showed that these economically significant indices were affected by sowing time, the previous crop and the total nitrogen fertilizer rate.

References

1. Beķers M., Grūbe M. … [u.c.] (2001) Auzas kā funkcionālo uzturlīdzekļu izejviela //Pārtikas un uztura attīstības virzieni nākotnē: zinātniski praktiska konference. – Jelgava, PTF, -7.-11.
2. Gransmann W, Vorwerck K (1995) Oat milling, processing and storage. In: R.W.Welch (ed): The oat crop.production and untilization.- London: Chapman and Hall, 371 – 408.
3. Graudu kvalitāte /http:www.rigas-dzirnavnieks.lv/main.phl?id=3&sid=29&1=lv
4. Richards M. C. (1990) Factors affecting the quality of oats//Aspects of Applied Biology. Cereal Quality II, Scotland, UK, 25, 79-90.
5. Meyer D., Zwingelbey H. (1996) Verarbeitungseengeschaften von inlaendischen Hafersorten//Getreide, Mehl and Brot. 50, 333-337.
6. Zute S. Gruntina M. (2002) Grain yield of oat and different factors influencing it under growing conditions of Latvia// Agriculture:research works of biometrical sciences, Agronomy, Lithuanian Institute of Agriculture, Lithuania, Akademija, 71-77.

IESPĒJAS IZAUDZĒT PĀRTIKAS AUZAS LATVIJĀ

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Kvalitatīvu pārtikas produktu ražošanai ir nepieciešamas labas kvalitātes izejvielas – graudi. Ražošanas procesā svarīgi ir ne tikai graudu bioķīmiskie, bet arī saimnieciskie rādītāji – ražība, tilpummasa, TKW, plēkšņainība. Pārtikas produktu ražotāji ir norādījuši, ka iepērkot graudu minimālai tilpummasai jābūt lielākai par 480 g l^{-1}, plēkšņainība zemāka par 250 g kg^{-1} graudu. Sadarbībā ar A/S *Rigas Dzirnavnieks* Stendē veic pētījumus par pārtikas produktu ražošanai svarīgu rādītāju uzlabošanas iespējām Latvijā audzētām auzām. Pētījumā analizē Latvijas augu šķirņu katalogā reģistrēto auzu šķirņu kvalitātes rādītājus institūtā iekārtotos izmēģinājumos un novērtē ražošanas saimniecībās izaudzēto graudu kvalitāti.

No 2005. līdz 2007. gadam Stendē šķirņu salīdzinājumā vērtēja 15 Latvijā audzētas auzu šķirnes. Izmēģinājumos vidējais auzu šķirņu ražības līmenis variēja no 4.2 līdz 6.8 t ha^{-1}, graudu tilpummasa – no 480 līdz 518 g l^{-1}, 1000 graudu masa – no 33.7 līdz 38.4g, plēkšņainība – 206 līdz 312 g kg^{-1}. Tikai četrām no pārbaudē iekļautajām auzu šķirnēm graudi atbilda pārtikas produktu ražošanas standartprasībām, t.i., ‘Arta’, ‘Freja’, ‘Jumbo’, ‘Vendela’.

Saimniecībās ievākto graudu paraugus kvalitātes rādītāji bija ievērojami zemāki nekā izmēģinājumos. Graudu ražības un kvalitātes rādītāji variēja atkarībā no saimniecībā pielietotās agrotehnikas. Pēc 2007. gada apsekojuma rezultātiem korelatīvās sakarības parādīja, ka graudu raža, tilpummasa un plēkšņainība ir rādītāji, kas ir ne tikai savstarpēji saistīti, bet arī būtiski atkarīgi no sējas laika, priekšauga un slāpekļa mēslojuma normas.

