

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Washington, DC

and

BEET SUGAR DEVELOPMENT FOUNDATION
Denver, CO

NOTICE OF RELEASE OF CN921-515 and CN921-516, SUGAR BEET

The Agricultural Research Service of the United States Department of Agriculture and the Beet Sugar Development Foundation announce the joint release of sugar beet germplasm lines CN921-515 and CN921-516. These lines were developed in the breeding program of K.L. Richardson and R.T. Lewellen, Crop Improvement and Protection Research Unit, USDA-ARS, Salinas, California. This germplasm represents ongoing efforts to combine multiple disease resistance with high productivity and to enhance source populations.

CN921-515 (PI xxxxxx) and CN921-516 (PI xxxxxx) are multigerm (MM), green hypocotyl (rr), self-fertile (Sf), partially inbred lines extracted from genetic-male-sterile (A-: aa) facilitated, random-mated lines. Based on greenhouse SBCN screening of individual plants, each is sugar beet cyst nematode (*Heterodera schachtii* Schmidt) resistant, likely homozygous. CN921-515 is moderately bolting susceptible. CN921-515 and CN921-516 segregate for the Rz1 gene for resistance to Beet necrotic yellow vein virus (rhizomania).

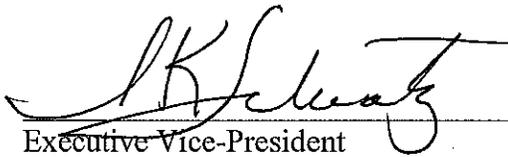
CN921-306 (PI 640422) is the progenitor population of CN921-515 (PI #####) and CN921-516 (PI #####). CN921-306 has about 27% percent of its germplasm from three *B. vulgaris* subsp. *maritima* sources. The pedigree is described in more detail in the release and registration of CN921-306. C51 (PI 593694) was developed from a composite cross, involving about 60 accessions of *B. vulgaris* subsp. *maritima* in a sugar beet background. C26 (PI 610488) and C27 (PI 610489) are improved populations that are approximately half sugar beet and half *B. vulgaris* subsp. *maritima* from accessions collected in France, the UK, Ireland, and northern Europe. Because CN921-306 was developed from multiple composite cross-populations, the original wild beet source of sugar beet cyst nematode resistance is not known. C921-306 and CN926-11-3-22 (PI 640421) share C51 in their pedigree, but it is not known if the source of resistance for each is identical.

During the development of CN921-515 and CN921-516, individual plants of CN921-306, evaluated as 3921-306, were selfed. Two progeny lines, 5921-306-515 and 5921-306-516, were selected based on greenhouse and field trials in California evaluating reaction to sugar beet cyst nematode (SBCN; caused by *Heterodera schachtii*), powdery mildew (PM; *Erysiphe polygoni* DC [synonym *Erysiphe betae* (Vanha) Weltzien]), and rhizomania (caused by Beet necrotic yellow vein virus). 5921-306-515 was increased in isolation and designated 7921-515. 5921-306-516 was increased in isolation and designated 7921-516. 7921-515 and 7921-516 were each

increased in isolation and designated 8921-515 and 8921-516, respectively. 8921-515 was released as CN921-515 and 8921-516 was released as CN921-516.

Seed of CN921-515 and CN921-516 will be maintained at the USDA-ARS Crop Improvement and Protection Research unit, Salinas, CA and will be provided upon written request to sugar beet scientists in sufficient quantities for reproduction. Genetic material of these releases has been deposited in the National Plant Germplasm System where it will be available for research purposes, including development and commercialization of new parental lines and cultivars. It is requested that appropriate recognition be made if this germplasm contributes to the development of a new breeding line or cultivar. The National Plant Germplasm System and additional information on prior releases and PI numbers can be found at www.ars-grin.gov/npgs. Requests for seed should be made to Dr. Kelley L. Richardson, USDA-ARS, 1636 East Alisal Street, Salinas, CA 93905, phone: 831-512-7556, fax: 831-755-2814, kelly.richardson@ars.usda.gov.

Signatures:



Executive Vice-President
Beet Sugar Development Foundation

12/2/13
Date



Deputy Administrator, Crop Production and Protection
Agricultural Research Service, U.S. Department of Agriculture

12/12/13
Date