



**A World of Green and Clean**

# Animal Health

**GREEN MOUNTAIN AND CLEAR WATER IS BETTER THEN GOLD AND SILVER MOUNTAIN**

*To provide alternative, breakthrough, disinfecting technologies to reduce exposure to toxic chemicals and development of antibiotic resistance*

...and developing botanically derived disinfecting products to meet our customers' needs in solving today's toughest pathogenic problems



**Part 1: Corporate presentation**

**Part 2: Technology**

**Part 3: Business Units**

- Animal Health
- Crop
- Surface

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# CORPORATE PRESENTATION

### Company Background

Laboratory M2 (LM2) based in Quebec, Canada, develops and markets a botanically derived, breakthrough disinfecting technology. *Its mission is: To provide alternative, breakthrough, disinfecting technologies to reduce exposure to toxic chemicals and development of antibiotic resistance to meet our customers' needs in solving today's toughest biosecurity and pathogenic problems*

Distribution contracts: Canada, United States, China, Japan, Irak. Products containing the LM2's proprietary formulations are trademarked as Thymox® and all provide highly effective, EPA registered, disinfecting and cleaning efficacy. LM2's unique selling points are avoidance of a) exposure to toxic chemicals and b) development of antibiotic resistance. The patented, core formulation is based on thymol, which has natural antimicrobial properties. Use case have been developed for a variety pathogenic problems in Animal Health, Crop Science and Surface Disinfection, specifically segmented into 4 markets and 3 business units.

- Laboratory M2, is a green technology, life sciences company and maker of THYMOX®
- Headquartered in Sherbrooke, Quebec
- Focused on botanically derived disinfecting
- Core formulation/technology can be applied to a variety of microbial pathogens problems
- Commercial use cases in multiple markets
- Sales and distribution on 3 continents, in major markets.
- State-of-the-art laboratory and professional staff to support research and development
- Strong intellectual properties strategy
- Scale up of manufacturing completed, international footprint
- Near unlimited supply of raw materials and capacity of finished product

- On trend technology
- Growing markets
- Large body of institutional knowledge
- Base IP protected and registered
- Innovative, commercialized products
- In high growth commercialization phase
- Scalable manufacturing capabilities, low CAPEX
- Portfolio of strategic innovation in pipeline



### Animal Health

- Footbath solution for dairy cows (approved as veterinary drug in Canada)
- Topical wound dressing to combat hoof disease with broad applications in antibiotic stewardship; now seeking INADA approval or medical device status to prosecute as an antibiotic alternative for lesions
- New formulations for pork and poultry viruses
- Various possible companion animal applications, including shampoos, antifungals and parasite repellents



### Crop Protection

- Antimicrobial, antifungal and insect repellent for crops/plants
- Next generation 25b product (which does not require EPA registration) for crop protection, including organic production



### Surface Disinfecting

- A line of general purpose disinfectant for building and remediation, branded Bioesque™, powered by Thymox®
- Consumer product, a ready-to-use spray for home use, Branded “Miracle Clean®”
- Wipes and laundry, dishwashing applications under development
- Bio-security applications for pork and poultry



