High Yielding Oilseed Rape - an Analysis of Background

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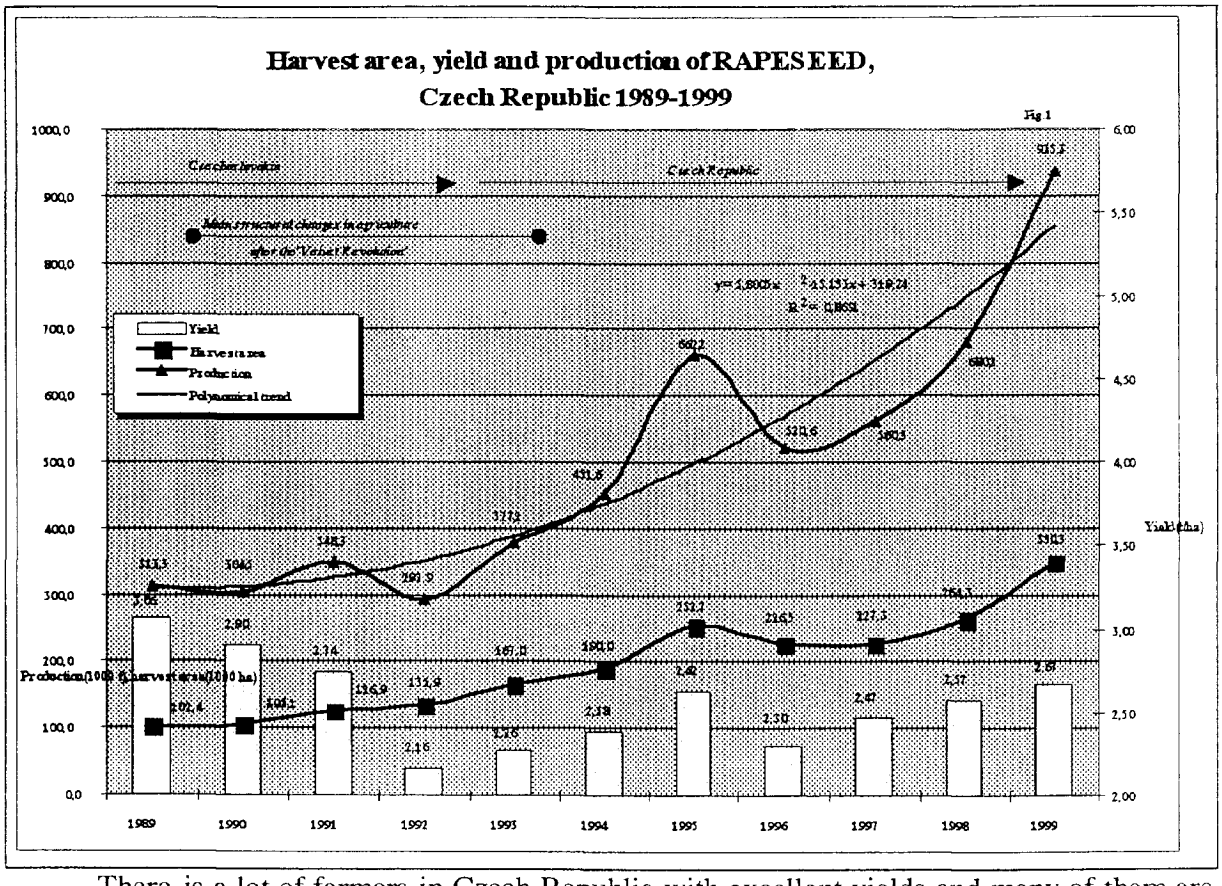
Due to the market development oilseed rape became one of the most important and profitable crop in the Czech agriculture during last 10 years. This fact is reflected in more than 3 times larger harvest area from 1990 to 2000. Unfortunately, yield is - of course - not 3 times higher (Fig. 1). In spite of it, from the historically point of view, one of the best average rapeseed yield has been achieved in 1999 (2,67 t/ha).



