THE EFFECT OF CORN SMUT ON THE YIELD OF GRAIN IN THE SAN JOAQUIN VALLEY OF CALIFORNIA

FRANCIS L. SMITH

CALIFORNIA'S corn crop is grown for two purposes, green table corn and grain corn. Roughly, a little over half of the corn acreage is utilized as a grain crop. In 1933, there were 100,000 acres of corn in California, of which 53,000 was grain corn, producing 1,696,000 bushels (13). According to the 1935 census, there were 59,716 acres of corn in California, 38,450 acres, producing 1,429,093 bushels, being grown for grain.

Grain corn in California is largely used as chicken feed. About 4,931,000 bushels were imported into California from abroad in 1935. Annually some 250,000 to 400,000 bushels are shipped in from other states. We therefore produce less than one-fourth of the corn used in the state.

Most of the state's grain crop is grown in the deltas of the San Joaquin and Sacramento rivers. The 1935 census reported San Joaquin County's grain corn as 21,221 acres, 952,820 bushels, or approximately two-thirds of the state's production.

Each year growers in these areas suffer some losses from corn smut, Ustilago zeae (Beckm.) Ung. In 1935 an effort was made to measure the loss that could be attributed to this disease. The variety generally grown throughout the delta region is known locally as King Philip, or more accurately, King Philip Hybrid. This is not to be confused with King Philip, an 8-rowed, red-grained flint corn. This variety was developed about 1900 from a field cross between Reid's Yellow Dent and King Philip, followed by a number of years selection by W. C. Sheldon, a farmer near Elk Grove, California. The grain is not a typical flint nor is it a dent, but is somewhat intermediate in...