THE production of high yields of good quality peas has long been one of the major problems of the canning industry. Decrease in yield and quality of peas is often caused by a nutrient unbalance in the soil. An abundance of calcium in soils and nutrient solution cultures has an adverse influence on the quality of peas, and since the calcium-magnesium ratio has a highly significant effect on the uptake of these elements, the influence of the available magnesium supply on the quality of peas was studied.

One of the first investigations of factors influencing the yield and quality of peas was reported by Boswell (3) in 1929. He found that a slight delay in harvest results in a lower quality of peas, due to the rapid decrease in sugar content and increase in starch content. Sayre, Willaman, and Kertesz (10) published the first comprehensive report on factors affecting the quality of canned peas in 1931. In a series of soil and nutrient cultures in which the calcium and potassium were varied, they found any treatment which caused a higher calcium in the pea would also cause tougher peas. Fonder (4) reported variations in the calcium and magnesium contents in the calcium and magnesium contents being higher in growing plants. Musbach and Sell (6) found that the addition of fertilizers to Spencer and Miami silt loam soils increased both the yield and quality of the peas, the calcium variation in the seed coat had no correlation with the quality of the canned peas.

Quality of canned peas is a relative term and is determined by experienced judges taste testing the canned product. It is possible that differences in the canned quality may be caused by factors other than the quality of the green peas. Demands for a practical method of determining quality of peas on a factor scale led to the development of the tenderometer by Martin (5), and it is widely used by canning factories.