There is a lot of farmers in Czech Republic with excellent yields and many of them are members of the Union of Oilseed Growers and Processors (? 850 farmers in total). The following table shows the structure of yields and overploughed fields in the Union in 1999.

Tab. 1: Structure of yields and overploughed fields

Yield (t/ha)	*Harvest area (ha)*	*Overploughed (%)*
> 4,00	2 966	0,00
3,76 - 4,00	4 431	1,99
3,51 - 3,75	14 101	1,79
3,01 - 3,50	49 720	4,50
2,76 - 3,00	25 872	6,83
2,51 - 2,75	18 368	10,31
< 2,50	26 561	12,00

As these data denote, more than 20 000 ha of an oilseed rape has been harvested with yield above 3,5 t/ha and more than 70 000 ha above 3 t/ha, respectively. These results are owing to real economical situation in Czech agriculture almost a miracle.

After this in our conditions successful year analyses of the 5 best crop managed rapeseed fields in each of 9 regions of the Czech Republic were done. Some of these analyses are presented in the following overview (Tab. 2).

Tab. 2: Analysis of the best yielded rapeseed, Union 1999 (n = 45, in average: sowing rate 4,73 kg/ha, 194 kg N/ha, yield 4,17 t/ha, cropping area 25 ha)

Trait	*Value of trait*	*Frequency*	*Note*
Variety	ZORRO	9	
	BRISTOL	8	
	LIRAJET	8	
	CAPITOL	7	
	SLAP. STELA	7	
	PRONTO	3	
	HONK	2	
	IDOL	2	
	APEX	1	
	RUFUS	1	
Organic manure	Yes	17	
	No	28	
Stubble breaking	Yes	30	
	No	15	
Tillage	Yes	42	
	No	3	
Seed treatment	Yes	12	12 Vitavax + Promet
	No	33	
Autumn treatment			
Herbicides	Yes	45	34 Command, 20 Lasso, 14 Butisan, 5 Butisan Star, 4 Teridox, 2 Synfloran, 1 Lontrel
	No	0	

Graminicides	Yes	33	18 Gallant, 7 Fusilade, 6 Pantera, 2 Agil
	No	12	
Growth regulators	Yes	14	5 Stabilan, 5 Horizon, 4 CCC
	No	33	
Insecticides	Yes	1	1 Vaztac
	No	44	
Use of fertilizers (autumn)			
N	Yes	21	average: 33 kg N/ha
	No	24	
P	Yes	24	average: 30 kg P/ha
	No	21	
K	Yes	11	average: 100 kg K/ha
	No	34	
S	Yes	1	
	No	44	
Spring treatment			
Herbicides	Yes	7	3 Lontrel, 2 Starane, 2 Decis
	No	38	
Growth regulators I.	Yes	27	14 Rexan, 6 Relan, 3 CCC, 2 Bioal-gen, 2 Stabilan
	No	18	
Growth regulators II.	Yes	16	11 Rexan, 3 CCC, 1 Folicur, 1 Relan
	No	29	
Fungicides I.	Yes	19	10 Alert, 3 Horizon, 2 Caramba, 2 Conker, 1 Alto Combi, 1 Sportak
	No	26	
Fungicides II.	Yes	5	4 Alert, 1 Bavistin
	No	40	
Insecticides I.	Yes	44	33 Nurelle D, 5 Karate, 5 Talstar, 2 Regent
	No	1	
Insecticides II.	Yes	44	26 Karate, 6 Nurelle D, 6 Vaztac, 3 Decis, 2 Fury, 1 Talstar
	No	1	
Insecticides III.	Yes	3	1 Karate, 1 Nurelle D, 1 Vaztac
	No	42	
1st spring N	Yes	45	Average: 58 kg N/ha
	No	0	
2nd spring N	Yes	45	Average: 55 kg N/ha
	No	0	
3rd spring N	Yes	42	Average: 47 kg N/ha
	No	3	
4th spring N	Yes	10	Average: 18 kg N/ha
	No	35	
Regulation of ripening	Yes	15	9 Spodnam, 5 Harvade, 1 Basta
	No	30	