Compared to the sawfly resistant cultivar Chester, Leader is slightly later maturing and has slightly shorter straw. Leader is photoperiod insensitive. The spikes are oblong to fusiform, mid-dense, erect, and apically awnletted; glumes are midlong, mid-wide, glabrous, and white; shoulders are midwide, square to rounded and some slightly elevated; beaks are short, midwide and acute. The kernels are medium red, ovate and midlong; germ is round to oval and midsize; crease is midwide, middeep and frequently open at the brush end; cheeks are rounded to slightly angular; and the brush is midsize and midlong to short.

Leader is resistant to many races of leaf rust (caused by *Puccinia recondita* Rob. ex. Desm. f. sp. tritici), stem rust (caused by *P. graminis* Pers. f. sp. *t. tritici* Eriks. and Hennek.), loose smut [caused by *Ustilago avenae* (Wallr.) Liro and *T. caries* (DC) Tul.], and moderately susceptible to common root rot [caused by *Bipolaris sorokiniana* (Sacc. in Sorok.) Shoem. and *Fusarium* sp.].

The Canadian Expert Committee on Grain Quality has rated Leader equal in breadmaking quality to 'Marquis' and noted that it had high flour yield, very good loaf volume, low (desirable) alpha-amylase activity, but marginal farinograph absorption. A more detailed description of the cultivar has been published.

Breeder seed will be maintained at the Research Station, Agriculture Canada, Regina, Saskatchewan, S4P 3A2. The multiplication and distribution of pedigreed seed will be made by SeCan Assoc., 885 Meadowlands Drive, Ottawa, Ontario, K2C 3M2.

REGISTRATION OF HILL 81 WHEAT1
(Reg. No. 664)

W.E. Kronstad, R. J. Metzger, W. L. McCuistion, N. H. Scott, C. R. Rohde, and M. F. Kolding

'Hill 81' (*Triticum aestivum* L.) CI 17954 is a soft white common winter wheat. It is midtall, midseason in heading with white stiff straw. The spike is awned, fusiform, mid-dense, and inclined. Glumes are white, glabrous, midlong, midwide with wanting shoulders. Awns are 3 to 8 cm long; beaks 3 to 4 mm long. Kernels are white, midlong, elliptical with a midsized germ. The crease is narrow to midwide and cheeks are.

Hill 81 was developed by the Oregon Experiment Station in cooperation with USDA-ARS, from a cross of 'Yamhill' and 'Hyslop' made in 1968. Hill 81, identified as 2M6, was obtained from bulked F3 head rows from individual F2 plants. Following replicated yield tests typical of similar F6 head rows from the F5 population in 1975 and tested further. Head rows obtained from the F6 generation were reselected for seed increase.

Hill 81 has moderate adult plant resistance to many races of stripe rust caused by *Puccinia striiformis* West and leaf rust caused by *P. rubigo-vera* (De.) Wint. in 1978. The cultivar is moderately susceptible to mildew caused by *Erysiphe graminis* De. F. Sp. *t. tritici* Marshall and Septoria caused by *Septoria tritici* Rob. in Desm. However, yield reductions from these two diseases because of the greater height and later heading of the cultivar. It has adequate resistance to *Tilletia caries* and *T. foetida* but is susceptible to foot rot caused by *Cercosporella herpotrichoides*.

Hill 81 has a rapid emergence rate, a high level of winter hardiness, efficient uptake of phosphorus, and excellent straw strength. Data from the Western Regional Soft White Winter Wheat Performance Nursery indicates wide adaptation to the winter wheat growing areas of the Pacific Northwest. The cultivar has a distinct yield advantage over all other wheat cultivars grown commercially in Western Oregon. The USDA Western Wheat Quality Laboratory in Pullman, Wash., has identified Hill 81 as having excellent breadmaking quality characteristics equal or superior to the commonly grown soft white winter wheat cultivars.

Foundation seed will be made available in the fall of 1983. Breeder seed is being maintained by the Crop Science Dep., Oregon State Univ., Corvallis, OR 97331.

2Respectively, professor of plant breeding, research geneticist, USDA-ARS, associate professor of agronomy, and instructor of agronomy, Oregon State Univ., Corvallis, OR 97331.
3Professor and senior instructor of agronomy, Columbia Basin Res. Ctr., Pendleton, OR 97801.