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## **MustGrow Announces Bio-Control R&D Program for Tobacco Agriculture; Targets Global Tobacco Industry**

SASKATOON, Saskatchewan (July 24, 2019) – MustGrow Biologics Corp. (MGRO-CSE) (“MustGrow” or the “Company”), an agricultural biotech company developing and commercializing a portfolio of natural biopesticides and biofertilizers for the cannabis industry, is pleased to present its previous research findings in collaboration with *Virginia Tech*’s Southern Piedmont Agricultural Research and Extension Center in Blackstone, Virginia.

A program is now underway to build on MustGrow’s encouraging scientific achievements outlined below and advance corporate collaboration discussions with tobacco industry leaders. The recent appointment of Altria Group veteran Brian Quigley to MustGrow’s board of directors illustrates MustGrow’s belief in this opportunity.

### **Background: Potential Nematode Biocontrol for Tobacco**

In 2010, MustGrow and Virginia Tech conducted a series of safety & efficacy assessments of MustGrow’s patented granular organic bio-pesticide as a natural pre-plant soil treatment. The R&D program targeted tobacco cyst nematodes, a parasitic ringworm (“**nematodes**”), which have been reported from 11 tobacco-producing countries on four continents. One form of nematode, known as *G. t. solanacearum* (“**Gts nematodes**”), is among the most damaging disease problems of flue-cured tobacco in Virginia, reducing state-wide tobacco production by an estimated 2% each year.

Despite their efficacy in reducing nematodes, the U.S. Environmental Protection Agency (EPA) in 2009 cancelled registration of pesticide Temik 15G for tobacco nematode control. Additionally, registrations for the most commonly used soil fumigants (Telone C-17, Chloropicrin, and Pic+) were amended in 2011 to include additional regulations that make soil fumigation more difficult for all tobacco producers and extremely difficult for some.

Consequently, the tobacco industry is in significant need of alternatives to traditional nematicides and soil fumigants. Research in other cropping systems has identified significant nematode suppression associated with pre-plant soil incorporation of mustard plant-derived amendments. A field experiment was therefore conducted in 2010 to compare Gts nematode population development and flue-cured tobacco growth and productivity among a set of mustard meal treatments and several standard Gts nematicides.

### **Study Objectives and Findings**

In their studies, MustGrow and Virginia Tech compared Gts nematode reproduction, growth and productivity on flue-cured tobacco grown in soil treated with standard nematicides to flue-cured tobacco grown in soil treated with MustGrow’s formulated mustard meal. The experiment, conducted in an infested field at the Southern Piedmont Agricultural Research and Extension Centers (AREC), was arranged in a randomized design with four replications. Three-row plots were used, with all data collected from the center row and a single adjacent row on each side, to avoid potential inter-plot interference.

Before treatment, the Gts nematode populations in soil were not significantly different among the treatments. After the final harvest, the populations in soil ranged from 10,228 to 28,670 eggs/500 cm<sup>3</sup> of soil:

- The highest Gts nematode densities were found in plots fumigated with Pic+ (chloropicrin + a surfactant);
- Significantly lower Gts nematode densities for plots treated with Telone II and Telone C-17, Vapam; and
- Significantly lower Gts nematode densities for all rates of MustGrow's natural granular mustard product above 500 lb/acre rate.

Building on this encouraging study, testing of MustGrow's second generation liquid technology (more concentrated, thus potentially allowing for considerably lower use-rates) on Gts nematode populations is planned in the future. From there, MustGrow intends to seek approvals as an organic biopesticide for eventual use by tobacco growers.

### **MustGrow's Signature Products**

MustGrow's signature, patented products are derived from mustard seed, utilizing the plant's natural defense mechanism as a pre-plant soil biopesticide. Organic compounds found within mustard (Brassica) plants, combined with water, form allyl isothiocyanate (AITC), which is the active ingredient in MustGrow's signature products. The Company believes that the natural AITC chemical has untapped potential to benefit agricultural production – both as a biopesticide/fungicide and biofertilizer – and has yet to be fully explored and commercialized. MustGrow has concentrated the active ingredient in both granular and liquid form to maximize safety and efficacy.

In addition to its signature biopesticides, MustGrow is compiling a science-based suite of biological products, assessing potential product labels from third parties. These products will be natural and/or organic biopesticides and biofertilizers, and MustGrow is working toward in-licensing private labels and/or distributing current third-party product brands to Canadian cannabis licensed producers (LPs) exclusively through MustGrow.

The first third-party product that MustGrow has brought in under this strategy is Triangle Plant Science's TP-1000. MustGrow has exclusive distribution of TP-1000 in Canada and key registered cannabis markets globally. TP-1000 provides improved nutrient utilization in support of earlier growth and optimal flowering for plants, including cannabis. Third-party indoor trials have demonstrated excellent performance in hydroponic cannabis applications, with significant increases in yield, terpene and THC levels. MustGrow looks forward to testing this product with Canadian licensed cannabis producers and being the sole distributor to them.

### **About MustGrow**

MustGrow is an agricultural biotech company focused on developing and commercializing its patented natural biologic product that acts as a pesticide, fungicide nematicide and fertilizer. Targeting the fruit, vegetable, turf, ornamentals and cannabis industries, MustGrow has designed a United States EPA-approved organic solution that uses the mustard seed's natural defence mechanisms to protect plants from pests and diseases. Approximately \$9 million has previously been spent and 110 independent tests completed, validating MustGrow's remarkably safe and effective granular product.

MustGrow's granular product is EPA-approved across all key U.S. states as a fertilizer and pesticide (currently limited to fertilizer in California) and is designated by Health Canada's PMRA (Pest Management Regulatory Agency) as a fruit, vegetable, turf and ornamental biopesticide and biofertilizer.

In cannabis, MustGrow is currently developing reliable, safe and biological solutions that adhere to Health Canada's strict regulations. MustGrow is positioning its signature product as an effective pre-plant soil treatment, reducing the chance for any added soil introduced to a greenhouse to bring in pests or diseases. MustGrow expects its biopesticide and biofertilizer will help licensed cannabis producers control the same conditions addressed in fruit and vegetable crops.

The Company has 25.0 million basic common shares issued and outstanding and 36.9 million on a fully-diluted basis. For further details, including MustGrow's corporate presentation, please visit [www.mustgrow.ca](http://www.mustgrow.ca).

## **ON BEHALF OF THE BOARD**

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### **Forward-Looking Statements**

Certain statements included in this website constitute "forward-looking statements" which involve known and unknown risks, uncertainties and other factors that may affect the results, performance or achievements of MustGrow.

Generally, forward-looking information can be identified by the use of forward-looking terminology such as "plans", "expects", "is expected", "budget", "estimates", "intends", "anticipates" or "does not anticipate", or "believes", or variations of such words and phrases or statements that certain actions, events or results "may", "could", "would", "might", "occur" or "be achieved".

Forward-looking statements are subject to a number of risks and uncertainties that may cause the actual results of MustGrow to differ materially from those discussed in such forward-looking statements, and even if such actual results are realized or substantially realized, there can be no assurance that they will have the expected consequences to, or effects on, MustGrow.

These risks are described in more detail in MustGrow's Prospectus and other continuous disclosure documents filed by MustGrow with the applicable securities regulatory authorities and available at [www.sedar.com](http://www.sedar.com). Readers are referred to such documents for more detailed information about MustGrow, which is subject to the qualifications, assumptions and notes set forth therein.

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