

## Simulating the Effect of Antioxidant and on Gray Mold Disease Progress

Shutian Tao<sup>1, 2</sup>, Shahrokh Khanizadeh<sup>1</sup>, Shaoling Zhang<sup>2</sup>, Rong Tsao<sup>3</sup> and Marie-Thérèse Charles<sup>1</sup>

<sup>1</sup>Horticultural Research and Development Centre, Agriculture and Agri-Food Canada, 430 Gouin Blvd., St-Jean-sur-Richelieu, Quebec, Canada, J3B 3E6; <sup>2</sup>College of Horticulture, Nanjing Agricultural University, 1 Weigang, Nanjing, Jiangsu Province, P.R. China, 210095; <sup>3</sup>Food Research Program, Agriculture and Agri-Food Canada, 93 Stone Road West, Guelph, Ontario, Canada, N1G 5C9.

The abstract should be in Roman size 12 following this format. Make the title bold and underline presenting author. Use this format  $\text{g kg}^{-1}$ . for gram per kg of unit. Strawberry (*Fragaria*×*ananassa*), as an important cash crop in Canada, is very nutritional but also delicate and perishable. In strawberry production, Gray mold is the most destructive, common and widely distributed fungal disease caused by *Botrytis cinerea*, inflicting serious losses at harvest and especially during the post harvest storage. Disease control is difficult and done by using  $1 \text{ kg ha}^{-1}$  of recommended fungicide. The pathogen can infect all plant parts of the plants at any stages of growth and genetic and selection of cultivar is one of the most important factors in controlling this disease. Chemical compositions including the phytochemicals have a major effect on disease progress.

Several antioxidants had been tested *in vitro* and all showed significant inhibitory effects on spore germination, germ tube elongation and/or the mycelial growth of *Botrytis Cinerea*. Selected antioxidants had different antifungal activities at different developmental stages of the fungi progress, and it seems that the individual and/or interaction of these antioxidants are responsible in part prevent fruits from Gray mold infection.

The results indicate lines rich in particular phenolic content may be more resistant to Gray mold which also may improve the shelf life and fruit quality and this can be achieved by enhancing the levels of such components in strawberry through breeding.