## BRANDS PER BUSINESS UNITS

Surface Disinfecting

**BIOESQUE™**  
SOLUTIONS



Animal Health

**THYMOX™**  
HOOF

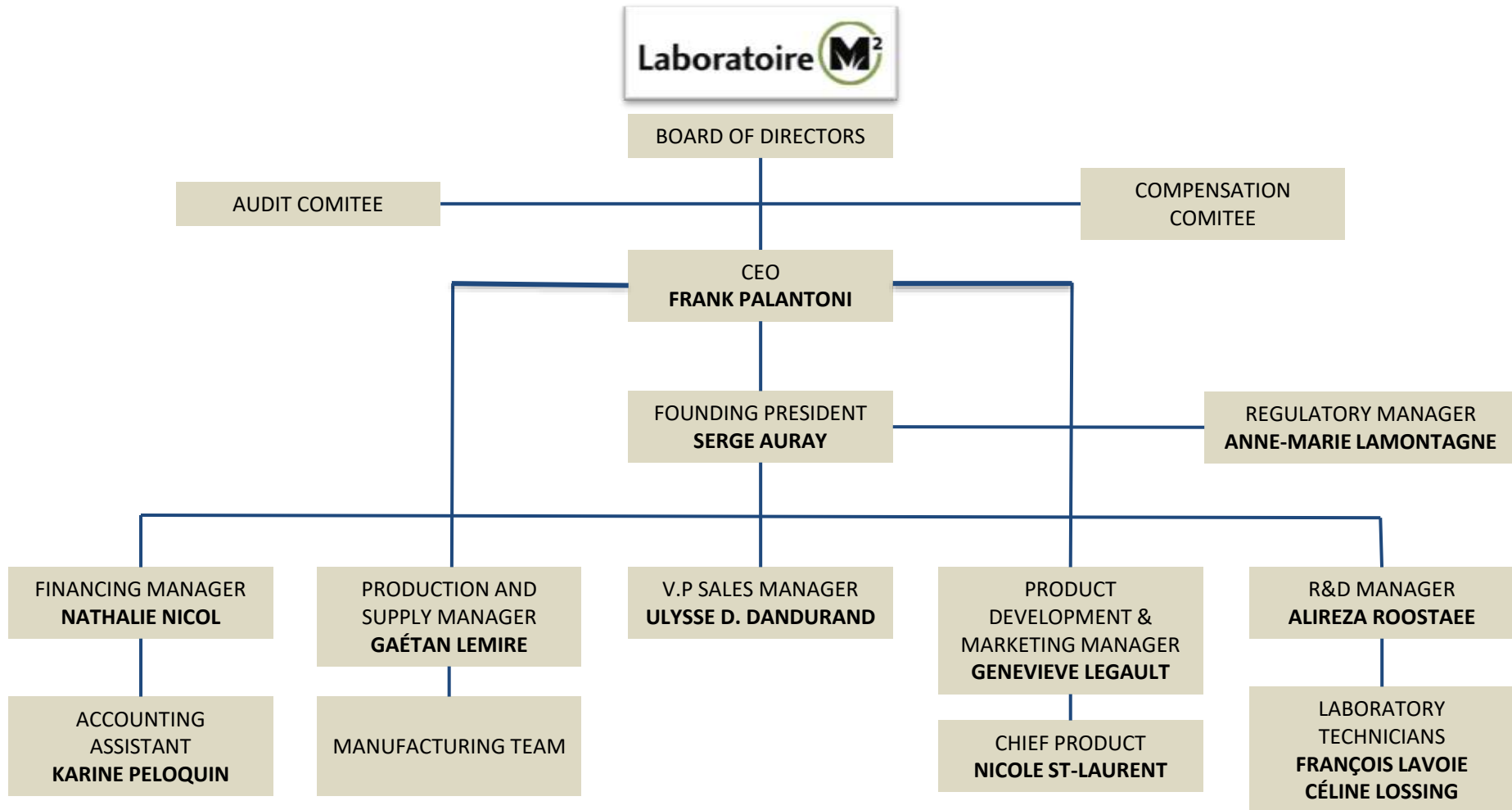


Crop Protection

**THYMOX™**  
CONTROL



# ORGANIZATIONAL CHART



# PATENT PORTFOLIO

Antimicrobial Nano-Emulsion ( <b>CROP 25b</b> )																										
COMPOSITION FOR USE AS PESTICIDE, FERTILIZER, ( <b>CROP</b> )	✓																									
TOPICAL USE OF AN ANTIMICROBIAL FORMULATION ( <b>Dairy</b> )	✓																									
AQUEOUS DISINFECTANT FORMULATION ( <b>Surface</b> )	✓																									
Countries	PCT (Patent Cooperation Treaty)	United States	Canada	Australia	Japan	Mexico	Chile	Brazil	South Korea	Colombia	China	Hong Kong	European Union	Germany	France	United-Kingdom	Netherlands	Ireland	Belgium	India	Philippines	Viet-Nam	Ivory Coast			

