

Obviously, the largest total losses occur in the major and minor late surplus potato-producing states (Table I), because of the comparatively large acreage planted there every year. Figure 1, which gives a graphic representation of the percentage losses in the different states, indicates that while the disease is least severe in the southern states it is not always, as is frequently stated, the most severe in the northern states.

HISTORICAL ASPECTS OF CONTROL MEASURES

EARLY DEVELOPMENT.

Treatment of potatoes in the United States actually started in 1891 when Bolley, in North Dakota, conducted his experiments on the prevention of potato scab(10)¹. In 1897 Arthur conducted similar experiments in Indiana(4). Jones introduced the formaldehyde gas method for scab control in 1900(38). In 1902 Rolfs, in Colorado, observed high percentages of the plants in certain potato fields manifesting symptoms of rhizoctonosis and recommended treatment either with formaldehyde or corrosive sublimate(73). Later he recommended the latter in particular as a specific control measure(72). About this time Selby in Ohio(80, 81), and in 1912 Güssow in Canada(35) conducted similar experiments, and it was not very long until experimental work was conducted in many parts of the country to determine the relative merits of the two treatments for controlling both scab and rhizoctonosis. These numerous investigations resulted in a rather common opinion that corrosive sublimate controlled rhizoctonosis better than formaldehyde.

CUSTOMARY METHODS OF TREATMENT

The accepted standard method of treatment until somewhat recently was to soak the tubers in a 1:1,000 solution (4 oz. to 30 gallons water) of corrosive sublimate, or in a 1:240 solution (1 pt. to 30 gallons water) of commercial formaldehyde at ordinary temperatures. These methods are cumbersome and slow, and Melhus and Gilman (52, 53, 31), using formaldehyde, offered some modifications by increasing the strength to 1:120 and the temperature to 50° C. (122° F.), and decreasing the time to 2 minutes. In New York state the use of hot rather than cold corrosive subli-

¹Figures in parentheses (*italic*) refer to "Literature Cited" in the back of this bulletin.