white clover (necessitating field isolation), but backcrosses to kura
clover are not fertile.

The hexaploid hybrid HBC/F-2-C is not directly usable as a cul-
tivar, but may be useful for further backcrossing and selection. Up
to five rooted propagules of the hybrid may be obtained from the
Corresponding author (ntaylor@ca.uky.edu).

N. L. TAYLOR,* J. A. ANDERSON, AND E. G. WILLIAMS (5)

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Registration of Three Lesquerella fendleri
Germplasm Lines Selected for
Improved Oil Traits

WCL-LY1 (Reg. no. GP-20, PI 596362), WCL-LO1 (Reg. no.
GP-21, PI 596363), and WCL-LH1 (Reg. no. GP-22, PI 596364)
germplasm lines of lesquerella [Lesquerella fendleri (A. Gray) S.
Watson] were released in 1996 by the USDA-ARS. (Note the use
of lesquerella to refer to this species; the older common name,
Fendler’s bladderpod, is no longer preferred.) This is the first
public release of lesquerella germplasm. The three lines were
developed from three generations of recurrent phenotypic selection
for three seed oil traits beginning in 1992-1993 in field plots at
the University of Arizona Maricopa Agricultural Center (1). Seed
originated from a 1986 bulk population consisting of equal propor-
tions of one accession originating from Arizona and nine from
Texas (2). The accession from Arizona was PI 311165; the acces-
sions collected from Texas were P1293005, PI 293006, PI 293007,
PI 293009, PI 293010, PI 293012, PI 293013, PI 293015, and PI
293016.

Five hundred random individual plants from each of the three
populations (WCL-LO1, WCL-LH1, WCL-LY1) were harvested
each year. Seeds from individual plants were evaluated separately.
WCL-LO1 was screened for oil content, WCL-LH1 for lesquerolic
acid content, and WCL-LY1 for lesquerolic acid yield (oil content
multiplied by lesquerolic acid content). Seeds from the top 50
individual plants in each population were bulked and planted each sub-
sequent year. Plants within each population were randomly inter-
mated by natural insect pollination. Total seed oil content was
measured using a calibrated pulsed NMR analyzer and fatty acid
analysis by gas chromatography (3). Values of each population
were compared by a t-test to an unselected population. The un-
selected population also originated from the 1986 bulk described
above. Seed was increased in the 1995-1996 growing season at
Weslaco, TX. This germplasm should be suitable for geographic
regions similar to the arid southwestern USA.

WCL-LO1 produced significantly more seed-oil than the
unselected population (26 ± 2.42 vs. 23 ± 1.67 kg·ha⁻¹). WCL-
LH1 produced significantly more lesquerolic acid (C20:1-OH) than
the unselected population (54.5 ± 2.32 vs. 50.2 ± 1.12 kg·ha⁻¹).

WCL-LY1 produced higher lesquerolic acid yields (oil content
multiplied by lesquerolic acid content) than the unselected popula-
tion (15.3 ± 1.58 vs. 11.76 ± 0.57 kg·ha⁻¹).

Plant height of the three populations ranged between 0.30 and
0.45 m. Plants began flowering in early February and reached full
flowering by mid-April when planted in October in Arizona and
Texas. Average 1000-seed weight was 0.60 g for each population.
Siliques contained an average of 14 seeds. Seed yield averaged 15
grams plant⁻¹. All plant characteristics were determined under irrigated
conditions (2).

Small quantities of seed are available for distribution to qualified
researchers upon written request to the corresponding author.
Recipients of seed are asked to make appropriate recognition of the
germlasm source if it is used in the development of a new culti-
var, germplasm, parental line, or genetic stock.

D. A. DIERIG,* A. E. THOMPSON, and T. A. COFFELT (4)

References and Notes
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Registration of NBS(8), NSS(8), NS(B)RF(8), and
NS(B)RF(8) Maize Germplasm

Four yellow dent maize (Zea mays L.) populations NBS(8),
NSS(8), NS(B)RF(8), and NS(B)RF(8) (Reg. no. GP-337 to 340,
PI 595368 to PI 595371) were released by the Nebraska Agricultu-
ral Research Division, Institute of Natural Resources, University
of Nebraska, on 27 Mar. 1994, based on their potential to produce
full-season maize inbred lines with good yield and standability.

These populations are the result of eight cycles of recurrent
selection using a replicated recurrent selection program (1, 2). Each
released population is a composite of three replicates, with each
replicate population produced by bulking recombined seed genera-
ted by intermating SI progeny from 10 selected plants. NBS(8) and
NS(B)RF(8) are improved versions of Nebraska B synthetic, improved by S₁
per se selection and reciprocal full-sib selection, respectively. NSS(8) and
NS(B)RF(8) are improved versions of the Nebraska version of Stiff Stalk synthetic, improved by S₁ per se
selection and reciprocal full-sib selection, respectively. NS(B)RF(8)
and NS(B)RF(8) are the populations paired in the reciprocal full-
sib selection program. Both Nebraska B synthetic and the Nebraska
version of Stiff Stalk synthetic underwent several cycles of selec-
tion for general combining ability at the University of Nebraska
prior to initiation of the replicated recurrent selection program.

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