

# A Broad-spectrum Biopesticide Strain with Plant Growth Promoting Capability

VTIP 19-041: “Boxwood Endophyte *Burkholderia* sp SSG as Potential Biocontrol Agent Against a Wide Range of Pathogens”

## THE CHALLENGE

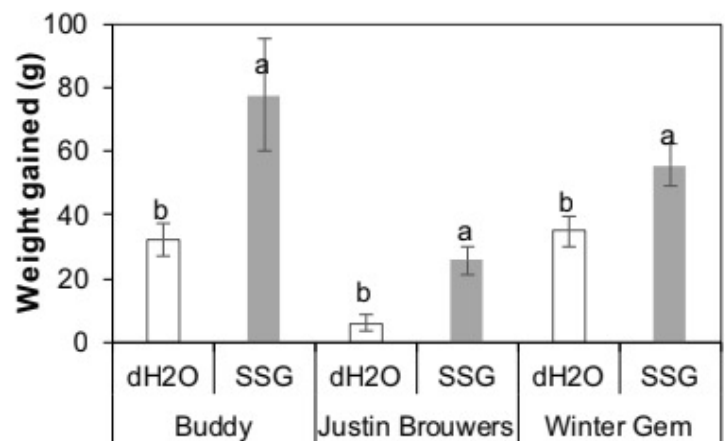
Plant diseases can wipe out entire crops and historical plantings in a short period of time as shown by boxwood blight. Globally, these diseases pose increasing risks to food security and plant biosecurity. Current approaches to disease management depend largely on chemical protection. These approaches are not sustainable due to growing costs, risks of developing fungicide resistance, and concerns for human and environmental safety. There is an urgent need to build disease-fighting mechanisms into horticultural crop products that can be carried on from production facilities to their final destinations.

## OUR SOLUTION

Ping Kong and her team at Virginia Tech have isolated a *Burkholderia* strain, SSG, from boxwood leaves. This strain provides near-complete control of boxwood blight and excellent protection against various diseases of a variety of plants caused by *Phytophthora* and other bacterial, fungal, and viral pathogens. This broad spectrum biological control strain also acts as a bio-sanitizer that reduces the boxwood blight pathogen survival on diseased leaf debris, and as a biofertilizer that enhances boxwood plant growth.



*Calonectria pseudonaviculata* growing on a boxwood plant. (Photo obtained from “The Farm at Green Village.”)



**Boxwood cultivar & treatment**

SSG consistently promotes plant growth in three common boxwood cultivars.



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