Introduction and Purpose

About us:

CanAmerica PHMGH Inc 2021 (CanAmerica) is a Canadian company working to become the leaders in the global of polyhexamethylene guanidine hydrochloride (PHMGH) market. PHMGH has been identified as a useful polymer for its sterilization and disinfecting properties, but problems with stability and toxicity have contributed to the widespread adoption of PHMGH.

Skillful research and development on PHMGH for almost a decade has resulted in CanAmerica developing innovations that now enables the company to provide a low cost, effective and safe PHMGH product called StampOut™.

This document is intended to provide some compelling data that introduces StampOut™, and hopefully encourages a pilot project regarding StampOut™ and coffee rust.

(Please note that while StampOut™ is a biocide and virucide, currently it is only approved by the Canadian government as a general cleaner. Therefore, if the pilot project yields favourable results, and elicits customer interest, CanAmerica will need to secure regulatory approval to sell the product commercially.)

Business Case for Integrating StampOut™

Summary:

StampOut™ is an alternative to reduce fungicide use while increasing protection against coffee rust. It works faster, at lower concentrations, and avoids the soil and worker health issues associated with copper and triazoles. Since it targets fungi in a different way, it also helps break resistance cycles that threaten your current spray program. CanAm proposes to run a quick pilot.

Why we think a producer would be interested: low risk, high upside.

Below is a comparative analysis table outlining the competitive advantages of StampOut™ against known product options for coffee rust mitigation.

Comparative Analysis: StampOut™ vs. Existing Coffee Rust Fungicides

Attribute	**StampOut™ (PHMGH)**	**Copper-Based Fungicides**	**Triazole Fungicides**	**Biological Control (e.g. *Bacillus* spp.)**
Mode of Action	Membrane disruption, protein denaturation	Multi-site contact; ion toxicity	Inhibits ergosterol biosynthesis (systemic)	Competitive exclusion, induced resistance
Efficacy (lab)	MIC/MFC at 0.04 mg/mL	Moderate; requires high concentrations	High, but resistance-prone	Variable and strain-dependent
Spectrum of Activity	Broad (bacteria + fungi); one unknown resisted	Narrower spectrum; mostly fungi	Narrow (specific to fungi)	Narrow; mostly preventative
Speed of Action	Rapid kill at low dose	Slower; requires re-application	Slower systemic uptake	Preventative; slow onset

Attribute	StampOut™ (PHMGH)	Copper-Based Fungicides	Triazole Fungicides	Biological Control (e.g. *Bacillus* spp.)
Field Persistence	Moderately persistent, non-volatile	Persistent, but with phytotoxicity risk	Systemic but degrades faster	Limited in-field survival
Resistance Risk	Low (multi-target mechanism)	Low, but accumulation limits usage	Medium–high; single-target mechanism	Low, but efficacy inconsistent
Environmental Impact	Biodegradable, low ecotoxicity (polymer)	High: soil toxicity, water contamination	Medium: potential groundwater issues	Low; eco-friendly
Human & Worker Safety	High causing skin /eye irritation	Moderate–high skin/eye irritation	Health risks (carcinogenicity in some types)	Very safe
Application Frequency	Potential for low-frequency use	High-frequency required	Typically 2–3x per season	Frequent, especially during rain
Compatibility with Organics	Not certified yet, but likely compatible	Organic-approved variants exist	Not organic-approved	Organic-approved
Cost Efficiency (per treated hectare)	**~$5/ha per application** (1-2 applications per year)	$100–$400/ha per year	$100–$400/ha per year	$100–$400/ha per year

Why StampOut™ Stands Out

1. **Lower Required Dose = Lower Cost per Application**
   - In vitro data shows elimination of most fungal populations at **0.04 mg/mL**, meaning fewer liters of product are needed than copper or triazoles.

2. **Multi-Mechanism Action = Lower Resistance Risk**
   - PHMGH kills by physically and chemically damaging the cell membrane and interfering with proteins—not just targeting one enzyme like triazoles.

