

*estris* pv. *malvacearum* (Smith) Dye, the causal agent of bacterial blight. Resistance to these races conveys resistance to all known U.S. races of this pathogen. In subsequent tests, Arkot 8918 and Arkot 9103 have not exhibited symptoms of bacterial blight in testing even after field inoculations with the pathogen. In the presence of intense thrips (*Frankliniella* spp.) pressure in 2000, both lines yielded significantly more fiber and had less relative plant injury than Stoneville 474. With less thrips pressure, differences were not significant in 1999.

The superior fiber properties and specific adaptation of Arkot 8918 and Arkot 9103 should make them valuable as breeding lines. Small quantities of Arkot 8918 and Arkot 9103 seed may be obtained for breeding purposes from the corresponding author.

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F.M. BOURLAND\* AND N.R. BENSON

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Northeast Research and Extension Center, P.O. Box 48, Keiser, AR 72351. Registration by CSSA. Accepted 31 Jan. 2002. \*Corresponding author (bourland@uark.edu).

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### Registration of GC-86L-98 Cowpea Germplasm Resistant to *Cucumber mosaic virus* and Blackeye cowpea mosaic virus

Cowpea [*Vigna unguiculata* (L.) Walp.] germplasm line GC-86L-98 (Reg. no. GP-225, PI 612607) was developed by the USDA, ARS, Plant Genetic Resources Conservation Unit, Griffin, GA, and released in August 2001. This line has value as a parent because of its resistance to *Cucumber mosaic virus* (CMV) and its high resistance to Blackeye cowpea mosaic virus (BICMV). Infection of cowpea by these two viruses causes cowpea stunt, the most serious disease of cowpea in the USA. Resistance to CMV had not previously been reported (Gillaspie, 2001).

GC-86L-98 was selected from PI 441918 which was first observed to be a possible resistant line in a germplasm regeneration plot in a 1998 field planting. PI 441918 is a large-seeded cowpea originating in Brazil and having a 105-d maturity. PI 441918 is a mix of tan and white seeds of the same size and shape. The seeds in the seed lot of PI 441918 grown in 1998 were separated by color and tested in the greenhouse. Mechanically-inoculated plants from PI 441918 with white seeds had lower amounts of CMV as judged by enzyme-linked immunosorbent assay (ELISA) than did plants of a susceptible control 'Coronet' or PI 441918 with tan seeds. In field tests in 1999 and 2000 in which plants of Coronet were inoculated with CMV and BICMV and used as spreader rows, plants arising from white-seeded PI 441918 had a significantly lower number of plants infected with CMV than did Coronet. Tan-seeded PI 441918 plants also had lower numbers of plants infected with CMV than did Coronet. Neither of the PI 441918 selections were infected with BICMV in these tests (Gillaspie, 2001).

GC-86L-98 (PI 441918-white seed) is a high seed producer and the line produces only white seeds. GC-86L-98 produces a round, solid color, smooth seed with a 100-seed weight of 24.8 g. The pods are 24 cm long and borne above the foliage. Plants are semiprostrate with a height of 15 cm.

A sample of 50 seeds of GC-86L-98 will be available for breeding and research purposes by writing to the corresponding author.

A.G. GILLASPIE, JR.\*

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USDA, ARS, Plant Genetic Resources Conservation Unit, 1109 Experiment St., Griffin, GA 30223. Registration by CSSA. Accepted 31 Jan 2002. \*Corresponding author (s9gg@ars-grin.gov).

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### Registration of AR91017 Winter Rapeseed Germplasm

AR91017 (Reg. no. GP-8, PI 619618) winter rapeseed [*Brassica napus* L. subsp. *oleifera* (Metzg.) Sinsk. f. *biennis*] was developed as a canola-quality germplasm line by the Arkansas Agricultural Experiment Station and released in 2001. This line was released for its yield potential and broad adaptation in the southeastern and midwestern USA.