RESULTS FROM EVALUATION OF THE OAT VARIETY ‘STENDES DARTA’

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Abstract

The new oat variety ‘Stendes Darta’ (line No. L 28650) has been developed at the State Stende Cereals Breeding Institute. The variety is registered by the Plant Protection Service of Latvia (No. A-8 since 27.12.2004) and included in a catalogue of Plant varieties both of Latvia and EU in 2005. It is recommended for food and feed production.

The oat variety is a result of hybridisation and repeated selection work. During five consecutive years (1999 – 2003), this variety gave a significantly greater yield of grain than the standard variety ‘Laima’ (+ 0.44 t ha^{-1}, $Rs_{0.05}$ = 0.21 t ha^{-1}). On the average, line L 28650 was one to two days earlier, had higher lodging resistance (+ 2 points), and was more resistant to loose smut (on

artificial infection background), oat leaf crown rust and mildew (on natural infection background) than the standard variety 'Laima'. Oil content of the variety 'Stendes Darta' was high (on the average + 0.46% more than for the standard variety 'Laima'). The oat line showed stable yields and good competition with weeds under organic farming. Evaluation of the variety 'Stendes Darta' during test period (1999 – 2006) showed that the variety was plastic and might provide rather suitable yields under unfavourable growing conditions as in 2006.
The results of evaluation confirm that the oat variety 'Stendes Darta' may provide stable yields and good grain quality. Consequently, the variety is suitable for the growth in conventional and organic farming systems.

Key words: grain quality, oat variety, yield

Introduction

The goal of the Latvian oat breeding program is to develop high-yielding oat varieties resistant to lodging and diseases with corresponding grain quality suitable to local conditions. In the last ten years Latvian oat breeders have been offered a lot of high-yielding oat varieties of the intensive type developed in European countries, and several oat varieties developed in Stende among which most popular is the oat variety 'Laima', which excels in plasticity and capacity to provide medium high yields of grain under different growing conditions. Proceeding with the selection of the most promising lines, oat breeders wished to develop varieties higher in lodging resistance and quality of grain. Partly these wishes are realized in the oat variety 'Stendes Darta'.
In the Plant Variety Testing department of the State Plant Protection Service (VAAD) the new oat variety 'Stendes Darta' was registered to test value for cultivation and use (VCU tests) in autumn 2002. The author's right to the State Stende Plant Breeding Station was confirmed by VAAD in 27 December 2004, and the oat variety 'Stendes Darta' received the registration number A-8. This oat variety has been included in a catalogue of Plant varieties of Latvia since 1.01.2005. The authors of the oat variety 'Stendes Darta' – M. Gruntiņa, S. Zute, P. Buļbiks, S. Maļecka, J. Briedis.

Materials and Methods

The oat variety 'Stendes Darta' was developed at the State Stende Cereals Breeding Institute (till 2006 – at the State Stende Plant Breeding Station). In 1993, under field conditions using the hybridisation method a cross combination P4175: *PCU – 32 / L 24156* was obtained. PCU – 32 is an oat line of Polish origin, L 24156 is a line of Stende obtained from cross combination *Pantker // Bug / Parsival*. The oat varieties 'Pantker and 'Parsival' are developed by German oat breeders, but the oat 'Bug' is of Byelorussian origin.
Stages of selection work in breeding the oat variety 'Stendes Darta':
1993 – hybridisation under field conditions, five hybrid seeds were obtained;
1994 – using over-sowing, hybrids of F_1 generation were obtained;
1995 – using over-sowing, hybrids of F_2 generation were obtained;
1996 – using over-sowing, hybrids of F_3 generation were obtained, out of them elite plants were selected;
1997 – 12 elite plants progeny were sown in the breeding first year nursery, out of them six lines were selected for further sowing;
1998 – 6 best lines were sown in the breeding second year nursery, a plot size 2 m^2, in one replication, remains of the best three lines were combined giving them No. L 28650, which was sown in a previous variety testing, a plot size 10 m^2, in four replications;
1999–2004 – competitive variety trial, a plot size 10 m^2, in six replications;
2001–2004 – variety testing in crop rotation under organic management, a plot size 20 m^2, in four replications;
2003–2004 – testing of value for cultivation and use in plant variety testing stations in Valmiera, Saldus and Višķi;
2003–2004 – distinctness, uniformity, stability test (DUS test) by UPOV method in Poland.

