

New Product

IR-4 Industry Technology Session
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Garlic oil-based Technology

Botanical Insecticide & Repellent

CROP PROTECTION

KEMIN®

CROP TECHNOLOGIES

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Insecticide & Repellent



BOTANICAL-OIL BASED BIOPESTICIDE

- Emulsifiable concentrate
- FIFRA 25(b) Exempt



BROAD SPECTRUM

- Lepidopteran pests
- Various insects' species



FOLIAR SPRAY

- Standard ground equipment



BROAD APPLICATION SITES

- All commercial specialty crops
- Indoor and outdoor



Benefits of Biologicals



**WORKER
SAFETY**



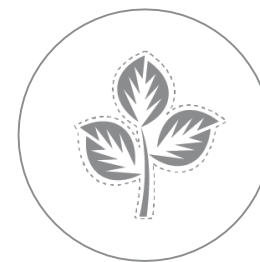
**CONVENIENT
TO USE**



**EXEMPT FROM
FOOD
TOLERANCE
REQUIREMENTS
IN THE US**



**MINIMAL
PPE**



**NO
PHYTOTOXICITY
OBSERVED***



**NO
SENSORY
CONCERN**

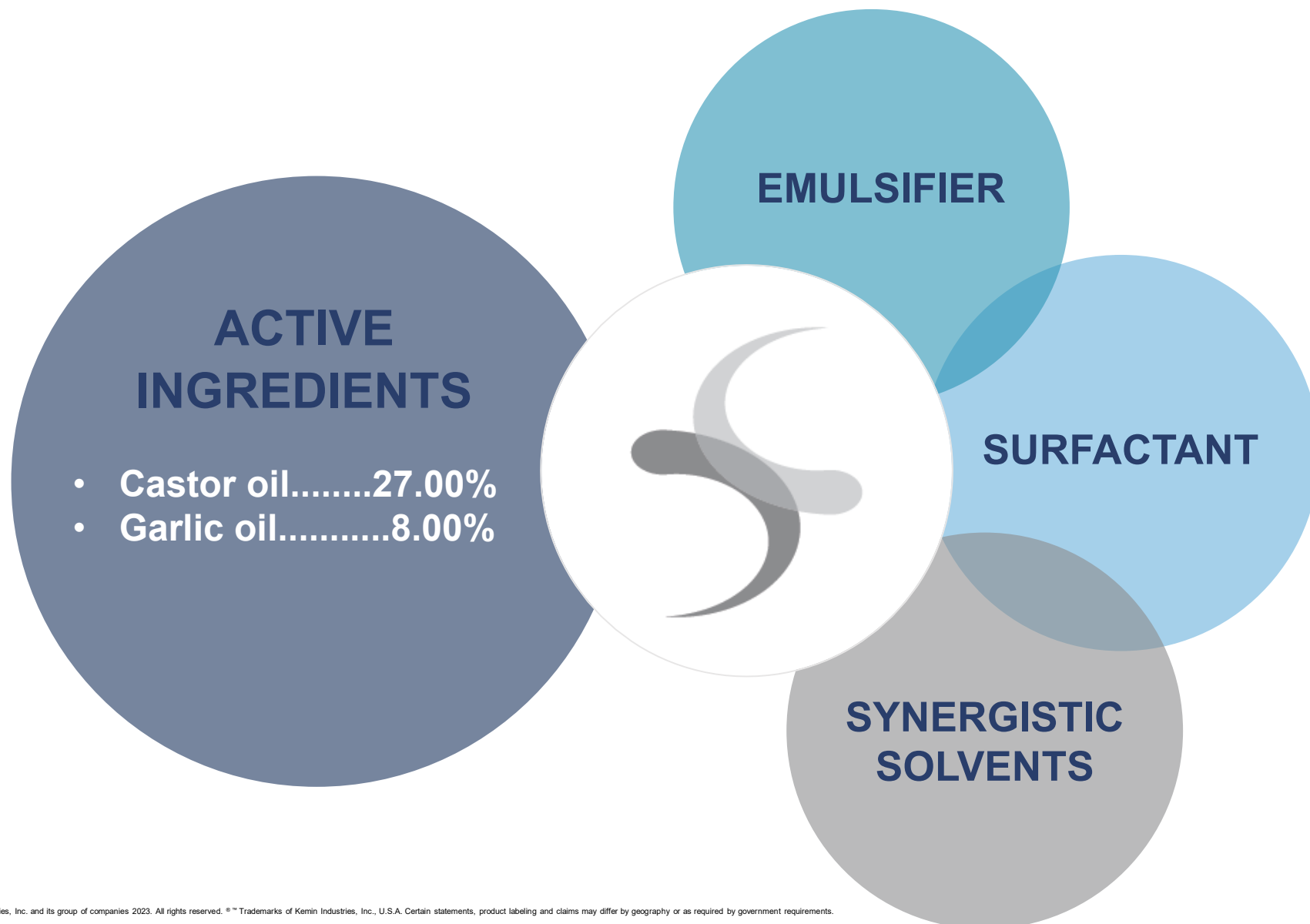


**EXCELLENT PEST
RESISTANCE
MANAGEMENT
TOOL**

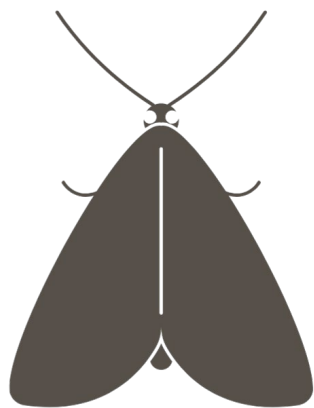
*when used following the label directions



Smart Blend Composition



Target Pests Controlled



Broad-spectrum - Lepidopteran pests and various other pest species, such as:

- Diamondback Moth
- Spotted Wing Drosophila
- Armyworms
- Looper
- Leafhopper
- Psyllids
- Scales
- Various small, soft-bodied insects

For best results, target Lepidopteran pests early in their life cycle (1st – 3rd instars).



