INTERNAL SPROUTING OF POTATOES

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In 1959, a provisional licence, renewable annually, was granted Standard Chemicals, Montreal, Que. for the sale of CIPC or Chloro-IPC (isopropyl N - (3 chlorophenyl) carbamate) for use in potato storages as a sprout inhibitor. The use of this chemical in Ontario in 1960 caused losses of up to 15 per cent due to internal sprouting in stored potatoes. All four chipping varieties examined, Sebago, Kennebec, Irish Cobbler and Idaho Russet were equally affected.

Wherever the disorder appeared symptoms were practically identical, with the sprout, instead of growing out from the tuber eye, turning inward and growing into or completely through the tuber, In many cases the end of the sprout would be swollen to form a small tuber up to one inch in diameter within the old tuber. The mother potato would split in the process and allow the young tuber to partially protrude. (Fig. 1).

The Chloro-IPC was applied on December 5, 1960 at the rate of 1 quart per 1000 bu. as an aerosol calculated to give a concentration in the storage atmosphere of 50 ppm and a concentration on the tuber surface of 1 to 2 ppm. The potatoes were stored at 50°F in pallet boxes 4' x 4' x 4', each box containing approximately 2200 lb. The disorder was first noticed in early March, about mid-way through the storage season and appeared to be more severe in the center of the boxes.

This type of reaction in the potato is not new, having been previously reported by Stewart (1) who found that potatoes which had been left in storage over the summer had produced internal tubers by September. Stuart (2) also noticed that a sample of potatoes which had been placed in a relatively warm, dry room gave rise to similar abnormal sprouts. In addition to these two cases reported in the literature a similiar sample was received by Botany Department, Ontario Agricultural College in June, 1950 from the agricultural representative at Petrolia, Ontario. However, unlike the disorder induced by Chloro-IPC, the previously reported cases of internal sprouting appeared too late in the storage season to cause any appreciable damage and were looked upon as biological curiosities rather than a serious economic problem,

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Figure 1. Internal sprouting of potatoes

Literature Cited

1. STEWART, F.C. 1918. Tubers within tubers of Solanum tuberosum, Brooklyn Bot. Gard, Mem. 1: 423-426.
2. STUART, GAGER C. 1912. Ingrowing sprouts of Solanum tuberosum. Bot. Gaz. 54: 515-524.

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