## Legend

Issued Patent

Pending Application

# TRADEMARK PORTFOLIO

CANNAMOX								
LABORATOIRE M2 & Drawing								
THE HOMEGROWN INITIATIVE								
THYMOX								
THYMOX FOOTBATH								
THYMOX GRO & Drawing								
THYMOX HOOF								
THYMOX HOOF DEFENDER								
THYMOX HOOFCARE								
THYMOX CONTROL & Drawing								
THYMOX TECHNOLOGY								
COUNTRIES	USA	CHINA	CANADA	EUROPE	INDIA	HONG KONG	JAPAN	VIETNAM

## LEGEND

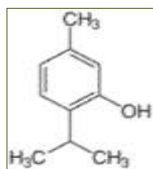
	In Progress – For approbation
	Registered

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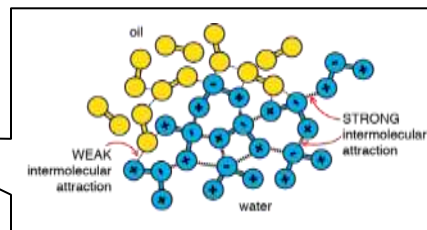
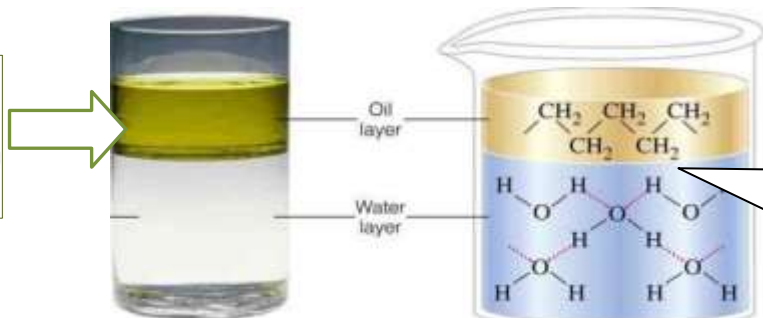
TECHNOLOGY

# TECHNOLOGY OVERVIEW

Thymol, the active, botanically derived antimicrobial, is well known, but difficult to use.....it is not soluble in water (a phenol)

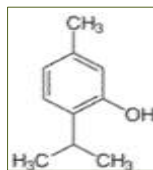


Thymol



2 phases, majority of the activity is tightly bound, not available to disinfect

THYMOX® technology solves the problem



Thymol



Virtually 100% of the active is available (nano-emulsion)

**THYMOX® makes practical the antimicrobial power of nature**

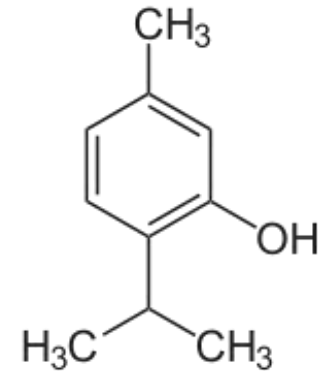
### SAFETY & EFFICACY

Long history of use (spice/preservative).

Unlikely that negative health effects will occur on long term.

