

Triticale 118
Resource Seeds, Inc.

B. Origin and Breeding History of "118" Triticale.

Triticale 118 (97TV38011) triticale is derived from a cross made within germplasm obtained from the International Maize and Wheat Improvement Center(CIMMYT).

In 1992, a plant of genealogy AR/SPY6//11TSN79-3/C-2 was crossed to a plant noted as PIKA"S"/YOGUI"S"/LT978.82/ASAD"S"/TARASCA87. The resultant F1 and subsequent generations were advanced using the pedigree method of selection practiced at both Woodland and Gonzales, California.

An F4 generation head row, from an F3 derived plant selection, was bulk harvested and yield tested in the California Central Valley in 1997. It was at this time the experimental designation 97TV38011 was assigned to this experimental line. The complete genealogy for this triticale is AR/SPY6//11TSN79-3/C-2/3/PIKA"S"/YOGUI"S"/LT978.82/ASAD"S".

The seed purification program for 97TV38011 was begun in 1998, whereupon 24 heads were taken from yield trial plots in our Intermediate Yield Trial Nursery. Eight individual head rows were selected and bulked as potential varietal candidates. These were entered into yield trials in year 2000 and subsequently, one line was selected to become 118. Pre-breeder seed was produced in Woodland in 2003, followed by Breeder seed in 2004 and Foundation in 2005.

The variety appears to be uniform and stable, but can have some taller variants at a frequency of no more than 0.5%.

C. Mature Plant Comparisons of 118 to Other Triticale Varieties.

Triticale 118 can be characterized in comparison with commercial “check” varieties of triticale now grown in California, “96”, “105”, and “111”. As shown in Tables 1 and 2a and 2b, 118 typically has high test weight and low kernel weight compared to the commercial checks, although growing conditions for a given year and location often differentially affect grain fill of different varieties depending on maturity and tolerance to biotic and abiotic stress. Heading date, plant height, and lodging of 118 are intermediate among the commercial checks, and most similar to “111” (Tables 1, 2c-e).

Comparison of Triticale 118 to Commercial Check Varieties

Table 1. University of California Regional Trial Data - 2004

Variety	Test Wt. (10)*	Kernel Wt. (5)*	Dates (From Jan 1)		
			Heading (2)*	Plant Ht. (9)*	Lodging (6)*
118	58.6	42.9	86	39.3	1.5
105	58.2	47.4	89	41.6	2.4
111	(9)* 55.8	47.0	88	40.6	1.2
96	57.7	42.4	84	34.8	1.0

* Number of Observations.

Table 2a. University of California Regional Trial Data – 2005
Test Weight

Name	Delta	Fresno Test Wt (lbs/bu)	Kings	Kern
<u>CULTIVARS</u>				
105	58.3	59.5	54.7	58.4
96	60.6	59.0	59.5	60.1
118	62.4	60.6	58.9	59.3
CV	2.0	0.7	1.5	1.1
LSD (.05)	2.4	0.9	1.7	1.3

Triticale 118
Resource Seeds, Inc.

C. Mature Plant Comparisons of 118 to Other Triticale Varieties. CONTINUED

Table 2b University of California Regional Trial Data – 2005
Kernel Weight

Name	Kings
	1000 Kernel Wt (g)
<u>CULTIVARS</u>	
105	41.9
96	42.8
118	38.1
CV	5.6
LSD (.05)	4.1

Table 2c. University of California Regional Trial Data – 2005
Heading Date

Name	UCDavis
	Days to Head (from Jan/1)
<u>CULTIVARS</u>	
105	90
96	82
118	89
CV	1.9
LSD (.05)	1

Triticale 118
Resource Seeds, Inc.