2005–2006 – test of value for cultivation and use under organic farming system at the State Priekuļi Field Crops Breeding Institute and Study and Research Farm „Vecauce" of the Latvia University of Agriculture.

Oat breeding work was performed on crop rotation fields of the State Stende Cereals Breeding Institute. The soils are well cultivated, sod slightly podzolic loamy sand with pH_{KCl} of 5.4-6.6 in arable layer, organic matter 1.6–2.5%, plant available P_2O_5 183–355 mg/kg, K_2O 170–264 mg/kg, previous crop – potatoes.

Fertilization was carried out before sowing applying the mineral fertilizer *Kemira NPK 18:9:9*, calculated in nitrogen active ingredient 60 kg ha^{-1}. Weed control was done by harrowing performed twice (prior to oat seed germination and in the tillering stage of plant growth), and spraying with the herbicide *granstar* – 12 g ha^{-1}. Sowing was performed in optimal terms and grain was harvested using Sampo – 130. Phenological observations were done on the field. In the winter period, morphological, agronomic and technological properties of the oat grain were analysed in the laboratory of the institute.

Results and Disccusion

Out of the hybrid combination P 4175 elite plants' progeny, seeds of the best three lines: L 28600, L 28601, L 28602 (excess of the seed sown in the breeding 2nd year nursery) were combined and sown in a preliminary variety testing nursery giving to a line a new number L 28650. That year meteorological conditions were favourable for the growth and development of oat plants and line L 28650 was also recorded as among the most productive ones. This oat line produced a good grain yield 7.01 t ha^{-1} compare to 6.39 t ha^{-1} obtained from the standard variety 'Laima', $\gamma_{0.05}$ = 0.34. Oat plants of this line were characterized by a strong and stable stem, which was indicative of higher lodging resistance than that of the standard variety 'Laima'. This oat line was characterized by a uniform stand. Visual examination showed that the combined lines of oats had been phenotypically similar. These traits were the chief selection criteria, which allowed this oat line to be included in a competitive variety trial.

Competitive variety trial. Over the period of 1999 to 2003, the oat line L 28650 was investigated in a competitive variety trial. Meteorological conditions during five test years were comparatively different. This is indicated by fluctuations in the productivity levels both of the standard variety and the promising line (Table 1). In years less favourable to the growth and development of oats (1999 and 2002) grain yield obtained from the line L 28650 did not significantly differ from grain yield obtained from the standard variety 'Laima', respectively +0.03 and +0.16 t ha^{-1}, ($\gamma_{0,05}$ respectively 0.73 and 0.29 t ha^{-1}). But in years more favourable to oat development (2000, 2001 and 2003) the productivity of this line was significantly higher compare to the standard variety. Overall, in competitive variety trials the average productivity level of the line L 28650 significantly surpassed the productivity level of the standard variety. When analysing yield structural elements, oat breeders found on average 4 grains more in a panicle of the line L 28650 than in the panicle of the standard variety 'Laima'. The 1000 grain weight was equivalent to the standard variety 'Laima', respectively 33.99 and 33.66 g, but the 4-year average number of generative stems per 1 m^2 differed only by 15 stems for both oat varieties. Considering the seeding rate of 550 seeds per 1 m^2 suitable to oats, the results of the analysis showed that the tillering of plants in a sowing is not characteristic for both oat varieties.

Oat line L 28650 was an average by a day earlier and higher in lodging resistance (+2 points). Results of testing oats to loose smut (*Ustilago avenae*) on an artificial infection background showed that line L 28650 was highly resistant to this disease as not a single infected panicle was found in the experimental plots (for the standard variety 'Laima' – on average 5 panicles out of 100 plants). Line L 28650 also showed also resistance to oat leaf crown rust (*Puccinia coronifera*) and powdery mildew (*Erysiphe graminis*).