- Best **efficacy** amongst natural phenols
- **GRAS** molecule (Generally Recognized As Safe)
- Listed as a **flavoring** agent in the EU
- EPA's list of **Minimal Risk** Pesticides includes Thyme Oil

### THYMOL



# PRODUCT PROFILE

## OUTSTANDING EFFICACY - KILLS 99.99% OF PATHOGENIC MICROBES (EPA Registered RTU)

ANTIMICROBIAL EFFICACY			
BACTERIA CONTACT TIME: <b>2 MIN</b>	MOLDS/YEASTS CONTACT TIME: <b>3 MIN</b>	VIRUSES CONTACT TIME: <b>1 MIN</b>	SANITIZING CONTACT TIME: <b>30 SEC, 1 MIN (FOOD), 2 MIN (SOFT)</b>
<i>S. aureus</i> <i>P. aeruginosa</i> <i>S. enterica</i> <i>L. monocytogenes</i> <i>E. coli / E. coli O157 :H7</i> <i>S. suis</i> VRE MRSA <i>K. pneumoniae</i> NDM-1	<i>T. interdigitale</i> <i>C. albicans</i>	Influenza virus A HIV-1 Human Coronavirus	<i>S. aureus</i>  <i>E. aerogenes</i>
	<b>MYCOBACTERIA CONTACT TIME: <b>3 MIN</b></b>	<b>NON-ENVELOPED VIRUSES CONTACT TIME: <b>4 MIN</b></b>	Definition of 3 Levels of Disinfection 1.High-level disinfection -kills all organisms, except high levels of bacterial spores, and is effected with a chemical germicide cleared for marketing as a sterilant by FDA. Typically not used for generalized disinfecting. 2.Intermediate-level disinfection -kills mycobacterium, most viruses, and bacteria with a chemical germicide registered as a "tuberculocide" by EPA. 3.Low-level disinfection -kills some viruses and bacteria with a chemical germicide registered as a hospital disinfectant by the EPA.
	<i>Mycobacterium bovis</i>	Feline calicivirus (Norovirus surrogate)	



## KEY ADVANTAGES

Thymox is superior on all key attributes



Environment

- ✓ Botanically-derived, eco-friendly, biodegradable *In less than 14 days*
- ✓ No field contamination so *waste management is made easy*
- ✓ Does not harm aquatic life

People

- ✓ Safe for Workers
- ✓ Non-toxic Non-irritating

Equipment

- ✓ Non-Corrosive, will not impact concrete or metal

Status

- ✓ GRAS (Generally recognized as safe)

## Traditional Chemicals

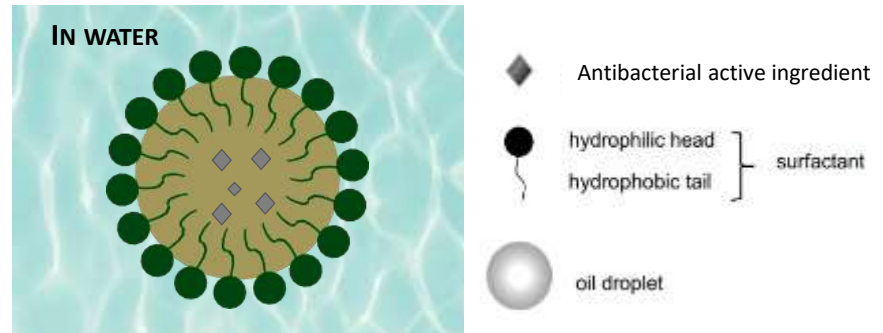
Acids  
Phenols  
Aldehydes  
Iodines  
Oxide  
Alcohol  
Chlorine  
Others

