

REQUEST FOR SUPPORT OF REGISTRATION OF C99037

CROP KIND: Annual canarygrass

TYPE: Glabrous

PROPOSER: P. Hucl;

CDC, Univ. of Saskatchewan, Saskatoon, SK, S7N 5A8

TEST NUMBERS: C99037

PEDIGREE: CDC Maria/CY184

C99037 was selected from the cross CDC Maria/CY184 made in 1995 at the University of Saskatchewan using the approach method. CY184 was selected from the same sodium azide – treated bulk population of Keet seed as was CDC Maria. CY184 was similar to the cultivar Keet in agronomic performance, based on limited testing (two sites in 1997). CY184 has yellow seed and pubescent hulls while CDC Maria has brown seed and glabrous hulls. The F₁ plants were screened for pubescent hulls (dominant morphological marker). F₂ families derived from each F₁ plant were screened for segregation of hull pubescence and seed colour. The F₂ and F₃ generations were grown in a growth room. C99037 is derived from a bulked F₄ panicle hill which was tested in an F₅ plot in 1998. C99037 was evaluated in replicated yield tests from 1999 to 2005 (Table 1). C99037 is brown-seeded and glabrous. C99037 was selected on the basis of higher grain yield in the F₅ generation and up.

AREA OF ADAPTATION: Annual canarygrass growing regions of western Canada, particularly under drier conditions.

STRENGTHS: Increased yield compared to CDC Maria, particularly under drier conditions.

WEAKNESSES: Over-all grain yield no greater than CDC Togo.

DESCRIPTION: C99037 is a glabrous annual canarygrass line that yielded, on average, 10.6 % higher than CDC Maria over 32 trials (Table 1) in Saskatchewan. C99037 yielded 21.0% higher than CDC Maria in low yield environments, primarily during the drought years of 2001 to 2003 (8 of 11 trials). For the remaining site-years (n=21) C99037 yielded 8.5% higher than CDC Maria (Table 1). Relative to CDC Togo, C99037 yielded 7.9% higher and 2.0% lower in the contrasting environments. C99037 had a similar maturity, plant height, test weight and kernel weight to CDC Maria and CDC Togo (Table 1).

Table 1. Agronomic performance of C99037, CDC Maria and CDC Togo in replicated tests, 1999-2005

Cultivar	<u>Grain yield</u> kg/ha	<u>Grain yield</u> kg/ha	<u>Grain yield</u> kg/ha	<u>Heading</u> days	<u>Maturity</u> days	<u>Height</u> cm	<u>Test wt.</u> kg/hL	<u>Kernel wt.</u> mg
	Low yield	High yield	All					
CDC Maria	619	1565	1240	55.0	96.3	95.1	70.2	7.3
CDC Togo	701	1725	1373	56.9	98.0	96.5	69.5	8.0
C99037	749	1698	1372	55.8	97.2	97.0	70.6	7.4
# of sites	11	21	32	19	16	21	17	17

Low yield environments = trials where average grain yield was less than 1000 kg/ha

High yield environments = trials where average grain yield was greater than 1000 kg/ha

Testing protocols: In the absence of a Canaryseed Registration Test (as of 1994), testing was coordinated by the CDC, University of Saskatchewan. Five organizations contributed testing (see Table 2). Trials with grain yield Coefficients of Variation less than 20% (average CV = 9.8% over 32 tests) were retained. The test protocols were as follows:

AAFC, CDC and IHARF sites: 3 replicate 6X6 Lattice design; except 1999 where a 32 entry RCBD was used. Plot dimensions same as those used for spring cereal Registration Tests. RVT sites: 2 replicate RCBD design. Plot dimensions same as those used for spring cereal Registration Tests. The test cooperators were: AAFC Scott (A. Kapiniak); Swift Current: 1999 SPARC (R. DePauw), 2005 Wheatland Conservation Area Inc; IHARF: W. May. SWP: Watrous: K. Hanson, RVT: S. Piché. CDC: P. Hucl.