system contributes to its excellent lodging resistance. The cultivar exhibits a high harvest index (ca=55%), typical of many early maturing kidney bean cultivars. Isabella is an early season cultivar reaching maturity in about 84 to 89 days, and when evaluated across 6 yr and 24 locations has exceeded the yield of the standard kidney bean cultivar, Sacramento, by 10%. According to yield stability analyses (2), Isabella is adapted to improved environments, and has a favorable yield stability, whereas other light red kidney cultivars namely Sacramento and ‘Linden’ generally lacked yield stability when grown across diverse environments in Michigan.

Isabella carries the unique combination of the single dominant inhibitor I-gene form of resistance to all strains of bean common mosaic virus ( BCMV), and the recessive bc-1 gene which protects the hypersensitive I-gene against necrosis-inducing strains of BCMV present in Michigan. Although bean cultivars with either the 1 or bc-1 genes alone succumb to necrotic BCMV strains either through tip necrosis or systemic mosaic, the combined resistant sources in Isabella cause it to only exhibit initial local necrosis and not a progression to systemic infection. Isabella is essentially immune to the indigenous rust [incited by Uromyces phaseoli (Rebn.) Wint. var. typica Arth.] races prevalent in Michigan, and is resistant to the alpha race of anthracnose caused by Colletotrichum lindemuthianum (Sacc. & Magn.) Briosi & Cav., which is the most prevalent race currently in Michigan. Isabella is moderately tolerant to Michigan isolates of halo blight incited by Pseudomonas syringae pv. phaseolicola (Burkholder) Young et al., but is susceptible to Michigan isolates of angular leaf spot caused by Sclerotinia sclerotiorum (Lib.) de Bary (1).

Initial selection was made for uniform early flowering and resistance to head rot, moderately resistant to leaf blight caused by Alternaria carthami Chowdhury, and susceptible to rust caused by Puccinia carthami Cda. In 20 station-years of yield tests across the southern Canadian prairies conducted from 1980 to 1984, Saffire matured prior to killing fall frosts in 21 of 23 station-years and matured 8 to 9 days earlier than the U.S. standard, S-208, which was hit by fall frost prior to maturity at 7 of 10 station-years. Saffire is resistant to head rot, moderately resistant to leaf blight caused by Alternaria carthami Chowdhury, and susceptible to rust caused by Puccinia carthami Cda. In 20 station-years of yield tests across the southern Canadian prairies conducted from 1981 to 1984, Saffire outyielded the U.S. cultivar S-208 by 10% and equalled Hartman.

The seed size, bright white color, seed shape, and test weight make Saffire acceptable to the bird seed trade. The oil level on a dry weight basis ranges from 25.6% to 35.2% with a mean of 31.8%. By comparison, S-208, a standard U.S. oil-seed cultivar, averaged 37%.

Breeder seed, derived from a bulk of 10 single plant selections, will be maintained by Agriculture Canada Experimental Farm, Indian Head, Saskatchewan, Canada, SOG 2KO. Distribution of pedigreed seed stocks is handled through SeCan Association, 512-885 Meadowlands Drive, Ottawa, Ontario, Canada, K2C 3N2.

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REGISTRATION OF SAFFIRE' SAFFLOWER

'SAFFIRE' safflower (Carthamus tinctorius L.) (Reg. no. 11), was developed at the Research Station, Research Branch, Agriculture Canada, Lethbridge, Alberta. Its experimental designation was Lesaf 34C-00. Licence No. 2514 was issued for Saffire on 3 April, 1985, by the Plant Health and Plant Products Directorate, Food Production and Inspection Branch, Agriculture Canada. Saffire, the first Canadian safflower cultivar, is a joint release by Agriculture Canada and Alberta Agriculture.

Saffire resulted from mass selection commencing in 1978, in the bulk population S65-219, which was selected from the introduction ‘Indian’. Single-plant selections were made twice in subsequent years, with progeny grown in plant-rows. Initial selection was made for uniform early flowering and post-bloom flower color, reddish orange to red, and early maturity. Subsequent selection also included upright growth habit, yield, and resistance to sclerotinia head rot caused by Sclerotinia sclerotiorum (Lib.) de Bary (1).

The line was tested for maturity, disease resistance, and other agronomic characters under dryland prairie conditions from 1980 to 1984. Saffire matured prior to killing fall frosts in 21 of 23 station-years and matured 8 to 9 days earlier than the U.S. standard, S-208, which was hit by fall frost prior to maturity at 7 of 10 station-years. Saffire is resistant to head rot, moderately resistant to leaf blight caused by Alternaria carthami Chowdhury, and susceptible to rust caused by Puccinia carthami Cda. In 20 station-years of yield tests across the southern Canadian prairies conducted from 1981 to 1984, Saffire outyielded the U.S. cultivar S-208 by 10% and equalled Hartman.

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References and Notes


4. Associate professor, professor, crop and soil sciences; research plant pathologist and research geneticist, USDA-ARS; associate professors, food science and human nutrition, and crop and soil sciences, Michigan State Univ., East Lansing, MI 48824, respectively. Research supported by Michigan Foundation Seed Assoc., Michigan Bean Commission, Michigan Agricultural Experiment Station and USDA-ARS. Approved for publication as Michigan Exp. Stn. Journal Article no. 12029. Registration by Crop Sci. Soc. of Am. Accepted 30 Sept. 1986.

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