1989 to 1993, beginning at the S5 level of inbreeding as experimental line 87-2341 (later referred to as HSyn73-87-2341 and 91-929), using the inbred line Mo17 as a tester for combining ability. S5 testcross hybrids were evaluated across two environments in 1989; S5 testcross hybrids were evaluated in one environment each in 1990 and 1991; and S5 hybrids were evaluated in one environment each in 1992 and 1993. All performance tests were conducted as part of a randomized complete block design using three replications. Testing sites for 1989 were at Wanatah and West Lafayette, IN; testing sites for all other years were at West Lafayette, IN. Compared with the B73 × Mo17 hybrid check, H125 × Mo17 averaged 6% higher grain yield, 12 kg m⁻³ higher test weight, 12 g kg⁻¹ lower grain moisture at harvest, and 2 percentage points lower stalk lodging.

H125 is superior to B73 per se and in hybrid combination for grain quality related to dry-milling properties. In measurements of samples obtained from a single trial (two replications, two subsamples per entry) at West Lafayette, IN, in 1993, the dry-milling evaluation factor index (MEF) (2) was significantly greater using grain from H125 and from the F; hybrid H125 × Mo17 compared with grain from B73 and B73 × Mo17, respectively. MEF values were 29% greater for H125 than B73, and 22% greater for H125 × Mo17 than B73 × Mo17. Average kernel density, as measured by gas-pressure pycnometer (3), was significantly greater (38 mg cm⁻³) for H125 than B73. The average kernel volume of H125 was significantly larger (44%) than that of B73. H125 was identical to B73 in date of 50% pollen shed (742 growing degree days, base 10°C), when grown at the Purdue University Agronomy Research Center in 1994. H125 has a relative maturity classification of AES800. H125 was medium plant height with ears slightly below midstalk. Plants have wide, upright leaves and produce tassels with 8 to 10 branches, an open morphology, good extrusion from the flag leaf, and an acceptable pollen shed. Ears have medium shank length, with husks enclosing the ear. Large kernels (0.23 cm³ average) are yellow-orange in color and relatively flat. H125 produces 14-rowed ears = 16 cm in length, with red cobs. Breeder seed is maintained by the Purdue Agricultural Research Programs and can be obtained in 100-kernel samples from the corresponding author. Recipients of seed are asked to make appropriate recognition of the source of germplasm if it is used in development of a new cultivar, germplasm, parental line, or genetic stock.


References and Notes
4. B.E. Zehr, G.F. Tragesser, P.L. Crane (reified), and L.F. Bauman (deceased). Dep. of Agronomy, Purdue Univ., West Lafayette, IN 47907-1150; B.R. Hamaker, Dep. of Food Science, Purdue Univ., West Lafayette, IN 47907-1160. Journal Paper no. 14282 of the Purdue Univ. Agric. Res. Programs. Registration by CSSA. Accepted 31 Dec. 1994. *Corresponding author (Email: bzehr@dept.agry.purdue.edu).

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Registration of H126w White-Endosperm Parental Inbred Line of Maize

H126w (Reg. no. PL-172, PI 583846) is a dent white-endosperm maize (Zea mays L.) inbred line developed by the Agricultural Research Programs, Purdue University, West Lafayette, IN. H126w was released in May 1994 for its potential value as a parent in hybrids intended for production of grain for use by the dry-milling industry, and as a source of germplasm in development of proprietary white inbred lines by the hybrid seed industry.

H126w is a direct selection from Mo17 White Composite, a white maize population with Mo17 parentage previously released by the University of Missouri Agricultural Experiment Station and the USDA-ARS (1). Development of H126w was through self-pollination, with ear-to-row selection for vitreous grain type and for desired ear and plant traits. Mass selection in early generations of inbreeding (S₅ to S₅) involved individual ear selection for increased endosperm hardness (based on visual judgment) after individual plant selection for reduced leaf blight disease lesions, reduced ear rot, and overall plant health. Release of H126w was at a level of inbreeding > S₅ generation. Field observations resulting from artificial inoculation of H126w indicated a moderate level of tolerance to northern corn leaf blight [caused by Exserohilum turcicum (Pass.) K.J. Leonard & E.G. Suggs], southern corn leaf blight [caused by Bipolaris maydis (Nisikado & Miyake) Shoemaker], and northern corn leaf spot [caused by B. zeicola (G.L. Stout) Shoemaker].

H126w was included in testcross performance trials from 1988 to 1993, beginning at the S₅ level of inbreeding as experimental line 87-893-1 (later changed to MoSyn17w-1d), using the inbred line H122w as a tester for combining ability. S₅ testcross hybrids were evaluated across two environments each in 1988 and 1989; S₅ testcross hybrids were evaluated across two environments in 1990; S₅ testcross hybrids were evaluated across two environments in 1991; and S₅ hybrids were evaluated across two environments each in 1992 and 1993. All performance tests were conducted as part of a randomized complete block design using three replications. Testing sites were at Wanatah and West Lafayette, IN. Compared with the B73 × Mo17 hybrid check, H122w × H126w averaged 5% lower grain yield, 10 kg m⁻³ higher test weight, 12 g kg⁻¹ higher grain moisture at harvest, and 5 percentage points higher stalk lodging.

H126w was shown to be superior to Mo17 for grain quality, both per se and in hybrid combination. In measurements of samples obtained from a single trial (two replications, two subsamples per entry) at West Lafayette, IN, in 1993, dry-milling evaluation factor index (MEF) (2) and average kernel density, as measured by gas-pressure pycnometer (3), were significantly greater using grain from H126w and from F₅ hybrid H122w × H126w in comparison with grain from Mo17 and B73 × Mo17, respectively. MEF values were 17% greater for H126w compared with Mo17, and 37% greater for H122w × H126w compared with B73 × Mo17. Values for average kernel density by pycnometer were 17 mg cm⁻³ higher for H126w compared with Mo17, and 21 mg cm⁻³ higher for H122w × H126w compared with B73 × Mo17. Grain from F₅ hybrids FR819w × H126w and MBS7w × H126w were significantly greater for MEF in comparison with grain from H122w × H126w. Only FR819w × H126w had significantly higher kernel density in comparison with H122w × H126w. H126w reached 50% pollen shed an average of 3 d earlier than inbred line Mo17 and required 760 growing degree days (base 10°C) to flower at the Purdue University Agronomy Research Center in 1994. H126w has a relative maturity classi-