AR91017 was derived from a single plant selection in the F<sub>5</sub> generation from the cross 'CX W03'/Falcon'. The cross was made by personnel of Jacob Hartz Seed Co. (a unit of Monsanto Company, St. Louis, MO) and was among the segregating families donated to the University of Arkansas. The single plant selection was advanced, open-pollinated in the vicinity of sister lines for a year at Kibler, AR, in a non-replicated yield trial. The F<sub>6</sub> line was tested in replicated yield trials from 1996 to 2000 as AR91017-44E-5. AR91017 out-yielded AR91004 (Bacon and Kelly, 2000), 2566 vs. 2223 kg ha<sup>-1</sup>, respectively, in Arkansas breeding trials representing 8 location years from 1996 to 2000.

AR91017 was also tested in the 1999 and 2000 National Winter Canola Variety Trials coordinated by Kansas State University (Table 1). The 1999 trial reported data from 18 locations (Rife, 2000); the 2000 trial reported data from 24 locations (Rife, 2001). The yield data in Table 1 represents the combined yield of locations within a region for both years. 'Jetton' and 'Ceres' have consistently been among the highest yielding winter canola genotypes and 'Wichita' (Rife et al., 2001) and 'Plainsman' (Rife et al., 2000) are recently released cultivars with similar adaptation. AR91017 produced grain yield similar to those cultivars (Table 1).

Agronomic data from the National Winter Canola Variety Trials indicate that AR91017 is similar in maturity, approximately 3 cm taller, has a lower test weight (564 vs. 584 kg m<sup>-3</sup>), slightly higher oil content (399 g kg<sup>-1</sup> vs. 383 g kg<sup>-1</sup>), and slightly higher winter survival (90.4 vs. 85.1%) relative to Wichita (Rife et al., 2001). The seeds are black and weigh 3.8 g per 1000. The most threatening disease of canola in the Southeast U.S. is probably blackleg [caused by *Leptosphaeria maculans* (Desmaz.)]. This disease has caused severe losses in production in Georgia and the Southeast as well as in other canola producing regions such as Australia. AR91017 has good blackleg resistance with a rating in the 2000 National Winter Canola Variety Trials of 10% which is similar (LSD0.10 = 10%) to Wichita (12%) and Jetton (17%).

Analyses performed by the Central Analytical Laboratory at the Poultry Science Center, University of Arkansas indi-

**Table 1. Seed yields in the National Winter Canola Variety Trial in 1999 and 2000.**

	South†	Midwest‡	Great Plains§	Grand mean¶
	kg ha <sup>-1</sup>			
Jetton	2209	2132	1565	1969
Wichita	2070	2235	1308	1871
AR91017	1987	2032	1430	1816
AR91004	1881	1886	1303	1690
Ceres	1861	1765	1869	1665
Plainsman	1568	1610	1189	1456

† 1999 locations = Fayetteville, AR; Griffin, GA; Calhoun, GA; Holly Springs, MS; Prairie, MS.

2000 locations = Kibler, AR; Fayetteville, AR; Holly Springs, MS; Prairie, MS; Griffin, GA; Calhoun, GA; Normal, AL.

‡ 1999 locations = Belleville, IL; Columbia City, IN; East Lansing, MI; Columbia, MO; Novelty, MO; Portageville, MO; Orange, VA; Petersburg, VA; Suffolk, VA.

2000 locations = Belleville, IL; Columbia City, IN; Columbia, MO; Novelty, MO; Orange, VA; Petersburg, VA; Suffolk, VA.

§ 1999 locations = Colby, KS; Hutchinson, KS; Bushland, TX; Munday, TX.

2000 locations = Colby, KS; Garden City, KS; Hutchinson, KS; Manhattan, KS; Parsons, KS; Lincoln, NE; Sidney, NE; Lubbock, TX; Munday, TX; Moses Lake, WA.

