variety is its excellent baking quality. Its yield is equal to Selkirk in the Red River Valley, although slightly less farther west (see Table 1). It is slightly more rust resistant than Selkirk, but somewhat less resistant to lodging, being about equal to Thatcher in this respect. It is generally one day earlier maturing than Selkirk. It tends to be graded higher than Selkirk in Canada.

Pembina is a hard red spring wheat. Its spike is fusiform, mid-long, mid-dense, with apical awnlets. Glumes are short, narrow to midwide, smooth and white, with short, narrow, acute beaks, and shoulders that are narrow and sloping at the base of the spike, mid-wide and square at the centre, narrow and elevated towards the tip. The kernels are ovate, variable in size, hard and red, with a mid-wide, mid-deep crease, rounded to angular cheeks, small to mid-sized, mid-long to long and often collared brush, and with a mid-sized, rounded to oval germ.

Table 1—Mean Yield of Pembina and Selkirk in Black Soil Zone of Manitoba and Saskatchewan, 1954 to 1962

<table>
<thead>
<tr>
<th>Station</th>
<th>Pembina</th>
<th>Selkirk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winnipeg</td>
<td>35.2</td>
<td>32.4</td>
</tr>
<tr>
<td>Morden</td>
<td>41.7</td>
<td>41.4</td>
</tr>
<tr>
<td>Portage</td>
<td>57.4</td>
<td>57.4</td>
</tr>
<tr>
<td>Brandon</td>
<td>44.4</td>
<td>46.2</td>
</tr>
<tr>
<td>Indian Head</td>
<td>34.8</td>
<td>35.7</td>
</tr>
<tr>
<td>Melilot</td>
<td>37.6</td>
<td>38.2</td>
</tr>
</tbody>
</table>

Pembina is best adapted to the Red River Valley and is unlikely to be grown outside of the rust area.

Pure seed is maintained in Canada from 83 Breeder Lines of separate identity.

CANTHATCH, R.L. 2936, CI 13345, was developed by the Rust Area Project Group, centered at the Canada Department of Agriculture Research Station, Winnipeg. The parentage is Thatcher × Kenia Farmer, the crosses having been made during the period 1951 to 1953. It was licensed and distributed in Canada in 1959.1 Canthatch, a hard red spring wheat, has the St7 gene and is resistant to biotypes of stem rust races 11 and 15B to which Thatcher is susceptible. In all other respects it is similar to Thatcher. Thatcher and Canthatch can only be distinguished by the use of differential races of stem rust. Canthatch is best adapted to the brown soil zones of Saskatchewan and Alberta. Forty-two tests in this area during the period 1956 to 1959 gave a mean yield of 30.5 bushels per acre for Canthatch, and 30.0 for Thatcher. It is not useful in the leaf rust area because of its susceptibility to this disease.

Pure seed is maintained in Canada from 183 Breeder Lines of separate identity.

REGISTRATION OF REDMAN WHEAT1

(Reg. No. 424)

R. F. Peterson2

REDMAN, R.L. 1834.7, CI 12638, was developed at Winnipeg by the Dominion Laboratory of Cereal Breeding in co-operation with the Dominion Laboratory of Plant Pathology (both now part of the Canada Department of Agriculture Research Station). The cross was Regent × Canus and was made in 1934. It was licensed in 1946 and distributed in 1947. The original designation was R. F. Peterson; cultivar name is Redman (Reg. No. 323). A selection was made from the original and distributed in 19502 and was designated R. F. Peterson (Reg. No. 13047). At the time, Redman offered superior yield and leaf rust resistance for the rust area. Redman has been previously described.3 Redman is a hard red spring wheat that has a fusiform, mid-long spike, with apical awnlets. The glumes are yellow at maturity and smooth, with short, wide, acute beaks and mid-wide, sloping to rounded shoulders. The kernels are red, ovate and medium sized, with a wide, shallow crease and angular cheeks.

Pure seed is maintained in Canada from 97 Breeder Lines of separate identity.

REGISTRATION OF 525 ALFALFA1

(Reg. No. 15)

Lloyd E. Arnold3

The variety 525 was developed by the Arnold–Thomas Seed Service and Pioneer Hi-Bred Corn Company and placed in commercial seed channels in 1962. 525, experimentally designated as X-525, is a synthetic consisting of 22 clones selected from 5,000 individually spaced plants from the variety Vernal. Selection of the 22 clones was based on the following characteristics: Flower color, bloom pattern, regrowth from crowns, growth habit, leafiness, plant color, plant vigor, pod set, pod shape, and seed yield.

The new variety is a winter-hardy alfalfa with a fall growth pattern between that of Ranger and Vernal. Growth habit is semi-in tact to erect. The variety tends to be somewhat more vigorous in midsummer than Vernal or Ranger and recovers after clipping slightly more rapidly than Vernal. Some of the parental clones are resistant to the spotted alfalfa aphid, and nearly all of them carry a high degree of bacterial wilt resistance. Reaction of the variety to the potato leathopper is similar to that of Vernal. The probable area of adaptation of 525 appears to be similar to that of Ranger and Vernal.

In 2-year trials conducted by the developers at Johnston, Iowa, Willmar, Minn., Watertown, Wis., and Tipton, Indiana, hay yields of 525 were slightly higher than those of Vernal and Ranger.

Preliminary data at Five Points, Calif., in 1960 and 1961 indicated that seed yield of 525 was equal to that of Ranger and higher than the yield of Vernal.

The parental clones will be maintained by Arnold–Thomas Seed Service in California. The procedure for maintenance of stock seed classes is as follows:

A. Seed production outside area of adaptation: Breeder seed will be produced in California from vegetative cuttings of the parent clones randomized in a crossing cage or an isolated field. The seed from the cage or field will be mass harvested and planted in California to produce certified seed.

B. Seed produced in area of adaptation: Arnold–Thomas Seed Service shall have the option of producing from breeder seed, a foundation class of seed in the northern alfalfa region. Such foundation seed may only be used to produce certified seed in a northern area.

C. Limitation of seed classes and use of variety name: Arnold–Thomas Seed Service and Pioneer Hi-Bred Corn Company, the originators, indicate that the only authentic seed of this variety will be that produced from breeder seed in California and breeder seed and/or foundation seed within the variety’s area of adaptation. The variety name 525 is restricted to seed produced as described herein.

An application for review of 525 alfalfa for certification was presented to the National Certified Alfalfa Variety Review Board at its January 1962 meeting and received favorable consideration. Also, application to the California Crop Improvement Association to certify 525 in California was approved. Certified seed of 525 was offered to growers in its area of adaptation in the spring of 1963.

1 Registered under a memorandum of understanding between the Crops Research Division, ARS, USDA, and the American Society of Agronomy.
2 Arnold–Thomas Seed Service, P.O. Box 2345, Fresno, Calif.
3 Registered under a memorandum of understanding between the Crops Research Division, ARS, USDA, and the American Society of Agronomy.
4 Registered under a memorandum of understanding between the Crops Research Division, ARS, USDA, and the American Society of Agronomy. Cooperative investigations of the Crops Research Division, ARS, USDA, and the North Carolina Agricultural Experiment Station.
5 Research Geneticist, Crops Research Division, ARS, USDA, Raleigh, N. C.