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SITUATION IN THE CZECH SEED SECTOR IN THE RELATION TO THE CHANGES AFTER THE ACCESSION TO THE EUROPEAN UNION

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SUMMARY

The Czech Republic has been EU member since 2004. Nowadays it is possible to evaluate the concrete influence of that joining to the national seed sector volume and productivity. Several important areas which had an important impact on seed sector development are defined. Those are: the development and changes in the structure of the agricultural production, concentration of the capital and the change of the competition environment, harmonization of the seed legislation and Plant Breeder's Right. National varieties share has permanently decreasing trend due strong competitive pressure on the market caused by free market of varieties listed in the Common Catalogue and by registration of the productive foreign varieties of which sale is supported by long-standing marketing experience of the strong multinational companies. The breeding of some crops was definitely stopped or restricted (sugar beet, flax, triticale). The development of the new legislative for EU seed sector in the direction of centralisation could cause next problems for domestic national breeding companies.

Key words: plant breeding, seed production, influence of the EU accession

Characterisation of the Czech Seed Sector

The Czech Republic has been EU member since 2004. The private seed sector in the Czech Republic and other Central and Eastern European countries until 1989 was controlled by the State and there was no private seed company. The Czech seed sector was privatized very quickly and now only private plant breeding and private seed production exist. Main source for the financing of the plant breeding are royalties, FSS remunerations, seed trade and the state support (research grants). Functionality and efficiency of these systems are fundamental factor of the existence of the variety breeding and its development. The balance of the sources and expenses is influenced namely by a successfulness of the domestic varieties in the market and the size of the market.

Breeding of the minority crops in regard to the limited sowing area in the Czech Republic has difficulties with the breeding financing, particularly if any success is not reached with the utilization such varieties abroad (Table 1).

Table 1 Estimation of the financing of the breeding in Czech Republic
Tablica 1. Procjena financiranja oplemenjivanja bilja u Češkoj

Estimation of the financing	EUR
Total expenses for the breeding *Ukupni troškovi oplemenjivanja*	12.295.082
Total collected royalties *Ukupno prikupljene licence*	14.344.262
Royalty income from domestic varieties *Prihod licenci od domaćih sorti*	5.450.820
Share of royalties on abroad variety representation *Prihodi od licenci za sorte uzgajane u inozemstvu*	1.229.508
FSS remuneration *Naknade od sjetve farmerovog sjemena*	2.049.180
Research grants *Istraživački projekti*	3.278.689
Total main financial sources for breeding *Ukupni glavni izvori financiranja oplemenjivanja bilja*	12.008.197

Influence of the agriculture sector development on the seed sector

Czech agriculture went through essential changes during nineties of the last century. The EU accession has become a further important stage in its development. From 2003 to 2009 there had been a further fall in the share of agriculture in GDP almost by one third to 2,4 %. Development in the production of the livestock commodities had strong influence on the plant production structure. Namely reduction pig and poultry heads was very significant (Table 2). Plant production structure was also influenced by import of the cheaper foodstuffs and lower consumption of feed for animal production not only from EU countries but also from the entire world. Development in oil crops cultivation was influenced by demand of the processing industry, cultivation of the maize by development of the technology for alternative energy production (Table 3). Thanks to these facts farmers are able to produce commodities requested by market, instead of a cultivation of crops that bring financial losses.

Table 2 Livestock heads in Czech Republic 1997 - 2011
Tablica 2. Broj grla stoke u Češkoj 1997 - 2011

Commodity - *Vrsta stoke*	Cattle - *Goveda*	Pigs - *Svinje*
1997	1.865.902	4.079.590
2000	1.573.530	3.565.414
2003	1.473.828	3.362.801
2005	1.397.308	2.876.834
2011	1.344.286	1.749.232
Index 2011/2003	0,91	0,52
Index - 2011/1997	0,72	0,43

Table 3 Acreage of the crops in Czech Republic 1997 – 2011 (ha)
Tablica 3. Površine pojedinih usjeva u Češkoj 1997 – 2011 (ha)

Commodity Vrsta	1997	2000	2003	2005	2011	Index 2011/ 03	Index 2011/ 97
Cereals *Žitarice*	1.696.325	1.647.508	1.452.348	1.593.487	1.468.129	1,01	0,87
Grain maize *Zrno kukuruza*	34.985	39.317	78.040	79.981	109.651	1,41	3,13
Winter rape *Uljana repica*	229.767	325.338	250.959	267.160	373.386	1,49	1,63
Fodder crops *Krmno bilje*	785.872	725.252	513.059	491.881	423.050	0,82	0,54
Potatoes *Krumpir*	72.839	69.236	35.984	36.072	26.450	0,74	0,36
Vegetables *Povrće*	34.115	32.316	12.176	8.917	9.591	0,79	0,28
Total area *Ukupne površine*	3.049.005	3.020.564	2.571.122	2.657.881	2.488.141	0,97	0,82

Changes in the Seed Sector

Structure of the bred crops was gradually modified in the context of the above mentioned changes in the Czech agriculture and importance of the crops on the EU market and according to the competitiveness of Czech varieties abroad. The breeding of some crops as is sugar beet, red beet, flax, winter barley, triticale and other crops was stopped or significantly reduced.

