REGISTRATION OF SOUTH AFRICAN PHOTOPERIOD INSENSITIVE MAIZE COMPOSITES I, II, AND III

Photoperiod Insensitive Composite I (Reg. No. 90)

Segregating populations of tropical and US-South African material were selected for photoperiod insensitivity. The earlier-flowering segregants were random-mated followed by several generations of selection for insensitivity. Mass selection for lodging and ear rot was carried out for eight generations. Components of the composite are listed below.

Photoperiod Sensitive Strains

11 Mex 44—Inbred from Pimentilla, a central Mexican flint, developed in Zimbabwe. Source of HN.

Eto Blanco—A white flint O.P. variety belonging to the Coastal tropical flint complex. Components: Colombian races Comun and Chococeno, Venezuela Syn. 1, plus numerous inbreds from Mexico, Puerto Rico, Cuba, Venezuela, Brazil, Argentina and U.S.A.

Teosinte Pool—Teosinte x several South African and U.S. elite lines selected for corn-like phenotype and prolificacy.

Sintetico Cristalino—Brazilian material. Uncertain identity.

Blanco Comun—A Colombian flint complex.

M162W—Inbred derived from K64 x B1138T (T designates a line originating from Teko, A South African Yellow Dent.)

M136Y—[(B1138T x 670T) Cuba 40] B1138T3 × Cuba 40. Cuba 40 is a coastal tropical flint.

M848W—A derivative of WF9 HN x E2621 P. E2621 is a line from Natal Potchefstroom Pearl having polygenic resistance to H. turcicum.

L189Y—A derivative of (K4 x B670T) Cuba 40.

Photoperiod Insensitive Strains

Long Ear Synthetic—Origin unknown

C103

B756T—A Teko Yellow inbred.

M37—W10 × Oh40B derivative.

L141Y—A derivative of (K4 x B670T) Cuba 9 (Cuba 9 is a tropical population).

Oh45Hr—A South African Hr version. Allele undetermined.

B1138T—A Teko Yellow inbred.

M80Y—Hy2 × A708H derivative. A708H is a South African Hickory King inbred.

B616T—A Teko Yellow inbred.

F2834T—A Teko Yellow inbred.

F289W—An HN version.

M102—WF9 × Mo22 derivative.

Unequal amounts of each of the strains entered the synthetic. Approximately 32% arose from tropical, 44% from South African, and 24% from United States sources.

Photoperiod Insensitive Composite II (Reg. No. GP 91)

Thirty-five tropical populations were screened for photoperiodism, 13 of which showed photoperiod insensitivity or had an intermediate response. The 13 were bulked and permitted to random mate for four generations. The population was then screened for response and found to be relatively insensitive. Composition of the synthetic is listed below.

Flint Composite—PD(MS6), Narino 330/Penu 330, Amarillo Salvador, Florida Synthetic, Eto Amarillo Narino 330/Penu 330 Cuba 111 Cuba Cpo. 2 Cuba 40, Hawaii 5, SLPL164 Antigua Cpo. 2 Perola Piracicaba

Compuesto Flint

Compuesto Cateo—Columbia

Compuesto Colombia—Mexico Opaceo 2

PMS 206 Sta. Roza 1 V. 68 Perla/Americano Sta. Tereza 1 V. 68

Teosinte pool (maize x teosinte segregating population selected for maize-like qualities and prolificacy).

Photoperiod Insensitive Composite III (Reg. No. GP 92)

Six reasonably photoperiod insensitive tropical populations (Flint Composite, Perola Piracicaba, Narino 330/Penu 330, Cuba 111, Cuba 40, Hawaii 5, SLPL164, Comperto Flint) were found to combine well with local South African inbreds.

Subsequently, they were crossed with Composite I in an isolated block using the six populations as seed parents and Composite I as the male. The resulting seed was bulked and random-mated for three generations. It was then screened for photoperiodic response and found to be somewhat insensitive.

The three composites were increased at Urbana in 1980. Composite I flowers at approximately the same time as Stiff Stalk Synthetic (AES 800 maturity), Composite II perhaps a week to 10 days later. Composite III flowered at least 2 weeks later than Stiff Stalk Synthetic.

Germplasm lots are available on request from the Dep. of Agronomy, Univ. of Illinois, Turner Hall, 1102 S. Goodwin Avenue, Urbana, IL 61801.


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REGISTRATION OF 'FLORIDA' CARPON DESMODIUM

Photoperiod Insensitive Composite III (Reg. No. GP 92)

'Starland' forage legume, was developed and released in 1979 as a long-lived perennial cultivar by the Institute of Food and Agricultural Sciences, University of Florida, Agricultural Research Center, Fort Pierce. It was derived from P.I. 217310, an introduction from Uttar Pradesh, University of Florida, Agricultural Research Center, Fort Pierce. It was developed and released in 1979 as a long-lived perennial cultivar by the Institute of Food and Agricultural Sciences, University of Florida, Agricultural Research Center, Fort Pierce. It was derived from P.I. 217310, an introduction from Uttar Pradesh, India.

Establishment of Florida forage desmodium is rather slow; generally two growing seasons are required for adequate seed production. Once established, however, it is very competitive in mixtures with tropical grasses 'Pangola' digitigrass (Digitaria decumbens Stent.) and 'Penascoa' bahiagrass (Paspalum notatum Flugge). Because of its growth habit it can withstand heavy grazing. Animal studies showed organic matter intake to be about 2% of body weight and digestibility to be about 50%. Crude protein of Florida carpon varies from 15 to 20% and in carpon-grass mixtures averages 9 to 10%. Up to 145 kg/ha of N per year are accumulated in the forage of a carpon-grass mixture.

Florida forage desmodium is adapted to south Florida and grows best in mineral soils not subjected to flooding. It is susceptible to root knot nematodes (Meloidogyne spp.). Little problem, however, has been encountered where pastures were developed from virgin soils. Old vegetable fields should be avoided.

Florida carpon has pink flowers. Stems are diffuse, ascending to erect, and up to 1.2 m long. Adventitious roots can develop from lower branches which are in contact with the soil. The small seeds (770 seeds/g) are ready for harvest in November with seed yields of 100 kg/ha or more. Seed pods are dark brown, erect or ascending, narrowly oblong, compressed and generally four to eight jointed. A more detailed description of this forage legume has been published by Kretschmer et al.1,4

Albert E. Kretschmer, Jr., John B. Brolmann, George H. Snyder, and Samuel W. Coleman

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