Table 1.Characteristics of the oat variety 'Stendes Darta' in competitive variety trial (1999-2003)

Indices	Varieties	Years					Mean
		1999	2000	2001	2002	2003	
Grain yield, t ha^{-1}	standard 'Laima'	3.54	5.33	5.25	4.28	5.32	5.05
	'Stendes Darta'	3.57	5.95	5.67	4.44	5.90	5.49
+/- t ha^{-1} to 'Laima'	'Stendes Darta'	+0.03	+0.62	+0.42	+0.16	+0.58	+0.44
	$\gamma_{0,05}$=	0.73	0.34	0.41	0.29	0.29	0.21
1000 grain weight, g	standard 'Laima'	34.30	38.50	29.10	34.59	32.47	33.66
	'Stendes Darta'	34.90	36.80	29.70	35.13	34.34	33.99
Volume weight, g l^{-1}	standard 'Laima'	510.0	506.0	453.0	511.0	495.5	491.4
	'Stendes Darta'	521.0	507.0	468.0	524.0	500.0	499.8
Hull content, %	standard 'Laima'	23.50	24.00	25.90	25.00	25.20	25.03
	'Stendes Darta'	22.00	24.50	25.50	24.20	24.70	24.73
Crude protein content, %, (x 5,7)	standard 'Laima'	10.40	11.63	11.64	10.01	11.15	11.11
	'Stendes Darta'	10.85	10.59	12.43	10.52	10.41	10.99
Crude fat content, %	standard 'Laima'	6.31	5.97	5.45	6.36	5.70	5.87
	'Stendes Darta'	6.63	6.61	5.37	6.74	6.20	6.23
Plant height, cm	standard 'Laima'	90	112	106	95	115	107
	'Stendes Darta'	82	118	107	95	119	104
Spikelets per panicle, pieces	standard 'Laima'	*	32.0	13.4	22.6	21.8	22.5
	'Stendes Darta'	*	36.4	20.0	25.8	23.8	26.5
Number of generative tillers per 1 m^2	standard 'Laima'	*	520	610	528	504	540
	'Stendes Darta'	*	474	626	516	485	525
Resistance to *Ustilago avenae*, panicles /100 plants	standard 'Laima'	25	11	8	0	0	5
	'Stendes Darta'	0	0	0	0	0	0
Days from sowing to heading	standard 'Laima'	103	105	110	94	108	104
	'Stendes Darta'	103	104	109	92	107	103

Husk content, volume weight, crude protein and crude fat contents are the most important quality characteristics of the oat grain yield. The oat line L 28650 showed that hull content in the grain yield was lower than in the yield of the standard variety 'Laima', respectively 24.73 and 25.03% on the average in five test years. The highest hull content was recorded in 2001, respectively 25.50 and 25.90%. That year this parameter somewhat exceeded the maximum limit value - 25% of the grain hull content standard set by the holding company „Rīgas dzirnavnieks".

Results of the oat grain chemical quality evaluation showed, that line L 28650 had a tendency to accumulate more fat in grain than the standard variety 'Laima' did. The crude fat content in grain dry matter was on average by 0.46% higher than that of the variety 'Laima'. (In the following test years it was found that starch content in the grain of the oat 'Stendes Darta' was also by 2 to 4% higher than in the oat 'Laima'.) This gives evidence that the grain of the new oat variety is higher in energy value, which is an important showing when using grain for animal feed.

