

Possibility of Increasing Volume, Structure of Production and use of Domestic Wheat Seed in Agriculture of the Republic of Srpska

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Abstract

The objective of this research work was to explore the scope, structure and quality of production and use of domestic wheat in the RS. The subject of the research was to determine the production of wheat in the Republic of Srpska, the needs for seed wheat, determine the amount imported, and to identify measures to increase domestic production of seed wheat and to reduce imports. The analysis of commercial wheat production in the period 2006-2010 showed that the production took place in the average area of 44,017.6 ha, with an average yield of 3.28 t/ha and total production of 145,591 t. The highest level of wheat production was recorded in 2007 when it was 172,481 t, and a minimum production was in 2010 when it was 84,647 t. In the Republic of Srpska in 2010, the area under wheat amounted to 33,641 ha, which required about 8,410 tonnes of wheat seed, and only 4.27% of the quantities of seed wheat needed for the RS market were produced in the RS, the rest came from imports. According to the Indirect Taxation Administration data, the Republic of Srpska imported 125 t of wheat seed in 2009. The quantities of imported wheat vary considerably from year to year and are influenced by the weather in the sowing season and the prices on the market. Analysis of seed wheat in period 2006-2010 showed that the seed wheat occupied an average area of 128.8 ha, with the average yield of 4.06 t/ha and the total average production of 514.2 tonnes. The highest production was recorded in 2008 when it was 656.25 tonnes, and the lowest in 2010, 359.4 tonnes. Demand for wheat seed of the Republic of Srpska, based on five-year average, amounts to 13,205 tonnes, in which the domestic production share is 514 tonnes or 3.9%. The value of domestic wheat seed production in this period was BAM 393,616, and the value of missing quantities of seeds that are imported is BAM 9,824,152, based on the domestic price.

Key words: surface, wheat, age, yield, RS, needs, imports.

Introduction

Seed production is a complex activity within the agrarian sector, and it can be observed from the agricultural, economic and social point of view. Seed is playing the main role in reproduction and survival of plant species. Significance of seed as food for humans and animals, but also for industrial processing, is enormous.

According to data provided by Indirect Taxation Authority of BiH, in 2009 the Republic of Srpska imported 125 t of wheat seed. The value of imported quantities of wheat, according to prices, is BAM 96.250. Quantities of wheat that are imported significantly vary from year to year, and that is caused by the weather in the sowing season as well as the prices on the market.

To make this situation change in favour of the Republic of Srpska, it is of crucial importance to stimulate development of domestic varieties through selection and breeding work, and in accordance with that, increase produced quantities of high quality local seed.

Materials and methods

The main goal of this research is to study the structure of domestic production of wheat seed in the Republic of Srpska in order to determine the state and shortages of seed, so the appropriate solutions are proposed that can reduce financial allocations for imports.

The subject of this research was to determine quantities of produced wheat seed in the Republic of Srpska, the overall need for wheat seed, quantities that are imported, and necessary measures in order to increase domestic production and reduce the imported quantities.

An analysis of production structure was performed in this research as well as the Republic of Srpska's needs for wheat seed and its level of production in the period from 2006 to 2010. Based on those analyses, this research proposed measures for improvement of wheat seed production.

Results and discussion

Production structure of wheat in Republic of Srpska

In the researched period, cereal production occupied the largest share of the Republic of Srpska sowing structure. According to produced quantities the most common field crop was maize and on the second place was wheat.

Wheat production in the five-year research period was organized on an average area of 44,017.6 hectares, with an average yield of 3.28 t/ha and total production of 145,591.8 t.

In the period under study, variations have been noted, both in terms of sown area under wheat and volume of production. The highest level of wheat production was recorded in 2007 – 172,481 t, and the lowest in 2010 – 84,647 t.