Development of the seed sector subsidy

A rapid change of the State ownership to the private one brought certain difficulties in the agriculture branch including the seed sector. From the plant breeding point of view the strong State financial support was finished and the licence fees became the only one profit source of the breeding companies. Nevertheless, the State itself had been keeping a will to support the breeding companies during their process of conversion to the full economic independence giving them a certain volume of subsidies. This support was cancelled definitely in 2007 and the breeding improve its budget only through research grant system only, like one possible system of the support allowed by EU administrative.

Table 4 Subsidy for seed sector in Czech Republic 1997 – 2011 (€)
Tablica 4. Potpore sektoru sjemenarstva a u Češkoj 1997 – 2011 (€)

Subsidy - *Potpore*	1997	2000	2003	2005	2011
Subsidy for breeding *Potpore za oplemenjivanje*	4.631.000	7.869.000	7.426.000	6.795.000	-
Breeding grants *Projekti oplemenjivanja*	-	-	-	-	1.311.000
Subsidy for seeds *Potpore za sjeme*	-	-	10.246.000	7.607.000	-

Competition

The national varieties covered the largest share in the market till 1990. The share of varieties from abroad has grown constantly since that year and in a case of the most crops the majority of registered varieties are not coming from the domestic breeding (Table 5).

Table 5 Number of registered wheat and maize varieties in Czech Republic 1997 – 2011
Tablica 5. Broj registriranih sorti pšenice i kukuruza u Češkoj 1997 – 2011

		Winter wheat – *Ozima pšenica*			Maize - *Kukuruz*		
Year	*Godina*	Total *Ukupno*	Domestic *Domaće*	Foreign *Strane*	Total *Ukupno*	Domestic *Domaće*	Foreign *Strane*
1997	Number-*Broj*	39	23	16	141	22	119
	%	100	59	41	100	16	84
2000	Number-*Broj*	53	26	27	148	18	130
	%	100	49	51	100	12	88
2003	Number-*Broj*	64	27	37	169	20	149
	%	100	42	58	100	12	88
2005	Number-*Broj*	78	31	47	190	20	170
	%	100	40	60	100	11	89
2011	Number-*Broj*	94	36	58	335	23	312
	%	100	38	62	100	7	93

The competition of the foreign varieties had not so strong influence on the seed market till 2000 or 2001, in a case of the most important agricultural crops like cereals the national varieties prevailed significantly in the seed multiplication as well as on seed market. The similar situation was at some other plants. e.g. forage plants. However the next development on the seed market has been successful for foreign varieties. Marketing experience and power of the variety owners and their representatives have often more importance than real variety value. More detailed analysis is presented in the Table 6.

Table 6 Production of certified winter wheat seed in Czech Republic 1997 – 2010
Tablica 6. Proizvodnja certificiranog sjemena ozime pšenice u Češkoj 1997 – 2010

Year	Varieties - *Sorte*	ha	Mt	%
1997	Domestic - *Domaće*	39.894	85.272	89
	Foreign - *Strane*	4.931	10.539	11
2000	Domestic - *Domaće*	21.178	48.537	70
	Foreign - *Strane*	9.076	20.801	30
2003	Domestic - *Domaće*	16.806	45.951	42
	Foreign - *Strane*	23.208	63.457	58
2005	Domestic - *Domaće*	13.354	35.791	37
	Foreign - *Strane*	22.737	60.941	63
2011	Domestic - *Domaće*	11.620	34.216	38
	Foreign - *Strane*	19.959	55.827	62

The situation on the seed market is also complicated by import varieties from Common Catalogue and continuing globalization of the seed sector has increased the competitive fight.

Extension of market for domestic companies abroad is possible only in the case of less important crops where competition is not so hard. Commercial seed companies realize seed export, namely of the foreign varieties that are multiplied on the contract if the quality and also price are competitive.

Usage of the certified seeds

Usage of the certified seeds has important influence on financing of the plant breeding besides range of the market, which is determined by the acreage of the crop cultivation and market share. Decreasing usage of certified seeds is common problem not only in Europe.

The usage of the certified seeds was positively influenced by subsidy for seeds (2001-2006) and by activity in the collection remunerations from FSS since 2001. EU administrative stopped exception on support of the certified seed purchase and all efforts to restore this support were unsuccessful.

