OME 50 million bushels of oats are grown each year on irrigated, humid, and dry-farmed areas in the northern Rocky Mountain and north Pacific States. Although some early-maturing varieties are grown there, midseason oats have predominated for 50 years. Swedish Select, which was a popular variety 40 years ago, was supplanted by a reselection, Colorado 37, and by such foreign introductions as Victory, Ligowa, Banner, and Golden Rain. Idamine, which was selected from Silvermine at the Aberdeen Branch Station, Aberdeen, Idaho, about 1915 once rated high in Idaho. Today none of these older varieties, except Victory and Colorado 37, are grown much in this region. Victory remains popular largely because of its exceptional quality; it is generally considered as having the highest kernel quality found in oats (2).

Markton became a leading variety following the discovery of its (13) smut resistance about 1922, and it still is one of the leaders in the Northwest. Markton was crossed with most of the leading varieties in the area by G. A. Wiebe of the Division of Cereal Crops and Diseases, at Aberdeen, Idaho, in 1923 (3, 11). Smut-resistant varieties selected from these crosses, and now in production, include Bannock, Uton, Bridger, Marda, and Mission. Most of these latter varieties were distributed 10 or more years ago. Carleton, an early, smut-resistant oat grown on dry land in Oregon, was evolved from a cross between Markton and Sixty-Day (3, 11) made about 1924 by T. R. Stanton, of the Division of Cereal Crops and Diseases.

The above varieties are all of normal height; consequently, the increase, for this area, of two new short-strawed varieties, Overland and Cody (C.I. Nos. 4181 and 3916), is of special importance.

History of Overland and Cody

The senior writer crossed the Bannock (10) variety with selection 5556-102 from the Victoria-Richland (12) cross, at Aberdeen, Idaho, in 1934. A midseason oat having good resistance to both crown and stem rust was desired. The F₁ plants were grown in the greenhouse at Arlington, Va. The three F₁ plants obtained were free from smut and gave a resistant type reaction to crown rust as well as to stem rust (7). Overland is a descendant of one of these F₁ plants and Cody of another. The F₂ generation was grown at Aberdeen, Idaho, in 1935 and the F₃ generation in the Arlington greenhouse. Tests for smut resistance of the hybrid lines from which Overland and Cody were evolved were made by H. B. Humphrey in the Arlington greenhouse and the results were rechecked in the field at Ames, Iowa by H. C. Murphy. Seed from rust-resistant F₃ plants was sown at Aberdeen and Ames, Iowa, in 1936. Tests at Ames showed that progeny of one line was smut-free and was infected by rust. All progenies of this line were grown at Aberdeen at F₄ were satisfactory for resistance to both crown and stem rust in F₅ grown in 1936-37. Seed of one of these F₅ greenhouses was sown at Ames in F₆ row 1880 in 1939, single F₇ rod row at Ames in 1939. Rod rows were grown at Aberdeen in 1939 and 1940, where its superior standing ability and quality were observed. This strain (C.I. 4181), named Markton in 1944, was included in the Uniform Nursery Tests for resistance to both crown and stem rust in 1942 and its record in that region has been outstanding. The oat was named Cody in the spring of 1950 and is now being increased at several points in the Northwest.

Seed from an F₅ plant that was resistant to crown and stem rust in greenhouse tests was sown at Aberdeen in 1936. It also was sown at Ames, Iowa, for rechecking its disease reaction for both crown and stem rust at type 2.

Seed from an F₅ plant that had proved resistant for resistance to crown and stem rust in greenhouse tests in 1936-37 was sown in an F₆ 5-foot row at Aberdeen, Idaho, in 1937. This line was not grown in 1938, but it was sown at Aberdeen in 1939 in F₇. In 1940 rod rows of this strain were seeded at several points and at several other stations. At Aberdeen, this line yielded 211.2 bushels per acre compared with 202.2 bushels for Victory check. Unusually high yields were obtained at several other stations. The line (C.I. No. 3916) was entered in the Uniform Nursery Tests for resistance to both crown and stem rust on irrigated and dry land in the region in 1942 and its record in that region was outstanding. The oat was named Cody in the spring of 1950 and is now being increased at several points in the Northwest.

Smut apparently is not the most important disease of oats in the Northwest. Experiments conducted at Aberdeen, Idaho, indicated 15% infection of the 1951 crop.