Performance and market shares of hybrid varieties of winter oilseed rape in Germany

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Since 1996/97 hybrid varieties of winter oilseedrape based on the MSL-hybrid system („Male Sterility Lembke“) are marketed in Germany. Year by year the market shares of these hybrid varieties have been increased, for the harvest 2001 about 18 to 20% of the total acreage (1,112 Mio. hectares) are planted with hybrid varieties (table 1). For the season 2001/2002 another increase of the market shares up to more than 25% for F1-hybrid varieties has been realised. The most important hybrid varieties are „Talent“, „Artus“, „Pronto“ and „Maja“.
MSL-hybrids are restored hybrids, the analysis of the restauration have shown for several hybrid varieties a very good pollen production per flower and equal size of the pollen in comparison to o.p.-varieties (table 2).
A lot of winter oilseedrape varieties are listed and marketed in Germany, the most important varieties are presented in table 3. Alltogether five hybrid varieties have been national listed, one hybrid variety is marketed via EU variety list. The yield performance of the hybrid varieties in regional trials are showing 6 to 10% yield advantage above best o.p.-varieties (table 4). New F1-hybrid varieties like „Talent“ are not only better in seed yield, but also in oil content, Phoma resistance, standing power and plant length.
Hybrid varieties have a very high yield potential, which can be realised by higher intensification of the production. The use of growth regulators and the use of fungicides during flowering including additional nitrogen have an ecomomic benefit (table 5).
For the future development we are expecting step by step higher market shares of F1-hybrid varieties in the market. Beside the higher yield potential also better stress tolerances under poor growing conditions have been observed under farm conditions.

Table 1: Development of MSL-Hybrid Varieties in Germany

1995/96	*1996/97*	*1997/98*	*1998/99*	*1999/00*	*2000/01*
200 ha	***28.000 ha***	***50.000 ha***	***92.000 ha***	***160.000 ha***	***215.000 ha***
experimental fields only	EU: ca. 30.000 ha	EU: ca. 96.000 ha	EU: ca. 230.000 ha	EU: ca. 330.000 ha	EU: ca. 402.000 ha
main varieties					
JOKER	***JOKER***	***JOKER***	***PRONTO***	***PRONTO***	***PRONTO***
PRONTO	***PRONTO***	***PRONTO***	***PANTHER***	***PANTHER***	***PANTHER***
		ARTUS	***ARTUS***	***ARTUS***	***ARTUS***
					SUSANNA
					MAJA
					TALENT

Table 2: Amount and Size of Pollen in Flowers of Winter Oilseedrape *(hybrid- and op-varieties)*

variety	1998		1999		2000	
	amont of pollen / flower in µg (n=10)	**size of pollen** in µm (n=10)	**amont of pollen / flower** in µg (n=10)	**size of pollen** in µm (n=10)	**amont of pollen / flower** in µg (n=10)	**size of pollen** in µm (n=10)
Pronto *(H)*	279	26,5	-	-	-	-
Artus *(H)*	225	26,4	230	27,3	-	-
Talent *(H)*	-	-	340	27,8	340	27,3
Lutin *(RH)*	-	-	-	-	270	27,8
Express *(op)*	193	27,0	250	27,2	260	27,4
Lirajet *(op)*	209	26,5	290	27,2	-	-

H = MSL-hybrid RH= restored ogu/INRA-hybrid op = open pollinated

Quelle: Niedersächsisches Landesinstitut für Bienenkunde, 1998 bis 2000

Table 3: Description of Main Winter Oilseedrape Varieties

variety	breeder	beginning of flowering	maturity	plantlength	lodging	susceptibility stem canker	seedyield	oil yield	oil content
TALENT (H)	NPZ	3	4	5	3	3	8	8	6
KAPITAN (H)	NPZ	3	4	4	4	3	8	7	6
MAJA (H)	SEMU	3	4	5	4	4	9	8	6
SUSANNA (H)	SEMU	4	4	5	5	5	8	7	5
*CONTACT**	DSV	3	4	4	4	4	7	7	7
LASER	NOVA	4	5	6	4	4	7	6	6
LISABETH	DSV	4	5	5	3	3	6	5	6
ZENITH	NOVA	3	5	5	3	4	7	6	6
ATTILA	KWS	4	4	5	5	4	5	5	6
CAPITOL	DSV	4	5	5	5	4	6	6	6
MOHICAN	PETR	4	5	4	4	3	6	5	7
*ARTUS (H) **	NPZ	4	4	5	4	4	9	8	5
PANTHER (H)	NPZ	3	4	5	4	4	9	7	5
PRONTO (H)	NPZ	3	4	5	3	5	8	7	6
EXPRESS	NPZ	3	4	3	2	3	6	6	7
LIRAJET	DSV	4	5	5	4	4	6	4	6