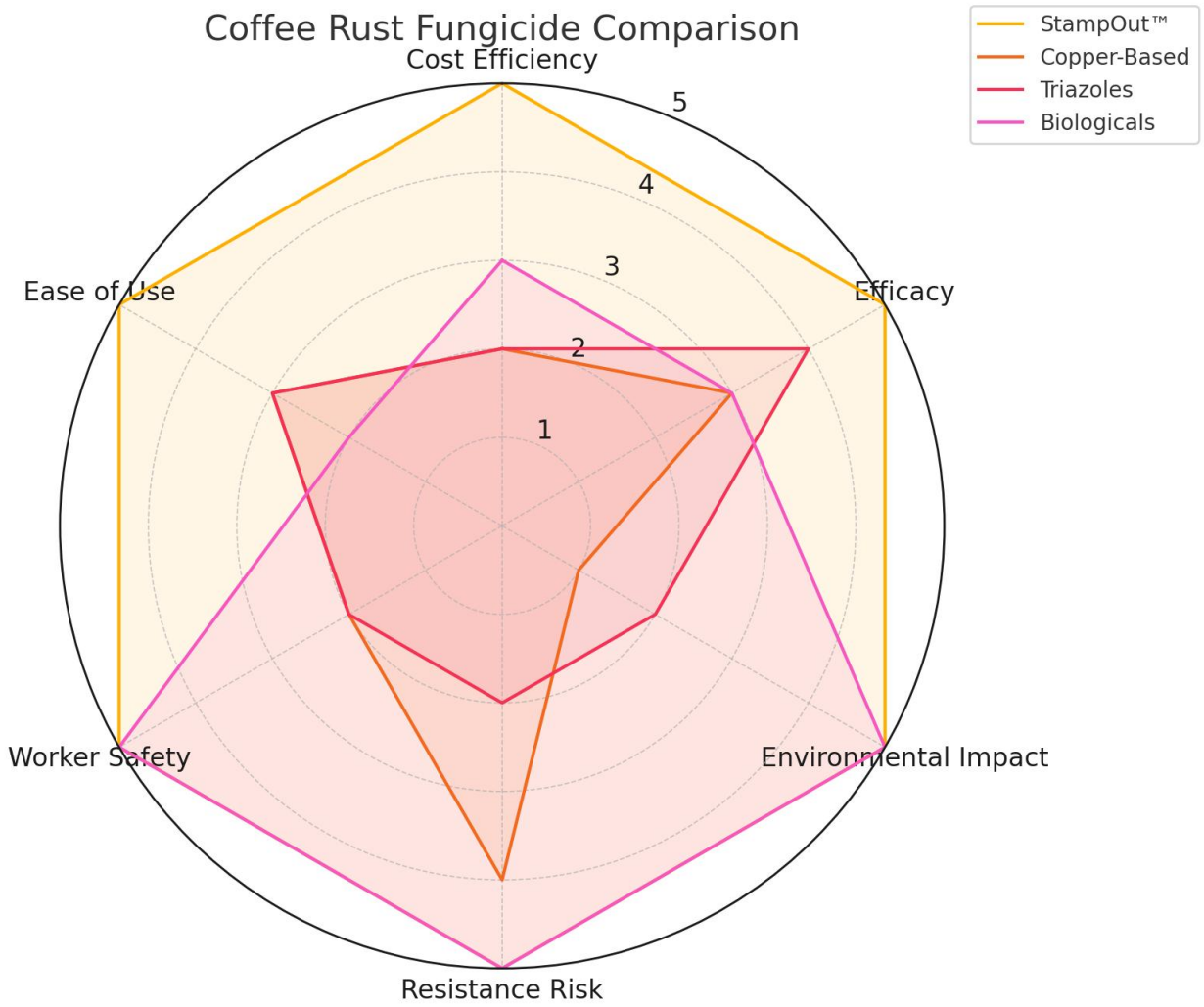
3. **Superior Safety Profile**
   - Non-volatile, non-corrosive, and low oral/inhalation toxicity mean **safer for workers, no PPE overkill**, and fewer health liabilities.

4. **Environmental Sustainability**
   - Unlike copper, which **accumulates in soil** and can destroy beneficial microbes, PHMGH **breaks down into safe components** over time.

5. **Easier to Use**
   - Non-staining, neutral pH, and compatible with typical spray equipment—no special handling needed.

6. **No Known Commercial Resistance**
   - Triazoles have documented resistance; PHMGH does **not**, making it ideal for regions where triazoles are becoming ineffective.

To provide a visual of some of the advantages, below is a radar map comparing **StampOut™**, copper-based fungicides, triazoles, and biological controls across six key dimensions. The map shows, **StampOut™ consistently scores high**, especially in cost efficiency, safety, and environmental impact—making it a compelling option for pilot trials.



Our Request:

- Have a coffee producer run a pilot trial whereby StampOutTM is applied to a limited number of plants with coffee rust.
- CanAM is prepared to launch this pilot within 7 days of agreement with a producer.

References:

1. Report on Coffee Rust (which provides the data about PHMGH).
2. All other data taken from public sources.