Registration of ‘Silver Cloud’ White Kidney Dry Bean

‘Silver Cloud’ white kidney (Phaseolus vulgaris L.) (Registration no. CV-257, PI 639176) was developed cooperatively by the Washington Agricultural Research Center and USDA-ARS and released in 1998. Silver Cloud is a high-yielding, upright bush, midseason maturity, disease resistant white kidney bean adapted to the U.S. Pacific Northwest.

Silver Cloud is an F7-derived F9 line from the cross ‘Lisa’/‘Linden’. Lisa is a small-seeded white kidney mutant from ‘Royal Red’. Royal Red is a dark-red kidney bean cultivar with Bean common mosaic virus ( BCMV) and Curly top virus ( CTV) resistance developed by D.W. Burke in 1968 (Hang and Prest, 2000). Linden, developed at the University of California, Davis, has a large bright-white seed and dominant I resistance to BCMV but is susceptible to CTV.

Silver Cloud has an upright Type I growth habit and is resistant to lodging. Silver Cloud has dominant I resistance to BCMV and complete resistance to CTV. Silver Cloud is more tolerant to bean rust [ caused by Uromyces appendiculatus (Pers.:Pers) Unger] than CPC00247 in a test performed in 2004 (Pastor-Corrales, 2005). Silver Cloud was tested as 95–2718 and 96–2008 in the Advanced Variety Trial in Othello, WA. Silver Cloud outyielded ‘Lassen’ by 6 and 19% in 1996 and 1997, respectively. Silver Cloud is classified in the medium to late maturity group averaging 96 d to harvest, 8 d later than Lassen. Silver Cloud has unusually attractive, large, and shiny white seed that are 53.7 g 100 seeds⁻¹ compared with 47.0 g 100 seeds⁻¹ for Lassen. In the 1997 National Cooperative Dry Bean Nursery trial, Silver Cloud, tested as USWA-70, had 4% lower yield than Lassen. Silver Cloud outyielded Lassen at Scottbluff, NE, Lethbridge, AB, Torrington, WY, Fruita, CO, and Safford, AZ (Singh and Powers, 1999; Stewart-Williams, 1998). Under multiple stress conditions of low residual soil N (~22 kg ha⁻¹) with no fertilizer applied, low soil moisture (irrigation water applied at ~50% of water use requirements based on evapo-transpiration schedules), and heavy root rot pressure ( caused by Fusarium solani), Silver Cloud produced 19 and 59% higher yield than Lassen and ‘Beluga’, respectively (Miklas, unpublished data 1999, 2000). In 2004, it performed well in Montana, Washington, and Wyoming with an average yield of 2492 kg ha⁻¹. Canning trials performed by USDA-ARS and Michigan Agricultural Experiment Station in 1996 and 1997 and by New York Agricultural Experiment Station in 1998 showed that Silver Cloud had improved canning quality compared to Beluga, Lassen, and White Kidney for overall appearance and size (Halseth et al., 1999).

Silver Cloud has been released as a nonexclusive variety without Plant Variety Protection. A research fee will be assessed on each unit of Certified seed sold with Silver Cloud may be sold for seed by name only under the Certified class. Breeder and Foundation seed will be maintained by Washington State Crop Improvement Association, Department of Crops and Soils, WSU Seed Lab, Pullman, WA 99164. Small quantities of seed may be obtained from the corresponding author for at least 5 yr.


References


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