Tab. 1. Production of commercial wheat in the Republic of Srpska
Proizvodnja komercijalne pšenice u Republici Srpskoj

Wheat	2006	2007	2008	2009	2010	Average 2006-2010
Area (ha)	49 612	50 646	41 159	45 030	33 641	44 017,6
Production (t)	153 949	172 481	150 904	165 978	84 647	145 59178
Yield (t/ha)	3,1	3,4	3,7	3,7	2,5	3,28

Source: author's treatment

The Republic of Srpska's needs for seed according to the structure of production

Production of high categories of seed from domestic varieties of wheat (pre-basic seed, basic seed) has been conducted at the Agricultural Institute of the Republic of Srpska since 1970s. In 2010, the Institute produced 201.4 tonnes of basic seed of BL wheat varieties. Apart from this, PD "Semberija" from Bijeljina produced 158 tones of basic wheat seed. The total amount of seeds (359.4 t) is sufficient for sowing around 437.6 hectares (with sowing rate of 250 kg/ha). In 2010, area under wheat in the Republic of Srpska amounted to 33,641 ha, which required approximately 8,410 tonnes of wheat seed.

For approximately 50% of that amount, it is estimated that producers used their own uncertified seed.

This implies that in 2009 the Republic of Srpska market needed to supply about 4,205 t of certified wheat seed. In 2010, the Agricultural Institute of the Republic of Srpska and PD "Semberija" produced only 4.27% of the total quantities of wheat seed needs. The remaining certified seed came from neighbouring countries, thus significantly outflowed the funds from the Republic of Srpska (RS). According to data provided by the Indirect Taxation Authority of BiH, in 2009 the RS imported 125 t of wheat seed. Quantities of wheat that are imported vary significantly from year to year, and that is conditioned by the weather in the sowing season as well as the prices on the market.

Production of wheat seed in the Republic of Srpska

The results of this research are presented in Table 2.

It is evident from Table 2 that wheat seed production occupies average area of 128.28 hectares, with an average yield of 4.06 t/ha and the total average production of 514.2 tonnes. The highest level of total production was recorded in 2008 – 656.25 tonnes, and the lowest one was in 2010 – 359.4 tonnes.

The Republic of Srpska's demand for wheat seed on the basis of five-year period average amounts to 13,205 tonnes, in which domestic production participates with just 514 tonnes or 3.9%. The value of domestic wheat seed production in the observed period was BAM 393,616 while the value of imported quantities of this seed, in domestic prices, was BAM 9,824,152.

Tab. 2. Total seed production of wheat in the Republic of Srpska
Ukupna proizvodnja sjemenske pšenice u Republici Srpskoj

Types of production	2006	2007	2008	2009	2010	Average 2006-2010
Wheat						
Area (ha)	189	115	153,6	156	139	128,28
Production (t)	607,45	381	656,25	566,5	359,4	514,12
Yield (t/ha)	3,22	3,32	4,28	3,64	2,59	4,06

Source: author's treatment

Tab. 3. The balance of wheat seed production in the Republic of Srpska, 2006-2010
Bilans proizvodnje sjemenske pšenice u Republici Srpskoj, 2006-2010. godine

Year	Merchantile wheat production in Republic of Srpska		Seed production of wheat in Reublic of Srpska		Price of domestic seed (BAM/t)	Value of the domestic seed production (BAM)	Need for the seed sown area (t)	Value of the demand for seed by domestic seed prices (BAM)	Missing quantities of wheat (t)	The total missing quantity of wheat (BAM)
	H	t	h	t						
2006	49 612	153 949	189	608	780	474 240	14 884	11 609 520	14 276	11 135 280
2007	50 646	172 481	115	381	850	323 850	15 194	12 914 900	14 813	12 591 050
2008	41 159	150 904	153	656	910	596 960	12 348	11 236 680	11 538	10 499 580
2009	45 030	165 978	156	567	490	277 830	13 509	6 619 410	12 942	6 619 410
2010	33 641	84 647	139	360	820	295 200	10 092	8 275 440	9 732	8 275 440
Average:	44 018	145 592	150	514	770	393 616	13 205	10 131 190	12 660	9 824 152

Source: author's treatment

Conclusion

A breeding programme without continuity, recognized and in production widely used varieties in the last ten years, cannot be considered as a serious breeding programme. Also, programmes focused on varieties that are producing small quantities of seeds, while at the same time the missing amounts are imported, cannot be considered as economically significant programmes.

Research results show the following conclusions:

- Wheat production in the research five-year period was organized on an average area of 44,017.6 hectares, with an average yield of 3.28 t/ha and total production of 145,591.8.
- In 2010, areas under wheat in the Republic of Srpska amounted to 33,641 ha, which required approximately 8,410 tonnes of wheat seed.
- According to data provided by the Indirect Taxation Authority of BiH, in 2009 our country imported 125 t of wheat seeds.
- Wheat seed production occupies an average area of 128.28 ha, with an average yield of 4.06 t/ha and a total average production of 514.2 tonnes.

