hypersensitive. The "Bond" type straw was maintained. Selection within and between the first pair of crosses as well as testing were carried out over a 18-year period, emphasizing crown rust resistance. Plants were selected also for *H. victoriae* resistance utilizing artificial inoculation in the greenhouse. Lodi was last selected in the F₂ generation and tested for yield starting with the F₅ in 1958. Yield tests were conducted at several other locations in Wisconsin in 1959, and in the North Central states (2,3,4). The average yield was in the upper quarter of the North Central states' tests, and in Wisconsin was highest (8), although Garry slightly outyielded Lodi in later tests.

Bushel weights were higher than for Garry, but lower than for such varieties as Garland and 'Beedee.' Though plant height is tall, lodging resistance of Lodi is outstanding, it being in the better group of varieties in North Central tests, and with less lodging in Wisconsin (10) except for Goodfield. Lodging was near that of Garland and Dodge.

Panicles are large and open, and hull color is a light yellow, but may be dull reddish-yellow when weathered. Kernels are long and tend to double occasionally.

Simons (in 2, 3) reported that Lodi is susceptible in the seedling stage to crown rust races 203,216, and 264, but resistant to races 290, 294, and 321. Lodi showed some crown rust resistance in Kansas in 1966 (8). Field readings of rust on Lodi have averaged less than for Dodge (10), yet it is believed that resistance of Dodge and 'Portage' may be more useful. Lodi has the ABD stem rust genotype, and is resistant to smut. Stem Septoria response is intermediate; but Lodi is susceptible to red leaf.

Lodi does well on fertile soils, and has yielded 166 bushels per acre under farm conditions, according to one report. High yields have been reported in nearby states (5,7,11) but the variety did poorly in Kansas (6).

### Literature Cited


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Registration of Semmes Safflower

(Reg. No. 53)

Edgar E. Hartwig

'SEMMES' safflower (*Glycine max* (L.) M. Sw.) F₅ plant selection from the cross D51-5427 × W014. 'Nebraska 10' safflower, a selection developed in a cooperative program of the Pacific Oilseeds line, was a single plant F₅ of 'Nebraska 8' and 'Nebraska 977-16-1', four times and selected for rust resistance utilizing artificial inoculation in the greenhouse. 'Nebraska 10' was a high oil line obtained from Pacific Oilseeds, Inc., Woodland, California. 'SEMMES' is a derivative of the cross Nebraska 10 and 'Nebraska 977-16-1'. Frio 3 is the result of a cross of 'Nebraska 6' and 'W014'.

Frio has considerably greater cold tolerance than 'Gila' or other varieties, and it has more resistance to *Pythium* root rot than Gila. Frio is known to be susceptible to rust, *Phoma* and other *Safflower* diseases, including seed blight.

Some variability in agronomic characteristics is maintained among individual Frio plants. Frio grows 2 to 3 feet taller than Gila, Nebraska 10, or US10 and begins to bloom several days later. The flowers are predominantly yellow. Heads are slightly smaller than in the Gila varieties from white to grey; intermediate in length, and not so prominently ridged. Frio has considerably greater cold tolerance than 'Gila' or other varieties compared with it, and has more resistance to *Pythium* root rot than Gila.

Oil content usually increases when grown for oil in California. Frio seed matures several days earlier than Gila and the stalks dry out more slowly. In the majority of irrigated trials conducted in Arizona, Frio has equaled or exceeded Gila in yield. In irrigated trials conducted in Nebraska in a 3- to 5-year period, Frio exceeded Gila in yield in 33 trials, but in all cases except 3 exceeded Gila in yield. Many of these trials included also N10 and in 1965 and 1966, Frio exceeded these varieties in yield and was higher in oil content.

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1 Registered by the Crop Science Society April 25, 1966.
2 Research Agronomists, Crops Research Division, Mesa Branch Experiment Station, Mesa, Arizona.
3 Williams, J. H. Registration of N-10 and N-34, 4:446. 1964.

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