Table 7 Usage of certified seed in Czech Republic 2001 – 2011
Tablica 6. Korištenje certificiranog sjemena u Češkoj 2001 – 2011

Year - *Godina*	Winter wheat *Ozima pšenica*	Winter barley *Ozimi ječam*	Ray - *Raž*	Triticale *Tritikale*	Winter cereals *Ozime žitarice*
2000/2001	38,9	39,3	31,1	31,1	38,7
2001/2002	62,0	56,7	37,0	37,0	59,2
2002/2003	63,7	62,4	41,7	52,2	61,9
2003/2004	49,8	51,9	35,7	33,1	47,9
2004/2005	73,2	61,8	57,9	47,5	68,8
2005/2006	67,5	66,6	48,6	45,3	66,5
2006/2007	67,5	62,4	18,5	28,8	62,9
2007/2008	71,9	74,1	51,1	52,3	70,2
2008/2009	64,4	64,2	65,0	44,0	63,4
2009/2010	49,5	56,1	34,9	36,8	49,3
2010/2011	56,9	53,6	30,2	39,1	55,0

Influence of the legislation harmonization

Generally, there are three legislative pillars for the seed sector - "seed acts", IP protection and GMO legislation in the EU. Seed standards and system of the variety registration were very similar and the Czech Republic did not expected hard problems during legislation harmonization.

Validity of the Common Catalogue brings possibility to market all listed varieties in the whole of Europe. This important extension of the market space is an advantage, but needs marketing experience and necessity of investment to corner the territory market. This provision is namely advantage for strong multinational companies. The market of the varieties from Common Catalogue is increasing and the sale reached level 14 % in the Czech Republic (2010). Important problem is also marketing of non protected varieties from Common Catalogue that are multiplied as Farmer's Save Seeds and bring complication in the relation to the successfulness of the collection of FSS remuneration. This problem is extended after the accession each new country because lot of its varieties fails to meet the requirement of the novelty and cannot obtain EU protection.

Problems bring harmonization of the EU List of Crops for Registration that took off some species from Czech list. Some from deleted species were listed after couple of years and could be included in the Czech List again.

The improving of the technical protocols for vegetables under the baton of CPVO without any interim period is absolutely unacceptable and can caused the massive damage to Czech vegetable breeding.

Authorisation of Member States to Permit Temporarily the Marketing of Seed not Satisfying the Requirements in Respect of the Minimum Germination (No.

217/2006, February 8, 2006) is not efficient provision and complicates namely sowing of the autumn crops.

However the most complicated step in the harmonization is coming and its name is Better Regulation. Oncoming problems must not be only in the harmonization of the seed law, also is considered harmonisation of the variety registration and seed certification fee. Main problems are full pressure on centralization of the power and the decisions to hands of EU administrative, that brings the increase of expenses on the registration procedure namely for the new EU members.

CONCLUSIONS

Enlargement of the EU brings the extension of the market territory in any case. Question is for whom. Possibilities of the new members are limited in the global world. The changes affected domestic small and medium companies are rather negative. Extension of market for breeding companies abroad is possible only in the case of less important crops where competition is not so hard. Commercial seed companies can realize export seed, namely of the foreign varieties that are multiplied on the contract. Changes in the seed sector are mainly caused by changes in the agriculture structure and rough competitive environment in the domestic market. The centralization of the registration and IP protection in the framework of the Better Regulation can improve position of the old EU members and strong multinational companies.

STANJE I PROMJENE U ČEŠKOM SEKTORU SJEMENARSTVA NAKON PRIDRUŽIVANJA EUROPSKOJ UNIJI

SAŽETAK

Članicom Europske unije Republika Češka postala je 2004. godine. Sada je moguće procijeniti konkretan utjecaj pridruživanja na veličinu nacionalnog sektora sjemenarstva i njegovu produktivnost.

U radu je obrađeno nekoliko područja koja su imala značajan utjecaj na razvoj sektora sjemenarstva. To su razvoj i promjene u strukturi poljoprivredne proizvodnje, koncentracija kapitala i promjene konkurentskog okruženja te usklađivanje zakonodavstva na području sjemenarstva i oplemenjivačkog prava.

Udjel domaćih sorti konstantno se smanjuje uslijed jake konkurencije na tržištu uzrokovane slobodnim korištenjem sorti sa Zajedničkog kataloga i registracijama produktivnih stranih sorti čija je prodaja podržana dugogodišnjim tržišnim iskustvima jakih multinacionalnih kompanija.

Oplemenjivački rad na nekim poljoprivrednim kulturama je prekinut ili je jako reduciran (šećerna repa, lan, tritikale).

Razvoj novog zakonodavstva u sektoru sjemenarstva Europske unije usmjeren na centralizaciju može uzrokovati daljnje probleme domaćim oplemenjivačkim tvrtkama.

Ključne riječi: oplemenjivanje bilja, proizvodnja sjemena, utjecaj pridruživanja EU

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