Starting research in organic farming systems, variety testing of cereals in organic crop rotation was established at the State Stende Plant Breeding Station in 2001 to study the suitability of oat varieties and promising lines released in Latvia to this farming system. Results of testing oat line L 28650 and the standard variety 'Laima' under organic conditions (Table 2) also showed a tendency that yielding capacity of the promising line between years was equal to that of the standard variety and on average in the three test years even significantly surpassed the standard (+ 0.32 t ha^{-1}, $\gamma_{0,05}$ = 0.24 t ha^{-1}). Line L 28650 was high in lodging resistance. The uniform stand of this oat line contributed to weed suppression, which is a good precondition to recommend the variety for growing under organic conditions. The evaluation of grain quality characteristics show the increase in husk content under conditions of limited nutrient levels in the soil. However, this 3-year average

index for the line was by 0.5% lower compared to the standard variety. Values of other analysed parameters are presented in Table 2.

Table 2. Oat variety testing under organic farming conditions (Stende, 2001-2004)

Indices	Varieties	Years			
		2002	2003	2004	Mean
Grain yield, t ha^{-1}	standard 'Laima'	2.66	3.24	4.37	3.42
	'Stendes Darta'	2.76	3.87	4.59	3.74
+/- t ha^{-1} to 'Laima'	'Stendes Darta'	+0.1	+0.63	+0.22	+0.32
	$\gamma_{0,05}$=	0.32	0.57	0.29	0.24
Grain result above 1.9 x 2 mm sieve, %	standard 'Laima'	89.9	96.2	95.2	93.7
	'Stendes Darta'	89.1	93.8	89.0	90.6
1000 grain weight, g	standard 'Laima'	34.20	34.05	34.90	34.4
	'Stendes Darta'	33.40	34.80	34.70	34.3
Volume weight, g l^{-1}	standard 'Laima'	506.0	506.0	515.0	509.0
	'Stendes Darta'	496.0	502.0	503.0	500.0
Husk content in yield, %	standard 'Laima'	28.9	27.3	25.4	27.2
	'Stendes Darta'	27.4	27.1	25.6	26.7
Crude protein content, %, (x 5,7)	standard 'Laima'	12.3	10.2	11.1	11.2
	'Stendes Darta'	12.0	10.4	10.3	10.9

Results obtained in the competitive variety trial nursery and in other experiments showed that the oat line L 28650 combines several traits due to which this line surpassed the standard variety 'Laima' and which are significant for grain breeders and consumers, such as lodging resistance, high disease resistance, lower hull content and somewhat, but at the same time significantly, a higher productivity level.

State variety trial**.** The oat line L 28650 with the denomination 'Stendes Darta' (initially also 'Dārta') in 2003 was brought to the Plant Variety testing department of VAAD to test value for cultivation and use under conventional farming conditions in variety testing institutions in Valmiera, Višķi and Saldus. The 2-year trial results obtained in different regions of Latvia (Table 3) indicated that the productivity level of the oat variety 'Stendes Darta' was equal to the standard variety 'Laima'. On average in the two evaluation years in three trial sites the oat variety 'Stendes Darta' produced grain a yield 5.22 t ha $^{-1}$ or by 0.13 t ha $^{-1}$ more compare to the grain yield produced by the standard variety 'Laima' ($\gamma_{0,05}$ = 0.20 t ha^{-1}). The highest grain yield was obtained in 2004 in trials at the Saldus Variety Testing Station in Kurzeme, lowest – in 2003 in trials in Višķi secondary agricultural school in Latgale.

Table 3. Grain yield of the oat variety 'Stendes Darta' in the State Variety Testing for conventional farming system, t ha $^{-1}$ (2003-2004)

Testing site	Varieties	Years		
		2003	2004	Mean
Saldus	standard 'Laima'	6.17	6.24	6.21
	'Stendes Darta'	6.38	6.65	6.52
	+/- t ha^{-1} to 'Laima'	+0.21	+0.41	+0.31
	$\gamma_{0,05}$=	0.33	0.27	0.21
Višķi	standard 'Laima'	4.31	5.04	4.68
	'Stendes Darta'	4.44	4.88	4.66
	'Stendes Darta'	0.13	- 0.16	-0.02
	$\gamma_{0,05}$=	0.75	0.83	0.56
Valmiera	sstandard 'Laima	4.75	4.83	4.79
	'Stendes Darta'	4.96	4.74	4.85
	standard 'Laima'	*	*	*
	'Stendes Darta'	0.21	-0.09	0.06
	$\gamma_{0,05}$=	0.22	0.18	0.14