Broad Use Sites – Indoor/Outdoor



BERRIES



CITRUS



LEAFY GREEN



VEGETABLE



VINEYARDS



NUTS



ORCHARDS



HOPS



HEMP



**GREENHOUSE &
NURSERY**



Garlic Oil and Customer Sensory

>> **Fact: It's going to smell strongly like garlic**

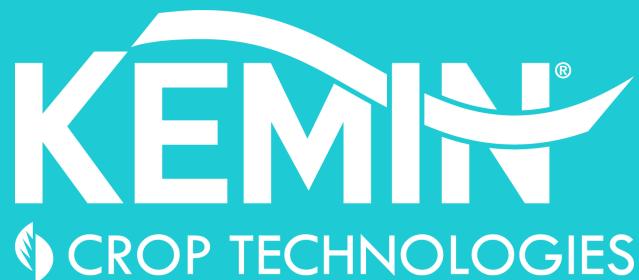
- But the smell will dissipate over time
- AliiCURB™ MAX will not influence the crop's taste or post-harvest products.





Modes Of Action

CROP PROTECTION



Unique Molecular Profile

The insecticidal property of garlic essential oil (*Allium sativum*) comes from its two naturally-occurring key substances:



ORGANOSULFUR COMPOUNDS

The main components of the garlic oil

VOLATILE COMPOUNDS

Such as ajoene, alliin, allicin, methyl allyl trisulfide, allyl sulfide, as well as terpenes including citral, geraniol, linalool, α – and β -phellandrene¹



Multiple Modes of Action

OLFACTORY EFFECTS



ANTIFEEDANT DETERRENT

AlliCURB MAX discourages the pest from feeding, preventing future leaf damage.



ADULT MATING DISRUPTER

AlliCURB MAX affects the pest's odor binding receptors that interfere with the way that adult male and female pests locate each other, decreasing the likelihood of successful reproduction.



ANTI- OVIPOSITION ACTIVITY

AlliCURB MAX disrupts the adult female pest from laying eggs on the leaf, preventing future infestation.

REPELLENT EFFECT



AlliCURB MAX interferes with the pests' sensing faculties, disguising the signal emitted by crops, hence keeping them away and limiting the chances of their establishment on crops.

CONTACT EFFECT



DESICCATION

AlliCURB MAX lipophilic plant oil and its insecticidal soap kills the insect pest by degrading the waxy cuticle causing dehydration.



SUFFOCATION

The blend of actives provides true pest suffocation by blocking air from entering the spiracles, leading to its death.



Recommended Application Rates

- **Rates for 100 gallons of water per acre**
- A minimum of 100 gallons of finished solution to treat one acre is recommended



PREVENTATIVE	MODERATE INFESTATION	HEAVY INFESTATION
< <i>Economic threshold</i>	<i>At Economic threshold</i>	> <i>Economic threshold</i>
16 fl. oz	48 fl. oz	56 - 64 fl. oz
0.125%	0.25%	0.375-0.5%

TREATMENT INTERVAL: 5 to 7 days.

For best results, use in an IPM program and repeat application with a minimum of 2-3 applications over a 2-week interval.



Current Pending Trials

Pest	Pest	Crop	Application Rates
<i>Helicoverpa zea</i>	Corn Earworm	Tomato	48 and 64 fl. oz. / 100 gal
<i>Spodoptera sp.</i>	Armyworm	Tomato	48 and 64 fl. oz. / 100 gal
<i>Plutella xylostella</i>	Diamondback Moth	Broccoli	48 and 64 fl. oz. / 100 gal
<i>Amyelois transitella</i>	Navel Orangeworm	Citrus	48 and 64 fl. oz. / 100 gal
<i>Drosophila suzukii</i>	Spotted Wing Drosophila	Blueberry	48 and 64 fl. oz. / 100 gal
<i>Drosophila suzukii</i>	Spotted Wing Drosophila	Cherry – Oviposition Repellency and Knockdown Bioassay	64 fl. oz. / 100 gal
<i>Spodoptera sp.</i>	Armyworm	Sweet Corn	48 and 64 fl. oz. / 100 gal



Possible Trial Requests

Foliar Spray

- Lepidopteran pests such as diamondback moth, cabbage looper, armyworm, etc.
 - Adults – Repellency and Antioviposition
 - Immature – Antifeedant and Knockdown
- Spotted Wing Drosophila
- Mites
- Leafhopper
- Psyllids
- Scale
- Mealybug

Soil Drench

- Fungus Gnat Larvae
- Shore Fly Larvae
- Root Aphids
- Various Beetle sp. Larvae



Thank you!



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