H = restored hybrid

* EU-varieties

Source: Raps 3/2000

Table 4: Relative Seed Yield of Winter Oilseedrape

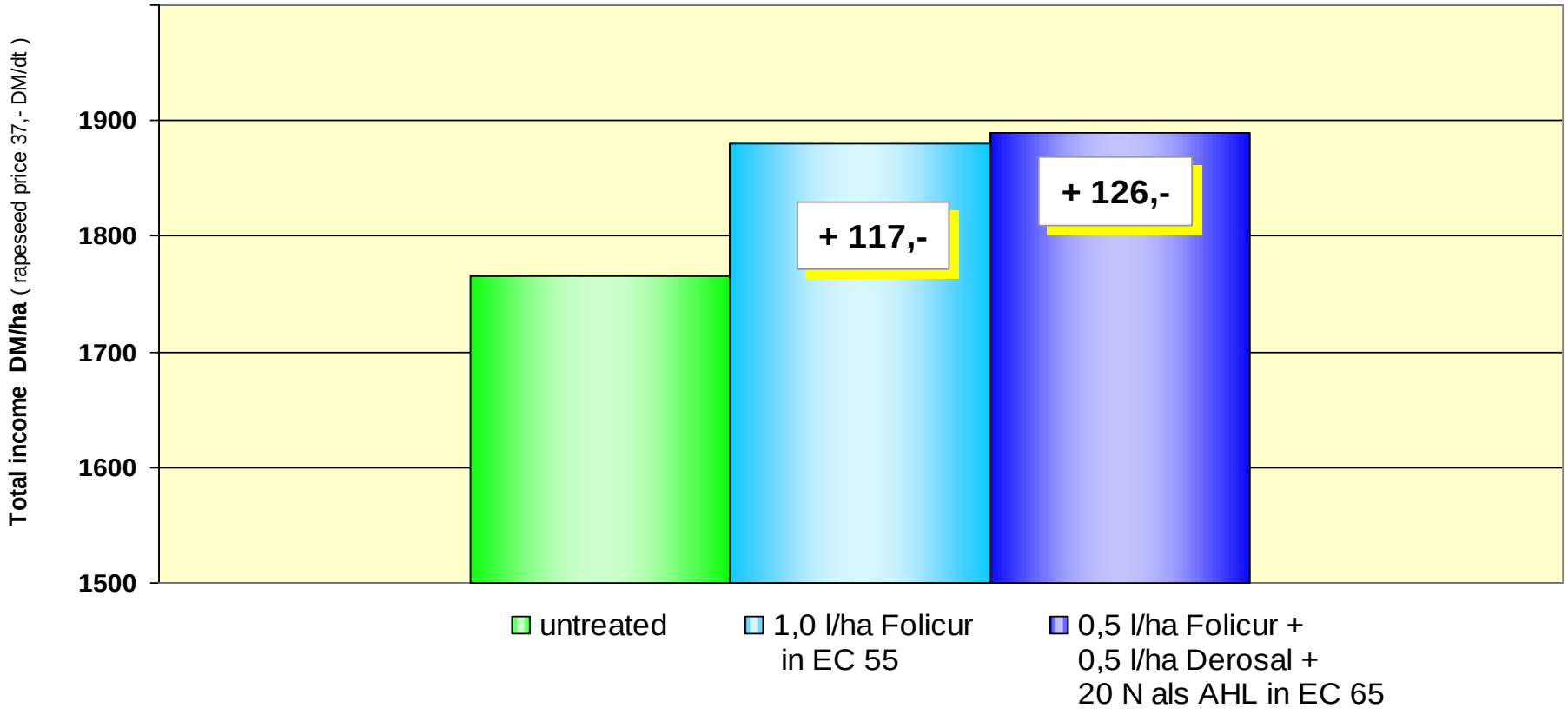
Regional Trials 1997/98 - 2000/2001

variety	1997/98 n = 63	1998/99 n = 71	1999/2000 n = 65	2000/2001* n = 67
ARTUS (H)	(111)	**109**	**108**	**106**
PANTHER (H)	**108**	**110**	**106**	**105**
PRONTO (H)	**109**	**106**	**106**	**102**
TALENT (H)	-	-	-	**107**
MAJA (H)	-	-	-	**102**
CONTACT	**-**	**-**	**102**	**96**
ZENITH	**101**	**100**	-	**94**
LASER	**-**	(103)	**99**	99
MOHICAN	**97**	**98**	**98**	**97**
CAPITOL	**99**	**99**	(99)	(98)
EXPRESS	**99**	**100**	**97**	**98**

( ) not tested at all locations * part. raw datas

H = restored hybrid

Table 5: Economic Reaction of Hybrid Rapeseed PRONTO to Fungicide Treatment



Source: 8 locations, Bayerische Landesanstalt für Bodenkultur und Pflanzenbau, 9/00