

(CTV susceptible) (1516 pounds per acre) while maintaining essentially the same color and size: Montcalm (915 seed per pound) and USWA-39 (848 seed per pound). At 100 days maturity, Montcalm was two days earlier than USWA-39 (102 days).

USWA-70 (seed lot 95-2718), a white kidney (Alubia type) is an F_7 derived F_9 population with an upright bush habit from the cross 'Lisa'/'Linden'. Lisa is a small, white-seeded mutant out of 'Royal Red', a dark red cultivar with BCMV and CTV resistance developed by Dr. D. W. Burke. Linden, developed at the University of California-Davis, is a large, bright, white seed, dominant *I* resistance to BCMV, but is susceptible to CTV. USWA-70 has dominant *I* resistance to BCMV and complete resistance to CTV. It has not been in yield trials, but appears to have a good pod load and reasonable maturity. The unusually attractive, large (550-600 milligrams), shiny, white seed should be useful to bean breeders.

RELEASE OF TWO NAVY DRY BEAN GERMPLASM LINES, USWA-48 AND USWA-50, WITH VIRUS RESISTANCE

The Agricultural Research Service, U. S. Department of Agriculture, and the Agricultural Research Centers of Washington State University, the University of Idaho, and Oregon State University announce the release of two navy dry bean germplasm lines, USWA-48 and USWA-50, with resistance to bean common mosaic virus (BCMV) and curly top virus (CTV).

Complete resistance to all strains of BCMV and CTV is needed in the bean seed production areas of the arid western states. Both lines carry the dominant *I* resistance gene to BCMV and have stable resistance to CTV (presumed to be due to two dominant epistatic genes). These lines were developed by Dr. Matt J. Silbernagel, Research Plant Pathologist (retired), USDA-ARS, and Dr. An N. Hang, Agronomist, Washington State University. Both are located at the WSU-Irrigated Agriculture Research and Extension Center, 24106 N. Bunn Road, Prosser, WA 99350-9687.

USWA-48 (seed lot 95-2604) is an F_7 derived F_{11} population from the cross NY5-161-W/A55. NY5-161-W is a cold tolerant, bush type, white-seeded breeding line from Dr. M. Dickson (New York State Agricultural Experiment Station, Geneva, NY). A55 is an upright II-A (CIAT classification), black-seeded line with root rot tolerance, a high tolerance to CTV, and dominant *I* resistance to BCMV, developed by Dr. Shree Singh (CIAT, Colombia). The most outstanding characteristic of USWA-48 is the very upright, narrow profile, II-A plant habit, similar to a soybean plant habit. Maturity was about four days later than 'Norstar' in 1995 replicated yield trials near Othello, WA. USWA-48 yielded 3200 pounds per acre versus 3800 pounds per acre for Norstar. However, the tall, narrow profile with high borne pods might lend itself to high-density culture (11-inch rows) or solid planting for direct mechanical harvest. Under high density conditions, yields should be very competitive.

USWA-50 (seed lot 95-2134) is an F_5 derived F_9 bulk population from the cross GH-11/'Pearl'. GH-11 is a navy breeding line with dominant *I* gene BCMV and complete CTV resistance, developed by Dr. D. W. Burke (USDA-ARS, Prosser, WA). Unfortunately, it did not have an acceptable seed

color for commercialization. Pearl is an upright navy released by the Gentec Seed Company. USWA-50 (also tested as 93LB-1803 in 1994 and 94LB-4813 in 1995) has done very well in the Cooperative Dry Bean Nursery (CDBN) trials (25 locations in America and Canada) for the past two years. USWA-50 is not only high yielding (2500 to 3600 pounds per acre), but is also one of the earliest maturing (83-106, average 92 days) with a relatively small (2700 seed per pound) dull white seed, and a slightly oblong shape. It is highly unusual for an early bean line to also have a high yield. For these reasons, this line is being made available even though it has low borne pods and a tendency to lodge at harvest, probably due to the heavy yield. In addition to virus resistance (dominant *I* resistance to BCMV and complete CTV resistance), USWA-50 (tested as 93LB-1803) was also quite rust resistant in the 1994 CDBN trials at North Platte, NE, and Hatton, ND. At Prosser, WA, in 1994 CDBN trials, it was also the most root rot complex tolerant navy, out of nine navy entries. USWA-50 had a rating of 2.0 (on a 1-9 scale) versus a root rot rating of 4.2 for the commercial navy 'Fleetwood'. In that same trial, USWA-50 yielded 3240 pounds per acre, while Fleetwood yielded 2384 pounds per acre.

RELEASE OF PINK DRY BEAN GERMLASM LINES, USWA-61 AND USWA-63, THE FIRST WITH DOMINANT *I* RESISTANCE TO BEAN COMMON MOSAIC VIRUS

The Agricultural Research Service, U. S. Department of Agriculture, and the Agricultural Research Centers of Washington State University, the University of Idaho, and Oregon State University announce the release of two pink dry bean germplasm lines, USWA-61 and USWA-63, with improved resistance to bean common mosaic virus (BCMV) and curly top virus (CTV).

Complete resistance to all strains of BCMV and CTV is needed in the bean seed production areas of the arid western states. Currently, available pink cultivars have only recessive *i bc-1* or *i bc-2*² resistance to BCMV, which leaves them susceptible to endemic strains, such as the western and mexican strains; plus the newly introduced, dangerous necrotic strains such as NL-3 and NL-8 (from Africa). These lines were developed by Dr. Matt J. Silbernagel, Research Plant Pathologist (retired), USDA-ARS, and Dr. An N. Hang, Agronomist, Washington State University. Both are located at the WSU-Irrigated Agriculture Research and Extension Center, 24106 N. Bunn Road, Prosser, WA 99350-9687.

USWA-61 (seed lot 95-2153) is an F₅ derived F₁₀ bulk population out of the cross UNS-117/A55. Pink germplasm release UNS-117, developed by Dr. D. W. Burke (USDA-ARS, Prosser, WA), has a short recumbent vine (III-A CIAT classification), recessive resistance to BCMV, and complete resistance to CTV. A55 was developed by Dr. Shree Singh (CIAT, Colombia), has a strong upright II-A plant habit, dominant *I* resistance to BCMV, a high tolerance to CTV, and good resistance to the root rot complex present in the western United States bean producing areas. USWA-61 has a very upright (II-B) plant habit, which makes it the only known source of an upright pink germplasm line. Besides dominant *I* resistance to BCMV, USWA-61 also has recessive *bc-1* or *bc-1*². Since *bc-1* and *bc-1*² are alleles, they don't exist in the same genotype, but both *I bc-1* and *I² bc-1* genotypes are present in the population. USWA-61 also has complete resistance to CTV (presumed