

**Title** The effect of postharvest application of gibberellic acid and benzyl adenine on the duration of dormancy of potatoes produced by plants grown from TPS

**Author** Alexios A. Alexopoulos, Konstantinos A. Akoumianakis, Stavros N. Vemmos and Harold C. Passam

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#### **Abstract**

Potato tubers from plants grown from true seed (TPS) were treated with gibberellic acid (GA) and benzyl adenine (BA) individually or in combination and stored at 5, 10 and 20 °C. The application of GA or GA + BA caused faster breakage of dormancy at 10 and 20 °C, increased weight loss and respiratory activity, mainly following the appearance of sprouts, as well as reducing the specific weight of tubers. Prior to visible sprouting, dry matter and fructose contents of the parenchyma and tissues near the buds did not significantly change, but there was a slight increase in the concentration of sucrose following GA + BA treatment. By contrast, an increase in the glucose content, initially in the tissues near the buds and subsequently in the parenchyma was observed prior to visible sprouting in tubers that had been treated with GA or GA + BA. Moreover, GA and GA + BA caused an increase in the length, fresh weight and dry matter content of sprouts. It is concluded that GA alone or in combination with BA (but not BA alone) promotes dormancy breakage and sprouting, although not necessarily via the same mechanism that occurs in the absence of growth regulator application. Tubers grown from TPS appear to respond to growth regulators in a similar way to those derived from seed tubers.