To evaluate its suitability for organic farming, in 2005 and 2006 the oat 'Stendes Darta' was investigated in the State Variety Testing trials in LLU Study and Research Farm „Vecauce" and the State Priekuli Field Crops Breeding Institute on fields certified for organic farming. The results of these trials confirmed evaluation results beforehand stated by Stende oat breeders that the oat variety 'Stendes Darta' also in organic farming system show yield capacity equal to the standard variety 'Laima' (Table 4).

Table 4. Grain yield of the oat variety 'Stendes Darta' in the State Variety Testing for organic farming system, t ha $^{-1}$ (2005-2006)

Testing site	Varieties	Years		
		2005	2006	Mean
Vecauce	standard 'Laima'	5.08	4.68	4.88
	'Stendes Darta'	5.65	4.69	5.17
	+/- t ha^{-1} to 'Laima'	+ 0.57	+ 0.01	+ 0.29
	$\gamma_{0,05}$:	0.66	0.35	0.37
Priekuļi	standard 'Laima'	2.79	3.05	2.92
	'Stendes Darta'	2.69	3.08	2.89
	+/- t ha^{-1} to 'Laima'	- 0.10	+ 0.03	- 0.03
	$\gamma_{0,05}$:	0.40	0.57	0.35

On average in the two evaluation years in two test sites the grain yield of the oat 'Stendes Darta' was 4.03 t ha $^{-1}$, which by 0.13 t ha $^{-1}$ outyielded the standard variety 'Laima' ($\gamma_{0,05}$ = 0.25 t ha^{-1}). In observation years, the grain yield of the oat 'Stendes Darta' fluctuated from 2.69 t ha $^{-1}$ (in 2005 in Priekuļi) to 5.65 t ha $^{-1}$ (in 2005 in Vecauce).

The results from the evaluation of the oat grain quality characteristics in different variety testing sites showed, that hull content in the grain yield of the oat 'Stendes Darta' was on average by 0.8–1.1% lower than in the grain yield of the standard variety 'Laima' (Table 5). In case of breeding oats by conventional farming methods, this index corresponded to food industry requirements (<25%). In trials established on fields under organic farming conditions, hull content in the grain yield was 25% higher both for the standard variety and oat variety 'Stendes Darta'. Results of grain chemical analysis from two variety testing sites, Saldus and Valmiera, showed that on average in two testing years the grain of the oat 'Stendes Darta' accumulated by 2.1 to 3% more starch compare to the standard variety. Results of any other parametres analysed for chemical composition were equal to those of the standard variety when research was conducted both by conventional and organic farming methods.

Table 5. Grain quality of the oat variety 'Stendes Darta' in the State Variety Testing for conventional and organic farming systems (on the average of 2003-2004 and 2005-2006)

Indices	Varieties	Testing site for conventional farming system			Testing site for organic farming system	
		Saldus	Višķi	Valmiera	Priekuļi	Vecauce
Volume weight, g l^{-1}	standard 'Laima'	470.0	454.5	501.5	492.0	505.0
	'Stendes Darta'	445.0	486.0	495.0	493.0	517.0
Husk content in yield, %	standard 'Laima'	25.50	24.80	25.80	28.00	26.30
	'Stendes Darta'	24.70	23.00	24.70	28.00	27.10
Crude protein content,	standard 'Laima'					
%, (x 5,7)	'Stendes Darta'	12.60	12.55	11.35	11.90	14.2
		12.60	12.70	11.40	11.80	13.80
Crude fat content, %	standard 'Laima'	6.7	5.9	6.75	6.50	5.60
	'Stendes Darta'	6.66	6.1	6.60	6.50	5.90
Starch content, %	standard 'Laima'	46.2	53.5	47.0	39.2	40.3
	'Stendes Darta'	48.3	52.4	50.0	40.8	39.3
	standard 'Laima'					
Resistance to lodging ,	'Stendes Darta'	6	4.5	7	9	9
1-9 points		6	5	8	9	9

Results from lodging resistance evaluation showed, that under conventional farming conditions the oat 'Stendes Darta' was by 0.5 to 1 point higher in resistance. In the organic farming system, lodging was not identified in oat trials.