¶ Grand mean = average of three regional means.

cated that seed of AR91017 had an oil quality of less than 10 g kg<sup>-1</sup> erucic acid allowing it to be classified as canola. The fatty acid profile of AR91017 was similar to seed of Ceres. Tests in our laboratory show that the meal of AR91017 has a low glucosinolate content (Tes-tape score of  $\leq 0.5$  units, on a scale of 0–5) (Smith and Donald, 1988).

This germplasm should be useful for breeding winter canola-quality rapeseed cultivars adapted to the central and southern USA. Breeder seed of AR91017 will be maintained and distributed by the Arkansas Agricultural Experiment Sta-

tion. Small quantities of seed will be available upon written request to the corresponding author. Programs receiving seed will be asked to make appropriate recognition of the source of the germplasm if used in development of parental lines, cultivars, or hybrids.

R.K. BACON,\* J.T. KELLY, AND C.E. PARSONS

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- R.K. Bacon and J.T. Kelly, Dep. of Crop, Soil and Environmental Sciences, Univ. of Arkansas, Fayetteville, AR 72701; C.E. Parsons, Dep. of Crop, Soil and Environmental Sciences, Univ. of Arkansas, Lonoke, AR 72086. Published with the approval of the Director, Arkansas Agric. Exp. Stn., manuscript #01038. Registration by CSSA. Accepted 31 Jan. 2002. \*Corresponding author (rbacon@uark.edu).

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# REGISTRATIONS OF GENETIC STOCKS

## Registration of Alfalfa Genetic Stocks Segregating for Mutable Alleles of the Anthocyanin Locus C2

Alfalfa (*Medicago sativa* L.) genetic stocks segregating for WI Mutable 2 (Reg. no. GS-1, PI 619433) and WI Mutable 3 (Reg. no. GS-2, PI 619434) were released by the Wisconsin Agricultural Experiment Station on 26 June 2001. The mutable alleles behave like transposable elements and are useful for basic genetic studies. They express reversion during development from the recessive white flower condition to the dominant purple state. This reversion produces streaks and sectors of purple anthocyanin pigment in flower petals and seeds that are otherwise white. Reversion early in development results in large sectors whereas later reversion results in small sectors. Timing and frequency of reversion are under genetic control at the locus. The genetic designations of the stocks are c2-m2 and c2-m3, respectively (Bingham and Clement, 1989). Gene c2-m2 has been studied extensively (Bingham and Clement, 1989; Talbert and Bingham, 1989) and c2-m3 is known to behave like c2-m2 (Bingham and Clement, 1989). Both genes are allelic to c2-m1 (PI605704) (Bingham and Clement, 1989), allelic to c2-m4 which reverts only in tissue culture (Groose and Bingham, 1986), and allelic to c2-m5 and c2-m6 which have not been studied extensively (Bingham and Clement, 1989).

Seed of both genetic stocks was produced in cage isolation at Prosser, WA. Both stocks are segregating and contain about 75% white flowered plants, 20% expressing the respective mutable with streaks and sectors of purple pigment in otherwise white flower petals. The remaining ~5% are purple and

could be due to reversion to purple during gametogenesis, or due to contamination. Both lines have 'Vernal' (Graber, 1956) and 'Saranac' (Murphy and Lowe, 1966) in their pedigrees and their fertility and adaptation are similar to those cultivars. Five grams of seed of each will be sent upon request until the Wisconsin supply is depleted. Send requests to E.T. Bingham, Agronomy Department, 1575 Linden Drive, University of Wisconsin, Madison, WI 53706.

E.T. BINGHAM\*

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Dep. of Agronomy, 1575 Linden Dr., Univ. of Wisconsin, Madison, WI 53706. Research supported by College of Agric. and Life Sci. Univ. of Wisconsin. Registration by CSSA. Accepted 31 Jan. 2002. \*Corresponding author (ebingham@facstaff.wisc.edu).

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