- The value of domestic wheat seed production in the observed period was BAM 393,616 while the value of imported quantities of seed, in domestic prices, was BAM 9,824,152.

The research results indicate that most of wheat sown in the Republic of Srpska is performed with uncertified and imported seed, which results in low yields, poor quality of commercial goods and others.

Registration of the Republic of Srpska varieties and their introduction into production will have significant indirect effects. Seed producers will achieve higher profits, and farmers will raise their level of cultural practices, and thus, yields and profits.

The link between breeder - registration of varieties – seed producer – seed distribution - seed users is hardly functioning. There are many models in the region that can be successfully implemented in practice in the Republic of Srpska, even with the currently existing staff in public institutions and agricultural services in local communities. Education of producers through lectures, especially macro and demo experiments, media and written texts is a tested method of promoting and putting into use own seed. In simple terms, the producer must always have at his disposal all the information and seeds he needs.

The agricultural Institute of the Republic of Srpska in Banja Luka represents a good starting point for realisation of this research. First of all, the Institute has trained personnel and well equipped laboratories that are very good starting points for breeding and creation of new varieties, as well as for control of genetic purity. A biotechnological laboratory is equipped to perform part of breeding programme easily with the help of molecular markers, which is of great importance. Other segments of the Institute also have enough experience in certain breeding activities, especially in seed production.

With a quality programme, it is necessary to create a BL brand in seed production, which will be able to compete with seeds produced by other companies. Developed seed production should be a good starting basis for our country to integrate with the EU.

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Mogućnosti povećanja obima, strukture proizvodnje i upotrebe domaće sjemenske pšenice u poljoprivredi Republike Srpske

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Sažetak

Cilj rada je istraživanje obima, strukture i kvaliteta proizvodnje i upotrebe domaćeg sjemena pšenice u Republici Srpskoj. Predmet istraživanja rada je utvrđivanje proizvodnje sjemena pšenice u Republici Srpskoj, zatim potreba za sjemenskom pšenicom, utvrđivanja uvezenih količina, kao i utvrđivanja mjera za povećanje domaće sjemenske proizvodnje pšenice radi smanjenja uvoza. Analizom proizvodnje merkantilne pšenice u periodu 2006-2010. godine došlo se do podataka da se proizvodnja odvijala u prosjeku na površini od 44 017,6 ha, s prosječnim prinosom 3,28 t/ha i ukupnom proizvodnjom od 145 591,8 t. Najveći nivo proizvedene pšenice zabilježen je u 2007. godine kada je iznosila 172 481 t, a najmanja 2010. godine 84.647,00 t. U Republici Srpskoj u 2010. godini površine pod pšenicom su iznosile 33 641 ha, za što je potrebno oko 8.410 tona sjemenske pšenice, a proizvedeno je 4,27% sjemena od navedene količine pšenice potrebne za tržište RS, ostatak dolazi iz uvoza. Prema podacima iz Uprave za indirektno oporezivanje, u 2009. godini u Republiku Srpsku uvezeno je 125 t sjemenske pšenice. Količine uvezene pšenice značajno variraju od godine do godine, a uslovljene su vremenskim prilikama u sezoni sjetve i cijenama na tržištu. Analizom sjemenske pšenice u periodu 2006-2010. godine došlo se do podataka da je sjemenska pšenica zauzimala prosječnu površinu od 128,28 ha, prosječnim prinosom od 4,06 t/ha i ukupnom prosječnom proizvodnjom od 514,2 tona. Najveća proizvodnja zabilježena je u 2008. godini kada je iznosila 656,25 tona, a najmanja u 2010. godini 359,4 tona. Potrebe za sjemenskom pšenicom Republike Srpske na bazi petogodišnjeg prosjeka iznose 13 205 tone, u čemu domaća proizvodnja učestvuje sa 514 tone ili 3,9%. Vrijednost domaće sjemenske proizvodnje pšenice u posmatranom periodu je 393 616 KM, a vrijednost nedostajućih količina sjemena koje se uvoze po domaćim cijenama iznose 9 824 152 KM.

Ključne riječi: Površina, pšenica, godina, prinos, RS, potrebe, uvoz.

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