## KEY ADVANTAGES

Disinfectant	Advantages	Disadvantages
<b>Thymox</b>	<ul style="list-style-type: none"> <li>✓ Botanically derived</li> <li>✓ Biodegradable</li> <li>✓ No field contamination</li> <li>✓ Not corrosive</li> <li>✓ Non toxic/Non irritating</li> <li>✓ Safe to humans</li> <li>✓ Kills bacteria/Fungi/All viruses</li> </ul>	<ul style="list-style-type: none"> <li>➤ Efficiency against <i>C. difficile</i> spores and <i>Aspergillus</i> spores questionable</li> </ul>
<b>Chlorines</b>	<ul style="list-style-type: none"> <li>✓ Biodegradable</li> <li>✓ Low level of toxicity</li> </ul>	<ul style="list-style-type: none"> <li>➤ Sporocidal properties questionable</li> <li>➤ Skin irritation</li> <li>➤ Corrosion of metals</li> <li>➤ Manufacturing</li> </ul>
<b>Iodines</b>	<ul style="list-style-type: none"> <li>✓ Biodegradable</li> <li>✓ Effective against most vegetative bacteria</li> </ul>	<ul style="list-style-type: none"> <li>➤ Gram negative bacteria can resist</li> <li>➤ May stain skin and cause irritation</li> <li>➤ Corrosive of some surfaces</li> </ul>
<b>Phenols</b>	<ul style="list-style-type: none"> <li>✓ Broad spectrum antibacterial</li> </ul>	<ul style="list-style-type: none"> <li>➤ Skin and mucous membrane irritant</li> <li>➤ Toxic</li> <li>➤ Not easily degradable</li> <li>➤ Gram negative bacteria can resist</li> </ul>
<b>Aldehydes</b>	<ul style="list-style-type: none"> <li>✓ Biodegradable</li> </ul>	<ul style="list-style-type: none"> <li>➤ Extremely Pungent and suffocating odor</li> <li>➤ Skin and mucous membrane irritant</li> <li>➤ Can cause allergic dermatitis</li> <li>➤ Potentially carcinogenic and corrosive</li> </ul>

## WHY ARE NANO EMULSION SUCH A UNIQUE TECHNOLOGY

- A colloidal dispersion system that is thermodynamically stable
- Consists of two immiscible liquids like water and oil (active ingredient)
- Active Ingredient is a hydrophobic molecule with lipophilic characteristics, ex. phenols
- It is stabilized by an interfacial film consisting of a suitable surfactant
- Well below a micrometer in size



**Phenolic nano emulsions antimicrobial MOA is contact,  
Therefore, smaller/more = less cost/more efficacy = more killing**

**THYMOX® is MORE EFFECTIVE for LESS the cost**

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**BUSINESS UNIT**  
**ANIMAL HEALTH**

Worldwide, a **consolidation** of dairy farms is happening.

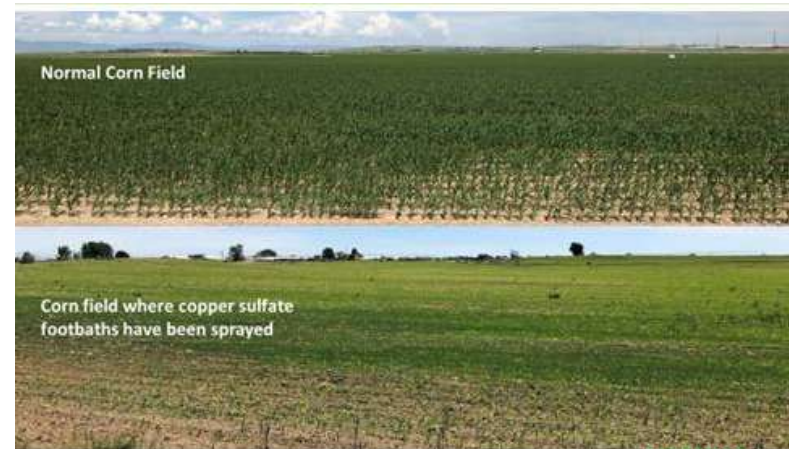
**Depreciated farm-gate prices** for milk have now been the norm in the West for several years, putting more pressure on farms to be as efficient as possible.

Farms that are larger, progressive and **pro-active** in the fields of cow comfort, genetics nutrition and lameness generally fare better. These farms pay close attention to lameness and establish programs to address it, including footbaths.

Crop land productivity is essential to farmers, yet the most widely used footbath chemical, copper sulfate, will lead to **devastating** effects on yields.

Antibiotics use on farms is getting more **scrutinized** every year, which limits treatment options.

