



Request for Support for Registration of OT3115

Crop: Oat (*Avena sativa* L.)
Type: Spring, hulled (Milling)

Proposers: A.D. Beattie
Crop Development Centre
University of Saskatchewan
51 Campus Drive
Saskatoon, SK. S7N 5A8

Test #'s: OT3115 or SA172419
Pedigree: OT3073 x OT3076

Area of Adaptation: Western Canada

Description:

OT3115 is a high β -glucan, low oil and moderate protein oat line that combines good groat percentage, good kernel weight, high plumps and very low thins. It shows very good yield potential, short height, very good lodging resistance and moderate maturity. **OT3115** also demonstrates moderate resistance to crown rust and resistance to smut and BYDV.

Strengths:

- Very good grain yield (\geq AC Morgan and CS Camden).
- Very good resistance to lodging (= CS Camden).
- Very short plant height (= Summit).
- Very good plumpness (= Summit) and low thins (< checks).
- Low groat oil content (= AC Morgan).
- Excellent groat β -glucan content (> checks).
- Moderately resistant to crown rust and resistant to smut and BYDV.

Neutral characteristics:

- Maturity (similar to Summit).
- Kernel weight (similar to CS Camden).
- Test weight (similar to AC Morgan).
- Groat % (> AC Morgan and CS Camden, < Summit).
- Groat protein (= Summit).
- Groat TDF (= CS Camden).

Weaknesses:

- Susceptible to stem rust (= AC Morgan and CS Camden).

Table 1. Grain yield for OT3115 and checks from the 2020 WCORT.

Entry	Black Soil Zone		Black & Grey Zone		Brown Soil Zone		Irrigated		Combined	
	kg/ha	%Camden	kg/ha	%Camden	kg/ha	%Camden	kg/ha	%Camden	kg/ha	%Camden
AC Morgan	6351	95	7150	109	4507	106	7932	87	6305	98
Summit	6269	94	6650	102	4291	100	7631	83	6102	95
CS Camden	6694	100	6547	100	4271	100	9165	100	6452	100
OT3115	7013	105	7239	111	4476	105	7658	84	6651	103
Station years	6		2		2		2		11	

Table 2. Grain yield for OT3115 and checks from the 2021 WCORT.

Entry	Black Soil Zone		Black & Grey Zone		Brown Soil Zone		Irrigated		Combined	
	kg/ha	%Camden	kg/ha	%Camden	kg/ha	%Camden	kg/ha	%Camden	kg/ha	%Camden
AC Morgan	4923	98	4793	120	2822	97	8417	121	4835	104
Summit	4112	82	3484	87	2021	69	6380	92	3824	82
CS Camden	5039	100	4000	100	2916	100	6951	100	4638	100
OT3115	4969	99	4255	106	2739	94	7964	115	4706	101
Station years	6		2		2		1		11	

Table 3. Grain yield for OT3115 and checks from the 2020 and 2021 WCORT.

Entry	Black Soil Zone		Black & Grey Zone		Brown Soil Zone		Irrigated		Combined	
	kg/ha	%Camden	kg/ha	%Camden	kg/ha	%Camden	kg/ha	%Camden	kg/ha	%Camden
AC Morgan	5637	96	5971	113	3664	102	8174	101	5570	100
Summit	5190	88	5067	96	3156	88	7006	87	4963	90
CS Camden	5866	100	5274	100	3594	100	8058	100	5545	100
OT3115	5991	102	5747	109	3607	100	7811	97	5678	102
Station years	12		4		4		2		22	

Table 4. Agronomic characteristics for OT3115 and checks from the 2020 WCORT.

Entry	Days to Head	Days to Mature	Height (cm)	Lodging (1 - 9)	Test Wt. (kg/hl)	Kern. Wt. (mg)	Plump (%)	Thins (%)	Groat (%)
AC Morgan	54	90	104.0	2.3	58.0	37.7	79.3	4.9	70.4
Summit	51	92	95.1	2.7	58.7	34.8	80.4	5.6	74.1
CS Camden	51	87	100.0	1.9	56.9	36.7	73.9	6.0	70.1
OT3115	53	90	97.7	2.0	57.3	35.7	80.8	5.8	71.9
Station years	6	9	11	6	11	11	6	6	6

Table 5. Agronomic characteristics for OT3115 and checks from the 2021 WCORT.