Conclusion

The oat variety 'Stendes Darta' (till the year 2002 line L 28650), which was developed at the State Stende Cereals Breeding Institute over the period from 1993 to 2002 and has been successfully investigated in VCU and DUS tests, is recommended for food and feed grain production in conventional and organic farming systems. Results of the variety trial in Stende and other regions of Latvia suggest that the grain productivity level of the oat 'Stendes Darta' is equal or in particular years significantly higher than the productivity level of 'Laima' – the oat variety most widely bred in Latvia. The oat variety 'Stendes Darta' combines several traits due to which it surpasses the standard variety 'Laima' and which are important for grain breeders and consumers, i.e., better lodging resistance, high disease resistance and lower hull content.

References

1. Zute, S., Strazdina, V., Bleidere, M. (2005) Results of cereal varieties breeding at the State Stende Plant Breeding Station in 2004. *Plant Breeding and seed science*, IX, Jogeva Plant Breeding Institute, pp. 97-98;
2. Zute, S. (2005) Katrs audzētājs var izvēlēties visatbilstošāko auzu šķirni. Saimnieks – Ražība, 2., 9.-11.lpp.
3. Augu šķirņu saimniecisko īpašību novērtēšanas rezultāti 2003. gadā. (2004.), Valsts Augu aizsardzības dienests, Rīgā, 34-35.
4. Augu šķirņu saimniecisko īpašību novērtēšanas rezultāti 2004. gadā. (2005.), Valsts Augu aizsardzības dienests, Rīgā, 46-48.
5. Augu šķirņu saimniecisko īpašību novērtēšanas rezultāti 2005. gadā. (2006.), Valsts Augu aizsardzības dienests, Rīgā, 133-135.
6. Augu šķirņu saimniecisko īpašību novērtēšanas rezultāti 2006. gadā. (2007.), Valsts Augu aizsardzības dienests, Rīgā, 116-117.

AUZU ŠĶIRNE 'STENDES DARTA' UN TĀS VĒRTĒŠANAS REZULTĀTI

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Auzu šķirne ' Stendes Darta' (līnja Nr.28650) ir izveidota Valsts Stendes graudaugu selekcijas institūtā. Tā reģistrēta Valsts Augu aizsardzības dienesta (reģ. Nr. A-8 no 27.12. 2004.) un iekļauta Augu šķirņu katalogā no 2005. gada. Šķirne ir rekomendēta pārtikas un lopbarības graudu ieguvei. Šķirne izveidota hibridizācijas un vairākkārtējas izlases rezultātā. Novērojumi no 1999. līdz 2003. gadam rāda, ka jaunā šķirne ir būtiski ražīgāka nekā standartšķirne 'Laima' (+0.44 t ha $^{-1}$, $Rs_{0.05}$ = 0.21 t ha^{-1}). Vidēji pārbaudes periodā līnija L 28650 bija par divām dienām agrīnāka, ar augstāku veldres noturību (+ 2 balles) un augstāku izturību pret putošo melnplauku, auzu lapu vainagrūsu un miltrasu. Šķirnei raksturīgs augsts tauku saturs graudos (vidēji +0.46%, salīdzinot ar šķirni 'Laima'). Šķirne 'Stendes Darta' ir parādījusi stabilus ražības rādītājus un labu konkurētspēju ar nezālēm arī bioloģiskās saimniekošanas apstākļos.