As a result: both **prevention and treatment** of lameness are facing significant challenges.



The Thymox line of hoof care options bridges the gap between the farmers' needs for:

- Effective lameness prevention and treatment
- Products that are safe for users, animals and environment
- Convenience

**THYMOX** products are:  
HOOF CARE

- Backed by a significant amount of science-based, comparative studies demonstrating their efficacy
- Price-competitive vs copper sulfate
- Easy and safe to handle liquids
- Biodegradable
- Non-antibiotics chemistries

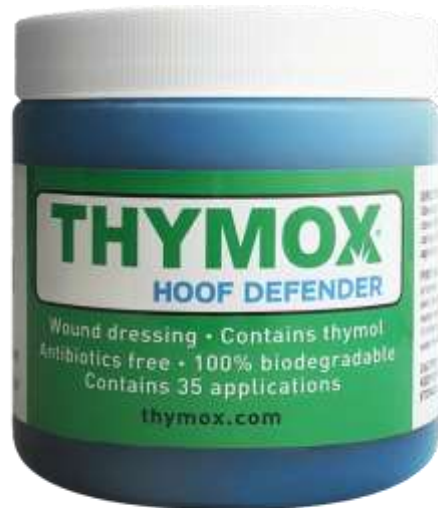
**THYMOX**  
FOOTBATH

**THYMOX**  
HOOF DEFENDER

# THYMOX<sup>®</sup>

HOOF DEFENDER

**Thymox Hoof Defender** is a wound dressing topical gel made to be used on Digital Dermatitis lesions. It can be applied instead of antibiotics.



- Accelerates healing process associated with Digital Dermatitis lesions
- MoA is likely non-resistance inducing
- May offer an alternative to current antibiotic
- Pilot study results demonstrate healing acceleration

# THYMOX | SPRAY

Thymox Hoof Defender is a wound dressing topical spray made to be used on Digital Dermatitis lesions. It can be applied instead of antibiotics. Suitable and convenient for milking parlor use.



<p><b>DIRECTIONS:</b> Clean affected area and apply liberally until completely covered.</p> <p><b>FIRST AID:</b> In case of contact with eyes or skin, flush thoroughly with water; seek medical attention if irritation persists. If ingested, seek medical advice immediately.</p> <p><b>CAUTION:</b> Irritant. May irritate eyes and skin.</p> <p><b>STORAGE:</b> Store at room temperature. Avoid freezing.</p> <p>For animal use and external use only. <b>KEEP OUT OF REACH OF CHILDREN. DO NOT INGEST.</b></p>  	  <p><b>THYMOX</b> HOOF DEFENDER</p> <p>WOUND DRESSING TOPICAL SPRAY</p> <p>Antibiotic free • Readily Biodegradable For use on cows' and cattle's hooves.</p> <p>Net contents: 1 gal (3.78 L)</p>
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# THYMOX<sup>®</sup>

FOOTBATH



Thymox Footbath is the flagship footbath product, for use in the control of Digital Dermatitis. It is similar to Thymox HOOOF (registered drug in Canada) in composition and scope.

- Easy to Use and Cost Effective  
Concentrated solution in 20L – 200L – 1000L
- Reliable hoof bath solution in a digital dermatitis control program (assessed by 3<sup>rd</sup> parties in several field trials)
- Alternative to Copper Sulfate and Formaldehyde

## DAIRY SEGMENT - CANADA



Canada

- CDMV showed its strength: easy access for vets with “one stop shopping”
- Expanding sales by more aggressive, end user promotions

**THYMOX Hoof** :First and only footbath “drug” by Veterinary Drug Directorate (VDD), Health Canada



Health Canada

**THYMOX Hoof**  
Certified by **OMRI**  
and **Québec Vrai** for  
organic production.





USA

Converted 26 dairies with 130,000 cows  
Opened 16 new dairies with 24,000 cows



John Eakin,  
Founder and President

*"We've been in the dairy footbath business for over 30 years, so we've seen firsthand the spread of digital dermatitis, and know that the current footbath methods are not sustainable. With THYMOX we are giving farmers a new, effective way to combat digital dermatitis without mortgaging the health and productivity of their fields or their health."*