Entry	Days to Head	Days to Mature	Height (cm)	Lodging (1 - 9)	Test Wt. (kg/hl)	Kern. Wt. (mg)	Plump (%)	Thins (%)	Groat (%)
AC Morgan	57	87	78.6	1.6	56.6	40.3	80.3	3.3	71.5
Summit	53	84	76.6	1.6	60.2	39.2	84.6	2.7	76.5
CS Camden	54	82	76.0	1.3	55.5	39.4	83.0	2.6	70.3
OT3115	55	85	75.2	1.3	56.4	39.6	84.6	2.7	72.8
Station years	8	9	10	4	11	11	6	6	6

Table 6. Agronomic characteristics for OT3115 and checks from the 2020 and 2021 WCORT.

Entry	Days to Head	Days to Mature	Height (cm)	Lodging (1 - 9)	Test Wt. (kg/hl)	Kern. Wt. (mg)	Plump (%)	Thins (%)	Groat (%)
AC Morgan	55.5	88.4	91.3	2.0	57.3	39.0	79.8	8.0	70.9
Summit	52.0	88.0	85.9	2.2	59.5	37.0	82.5	8.3	75.3
CS Camden	52.6	84.4	88.0	1.6	56.2	38.0	78.4	8.7	70.2
OT3115	53.6	87.8	86.5	1.7	56.9	37.7	82.7	2.6	72.3
Station years	14	18	21	10	22	22	12	12	12

Table 7. Grain quality characteristics for OT3115 and checks from the 2020 and 2021 WCORT.

Entry	Protein			Oil			β-Glucan			TDF
	2020 (%db)	2021 (%db)	Mean (%db)	2020 (%db)	2021 (%db)	Mean (%db)	2020 (%db)	2021 (%db)	Mean (%db)	2021 (%db)
AC Morgan	15.3	17.2	16.3	6.0	6.5	6.2	4.0	4.4	4.2	9.5
Summit	15.8	18.1	16.9	7.3	7.5	7.4	4.7	4.8	4.8	9.6
CS Camden	16.9	19.3	18.1	7.0	7.4	7.2	5.0	5.2	5.1	10.3
OT3115	15.2	18.4	16.8	6.1	6.2	6.1	5.5	5.4	5.5	10.1
Station years	6	6	12	6	6	12	6	6	12	3

Table 8. Disease reaction summary for OT3115 and checks from the 2020 and 2021 WCORT.

Entry	Year	BYDV (1-9)	Smut (%)	Oat Crown Rust									Oat Stem Rust						
				Field Rating	Greenhouse							Field Rating	Greenhouse						
					CR1 3	CR 223	CR 241	CR 249	CR 254	CR 257	CR 258		CR 259	NA 8	NA 16	NA 25	NA 27	NA 28	NA 67
AC Morgan	2020	-	0	5S	4+	4	4+	0	4+	4	4+	4+	80S	4	4	4	34	4	4
AC Morgan	2021	2.5	-	10S	4	4	4++	4++	4++	4+	4	4+	30S	34	34	4	34	4	34
Summit	2020	-	0	1S	0	0	0	-	0	0	04F	0	30MS	1-	1-	11+	2-2	1-	4
Summit	2021	3.0	0	15S	0(4)	0	;	0	;	;	4-	0	3I	11+	12-	1-	2-2	--	34
CS Camden	2020	-	0	1MR	0	0	2	-	2	0(3)	;	;	70S	34	34	4	34	4	4
CS Camden	2021	3.5	0	5MS	;	0	2++	4	3--	3--	1	2++	15S	34	34	4	34	34	34
OT3115	2020	-	0	2MR	0	0	;	0	0	4+	;	0	40MS	33+	34	4	33+	34	34
OT3115	2021	2.0	0	2MR	0	0	;	0	2	4	;	0(4)	15S	11+	34	33+	33+	34	34