THE pea (Pisum sativum L.) seed planted for canning and freezing by food processors is for the most part treated with seed protectant by supplying seedsmen. This application of fungicide by large treating machines is the last seed processing step before bagging for shipment. Either dry applications of powder formulations or, more commonly, slurry treatments with wettable powders are made. The resultant effectiveness of this seed treating operation depends upon several factors including efficiency of the treating machine, reliability of its operator, and kind and amount of seed protectant used.

Few, if any, studies have been made of the adequacy of pea seed treatment even though Hagedorn (1, 3) described techniques which would be applicable. In contrast, Hoppe and Wright (7) and Hoppe (6) have tested samples of commercially treated field corn and sweet corn to determine how well they were treated. In both studies it was found that corn seed was more adequately treated the second year than the first year of the study. This paper will report the results of testing commercially treated pea seed for adequacy of seed protection. A preliminary report on portions of this study has already been made (2).

MATERIALS AND METHODS

Pea seed for testing was obtained by inviting Wisconsin canners to submit samples of commercially produced pea seed "as received" and ready for planting. Pertinent information regarding each sample was also requested. This included varietal name, supplying seedsmen, when and where grown, and seed protectant used. In 1955 a total of 91 pea seed samples were tested. They consisted of 29 varieties supplied by 11 seed companies to 11 canning companies. The corresponding 1961 figures were 76 samples, 38 varieties, 11 seed companies and 14 canning companies. For the most part the same seed and canning companies were involved both years, and many of the varieties were also identical.

The "cool" testing technique used for determining adequacy of seed protection by chemical treatment was previously described by Hagedorn (2, 3). It consisted of rolling 50 seeds in wet paper towels containing Pythium-infested muck soil and incubating these towels in specially-designed metal pans at 16° C. for 1 week before percent germination was determined. Both "as received" and "retreated" seeds were tested (Figure 1), 3 replicates each.