THYMOX™ Wins Innovation Award at 2018 World Ag Expo

(Sherbrooke, Quebec - January 3, 2018) — THYMOX™, the innovative, botanically derived Animal Health technology, has been named one of the 10 most innovative agricultural products of the 2018 World Ag Expo. The Expo which will be held in Tulare, California, February 13-15 draws over 100,000 attendees every year.

## DAIRY SEGMENT – CHINA



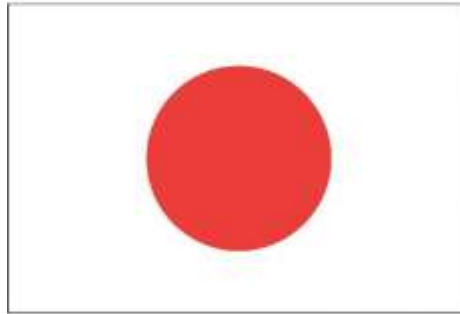
**UNITERUMEN**

- Accepted at 85 dairies
- Represents 237,000 cows
- Very active in local marketing



Each year, Dr. Clavet spent 20 days in China on scientific lectures and hoof training





- **We have been partners with Zenoaq in Japan since 2015.**
- **They sell Thymox Footbath under the “Hoof-Thyme” brand**
- **Their sales in the field have been steady over the years.**
- **They are now adopting Thymox Hoof Defender as well.**

**THYMOX**  
AG

COVID-19 claim!



**THYMOX AG**® Broad Spectrum (Virucidal\* Bactericidal, Fungicidal, Tuberculocidal Disinfectant) **Hard Surface Disinfectant concentrate** for barns, animal husbandry, farms buildings and equipment, registered with Health-Canada.

- Cleaning your barn without having to worry about your health, your employees' health AND your animals' health.
- **Non-corrosive:** saves replacing heaters, door locks & other metal parts within barn that aren't high grade stainless steel
- Fully biodegradable in less than 2 weeks and certified UL EcoLogo

**THYMOX**  
EXT

COVID-19 claim!



**THYMOX EXT**® is a Broad Spectrum (Virucidal\* Bactericidal, Fungicidal, Tuberculocidal Disinfectant) Ready to use **Hard Surface Disinfectant** for organizations, including vet clinics and farm offices, registered with Health-Canada and US EPA.

1. Kills 99.9% of microbes in 3 minutes, kills bacteria in 2 minutes!
2. A one-step disinfectant-cleaner (no pre-cleaning)
3. Excellent option for disinfecting tools and equipment while on the road or at the office. Non-corrosive.

We provide a complete protocol to support our products.

LM2 has provided biosecurity guides for the disinfection of swine trucks, barns and equipment for all the swine industry in Canada.



## PROTOCOLE DE LAVAGE, DÉSINFECTION ET SÉCHAGE

En plus des quatre étapes de lavage, désinfection et séchage, le protocole proposé inclut des opérations de planification, de contrôle et d'inspection identifiées par le signe . Pour assurer un contrôle optimal des microbes, il est conseillé d'appliquer rigoureusement et dès la sortie des animaux, toutes les opérations présentées. Des outils pratiques pour accompagner les producteurs et productrices de porcs dans leurs opérations de lavage et désinfection se retrouvent en annexes.