C. Mature Plant Comparisons of 118 to Other Triticale Varieties. CONTINUED

Table 2d. University of California Regional Trial Data – 2005
Plant Height

	Delta	Fresno	Kings	Kern
Name				
		Plant Ht (in)		
<u>CULTIVARS</u>				
105	49	42	43	48
96	39	34	38	40
118	44	38	40	43
CV	3.7	6.7	5	9.9
LSD (.05)	3	5	4	8

Table 2e. University of California Regional Trial Data – 2005
Lodging

	Delta	Fresno	Kings	Kern
Name				
		Lodging harvest		
<u>CULTIVARS</u>				
105	1.0	1.0	2.8	3.5
96	1.0	1.0	1.0	1.0
118	1.0	1.0	1.3	1.0
CV	43.2	45.9	27.3	25.6
LSD (.05)	1.1	1.2	1.3	1.2

Rating scale 1 = 0-3%, 2 = 4-14%, 3 = 15-29%, 4 = 30-49%, 5 = 50-69%, 6 = 70-84%, 7 = 85-95%, 8 = 96-100%.

E. Area of Adaptation and Primary use of Variety.

Triticale 118 is adapted to the San Joaquin Valley of California and will be marketed there for production of silage harvested in the soft dough stage, for which grain yield is a key attribute. Determination of possible additional areas of adaptation awaits further testing. The high grain yield potential of triticale 118 suggests that the variety may have potential for grain production if markets for triticale grain can be developed in its area of adaptation.

2004 UC REGIONAL COMMON WHEAT AND TRITICALE TEST								
Name	LOCATIONS							
	Delta		Madera		Kings		Kern	
	LBS/ACRE	% of 105 Check	LBS/ACRE	% of 105 Check	LBS/ACRE	% of 105 Check	LBS/ACRE	% of 105 Check
YECORA ROJO	240	12%	2460	77%	3050	61%	2920	50%
SUMMIT	4180	201%	4030	127%	6880	139%	6910	119%
TRICAL 105	2080	100%	3180	100%	4960	100%	5830	100%
TRICAL 96	3250	156%	3020	95%	6900	139%	6210	107%
TRICAL 111	4010	193%	3050	96%	5330	107%	4990	86%
TRICAL® 118	5790	278%	4430	139%	7660	154%	6250	107%
CV	25.7		11.8		13.4		8.2	
LSD(.05)	930		590		970		660	

PRELIMINARY YIELDS (LB/ACRE), 2005 UC REGIONAL WHEAT AND TRITICALE TESTS

NAME	LOCATIONS							
	SAC/SJ DELTA		FRESNO		KINGS		KERN	
	LBS/ACRE	% of 105 Check	LBS/ACRE	% of 105 Check	LBS/ACRE	% of 105 Check	LBS/ACRE	% of 105 Check
YECORA ROJO	2478	42%	4600	82%	3762	86%	3957	70%
SUMMIT	6034	102%	5595	99%	5464	125%	6482	114%
TRICAL 105	5915	100%	5627	100%	4382	100%	5681	100%
TRICAL 96	7042	119%	5152	92%	7403	169%	7003	123%
TRICAL 118	7887	133%	5739	102%	8166	186%	7683	135%
CV	8.8		14.1		8.8		8.7	
LSD (.05)	610		1020		540		610	

Triticale 118
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F. Seed Stock.

RSI will maintain Breeder seed that will be generated periodically from composited head row purification plantings as needed. Foundation seed can be used to produce one additional generation of the Foundation class. Registered and Certified will be limited to one generation.

I. Seed Sample Attached.

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Additional Narrative Description of Triticale 118

Triticale "118", currently marketed as one of the TRICAL® brand of forage triticale, is a spring-type, awned triticale that is fall-planted in the San Joaquin Valley of California. Its juvenile growth is erect, and at boot stage 118 is blue green, with leaves having a waxy bloom. Flag leaf is twisted and leaf carriage is upright. Stems of 118 do not have anthocyanin, and its necks are wavy and moderately hairy. Heads are middense and fusiform, with yellow awns. Glumes are tan and slightly pubescent. Seed of 118 is typically slightly wrinkled, amber, elliptical, with a brush that is midsize and midlong.