd. kW	31423	20611	14792	12929	12466	12557	12656	40,3
The average tractors engine power, kW	63,2	64,7	68,2	72,9	74,0	83,0	86,0	136,1
Combine harvesters	105,2	65,2	47,2	39,1	36,8	32,8	32,1	30,5
per 1000 ha of grain sown area (without maize), pcs	8	6	5	4	3	4	4	50,0
Maize harvester combines	15,3	7,9	4,8	3,2	2,9	2,5	2,3	15,0
per 1000 ha of maize sown area, pcs	12	8	5	2	2	1	1	8,3

Source: [1, p. 203]

Amortization expenses include costs and, simultaneously, is the source of retrieval of fixed assets. Scientists Paul Samuelson and William Nordhaus determine the amortization as a compensation in the form of money of means of labour, which corresponds to the depreciation of these means [2, c. 614].

2. The availability of agricultural equipment in farms of population in Ukraine (at the end of year, thsd. pcs.)

Index	2000	2005	2007	2008	2009	2010	2011	2011 in% to 2000
Tractors	101	135	150	158	165	172	179	177,2
Grain harvester combines	2	13	16	18	20	21	22	1100,0
Besides, minitractors and motorblocks	-	22	26	31	36	44	65	295,5 to 2005

Source: [1, c. 206]

From this, in our opinion, very concise definition, we can highlight the aspect that nowadays, in time of rapid development of technologies, more attention is paid on moral deterioration. That is, quite suitable for the use, fixed assets should be replaced by the more progressive and productive, and the level of reimbursement should be corrected, taking into account the objectively necessary reduction of the term of their usage.

Introduction of complex mineral fertilizers under crops in comparison with the traditional, one species of nutrients, also reduces operating costs in use of agricultural machinery through the smaller total volume of their delivery and introduction, and thus increases the amount of added value.

It should also be noted that the use, for sowing grain crops, of high-quality seeds positively affects the efficiency of agricultural machinery, namely: greater number of less qualitative seeds should be sown, higher cost of its delivery. Besides, in case of absence of a clear definition of seed germination, you need to carry out technological operations to bring the density of plants to norm. Nowadays in Ukraine there are about 80 seed plants and modern seeds treatment lines, and in seed production of agricultural crops engaged 2 thousand farms, of which 500 grow elite and original seeds [3, c. 142]. In 2011, the number of winter wheat cultivars which are in the Program of the qualificational expertise increased from 123 (in 2011) to 151, including domestic cultivars -101, foreign -50 [4, c. 120].

Let's consider change of the value and structure of added value during growing winter wheat using intensive resource saving technology compared with the existing example of Ltd RPE «Agro-Rytm» of Lyubashivka district of Odessa region (Table 3). The company produces products of plant growing and has 850 ha of winter wheat sowings grown under intensive technologies.

We propose to apply in this enterprise on growing of the crop, intensive resource saving technologies using appropriate system of machines, combined wide-cut aggregates. Usually the price of this system is high, but firstly it can be applied on cultivation of almost all crops, and secondly, it has a high pay-back due to the increase of production efficiency.

As we can see from the data in Table 3, under intensive resource saving technologies, winter wheat yield increases by 3.4 t/ha, or by 7.3%, and the production prime cost of one centner of products reduces by 36,85 UAH., or 22.9%. Per 1 ha, due to the use of this system of machines and rational use of resources, production expanses reduces by the 1287,55 UAH., or 17.2%.

Because of the bigger cost of fixed assets in the prime cost structure of winter wheat, capital allowances increased by 2.1 percentage points, but at the same time, reduced material costs and labor costs. Per 1 ha, using intensive resource saving technology in comparison with traditional, decreased by 230,74 UAH., due to the use of combined wide-cut aggregates and minimization of technological operations. For this reason, expenditure of combustive-lubricating materials reduced and the costs on running repair. Increment of added value totally amounted 1868,35 UAH., including: due to the profit, the constant price of realization, added value increased by 2001,05 UAH., due to depreciation by 98.04 UAH., but due to wages, on the contrary, decreased by 230,74 UAH. Namely, using the appropriate system of machines, that

allows effectively and rationally spend production resources, it is possible, under other equal conditions, to increase significantly the sum of the added value, mainly due to the effective part of it – profit, reducing the total spendings.

3. Structure of selfcost of 1 t of winter wheat and added value in Ltd RPE «Agro-Rytm» Lyubashivka district of Odessa region

Index	Intensive resource saving technology, production expenses per 1 ha – 6207,74 UAH., direct labor costs – 0,43 per-h on 1 centner, crop capacity 50 t/ha (estimated values)		Existing in the farm technology production expenses per 1 ha – 7495,29 UAH., direct labor costs – 0,80 per-h on 1 centner, crop capacity of 46,6 t/ha (fact 2012)	
	expenditures per 1 centner, UAH	structure of expenditures, %	expenditure per 1 centner, UAH	structure of expenditures, %
Wages with extra fee	8,34	6,7	13,90	8,6
Material expenses including:	95,22	76,7	127,62	79,3
mineral fertilizers	32,34	26,0	25,02	15,6
Combustive-lubricating materials	25,16	20,3	33,36	20,7
other material costs	37,72	30,4	69,24	43,0
Capital allowances	5,26	4,2	3,54	2,1
Other direct and t5otal production costs	15,33	12,4	15,94	10,0
Land lease payments	6,10	4,9	6,55	4,1
Production prime cost 1 centner, in roubles	124,15	100	161,00	100
Total prime cost per 1 centner, UAH	132,53	x	171,87	x
Total prime cost per 1 ha, UAH	6626,50	x	8009,14	x
Price of realization 1 centner, UAH	181,65	x	181,65	x
Proceeds per 1 ha, UAH	9082,50	x	8464,09	x
Added value per 1 ha, UAH.	3441,00	x	1572,65	x
including: wages with extra fee	417,00	x	647,74	x
amortization	263,00	x	164,96	x
rent	305,00	x	305,00	x
profit	2456,00	x	454,95	x
Increment of added value per 1 ha	1868,35	x	x	x

Source: own researches

Conclusions. In grain production after applying intensive resource saving technologies, which allows for use of appropriate systems of machines, you can significantly increase the sum of the added value, mainly due to profit reducing the absolute costs of production resources. One of the positive aspects of using these fixed assets, that during reduction of labour costs and total payroll, increases payment for hour of work due to the use of more qualified labour.

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