ANNEXE I: GRILLE A: SUIVI DES OPERATIONS DE LAVAGE, DÉSINFECTION ET SÉCHAGE	
	<ul style="list-style-type: none"> <li>Planification des opérations</li> <li>Nettoyage et lavage de l'extérieur du bâtiment</li> </ul>
ÉTAPE 1-2	<b>LAVAGE</b> <b>ÉLIMINER TOUT LE FUMIER</b> A. Préparation des salles B. Trempage des surfaces C. Rinçage à haute pression <b>LAVER AVEC UN DÉTERGENT DÉGRAISSEUR</b>
	<ul style="list-style-type: none"> <li>Réparation et entretien du bâtiment et des équipements</li> <li>Inspection de la qualité du lavage</li> </ul> ANNEXE I: GRILLE B: INSPECTION DE LA QUALITÉ DU LAVAGE
ÉTAPE 3	<b>DÉSINFECTION</b> <b>APPLIQUER LA JUSTE CONCENTRATION ET QUANTITÉ DE DÉSINFECTANT</b> ANNEXE II: PROCÉDURE POUR APPLIQUER LA BONNE CONCENTRATION DE DÉSINFECTANT
	<ul style="list-style-type: none"> <li>Protection des zones désinfectées</li> </ul> ANNEXE I: GRILLE C: CONTRÔLE DES MESURES DE PROTECTION DES ZONES DÉSINFECTÉES
ÉTAPE 4	<b>SÉCHAGE</b> <b>SÉCHER RAPIDEMENT ET COMPLÈTEMENT</b>
	<ul style="list-style-type: none"> <li>Évaluation de l'efficacité de la désinfection</li> </ul> ANNEXE III: PROCÉDURE D'ÉCHANTILLONNAGE AVEC DES GÉLOSES CONTACT

5 Guide de lavage, désinfection et séchage des porcheries  
DOCUMENT DE RÉFÉRENCE



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# BUSINESS UNIT SURFACE

# THYMOX DISINFECTANT

## PROFESSIONAL GRADE BOTANICAL DISINFECTANT & CLEANING SOLUTIONS



FORMULATED WITH  
**THYMOX**  
TECHNOLOGY



Bactericidal, Virucidal\*, Tuberculocidal, and Fungicidal\*\*  
Disinfect, Sanitize, Clean, and Deodorize in ONE STEP

## Thymox is commercialized in the retail channel

### Approved Claims – EPA-registered label

1. Kills 99.9% of microbes **as it cleans** in 3 minutes, kills bacteria in 2 minutes!
2. A one-step disinfectant-cleaner
3. **Botanically** derived active ingredient
4. An **essential oil** technology
5. Contains no bleach, no phosphate
6. A non abrasive formula
7. Thyme for change... Cuts Cleaning Thyme!



- ✓ **No signal word or précautionner statement** needed on the label !
- ✓ **Safe** for surfaces - **Non corrosive** on surfaces - **Will not scratch** surfaces
- ✓ An EPA-registered product, with proven efficacy!

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**BUSINESS UNIT**  
**CROP PROTECTION**

## THYMOX CONTROL® IS THE PERFECT SOLUTION when synthetic pesticides and resistance-causing antibiotics are not appropriate.

### INNOVATIVE

Built on 10 years of science and experience with botanically derived thymol-based products.

THYMOX CONTROL® helps control fungal and bacterial diseases such as:



POWDERY MILDEW



GREY MOLD  
(*Botrytis cinerea*)



FIREBLIGHT  
(*Erwinia amylovora*)

USE FOR:

- ORCHARDS & VINEYARDS
- OTHER VEGETABLE FARMING

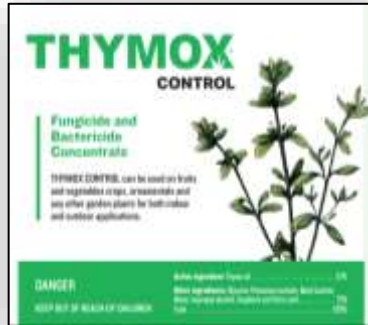


FIFRA 25(b)



NEXT STEP:  
Certification for  
Organic use

Botanical Fungicide and  
Bactericide formulated using  
**Thyme Oil**



## 32 States Registered compliant for sale

