

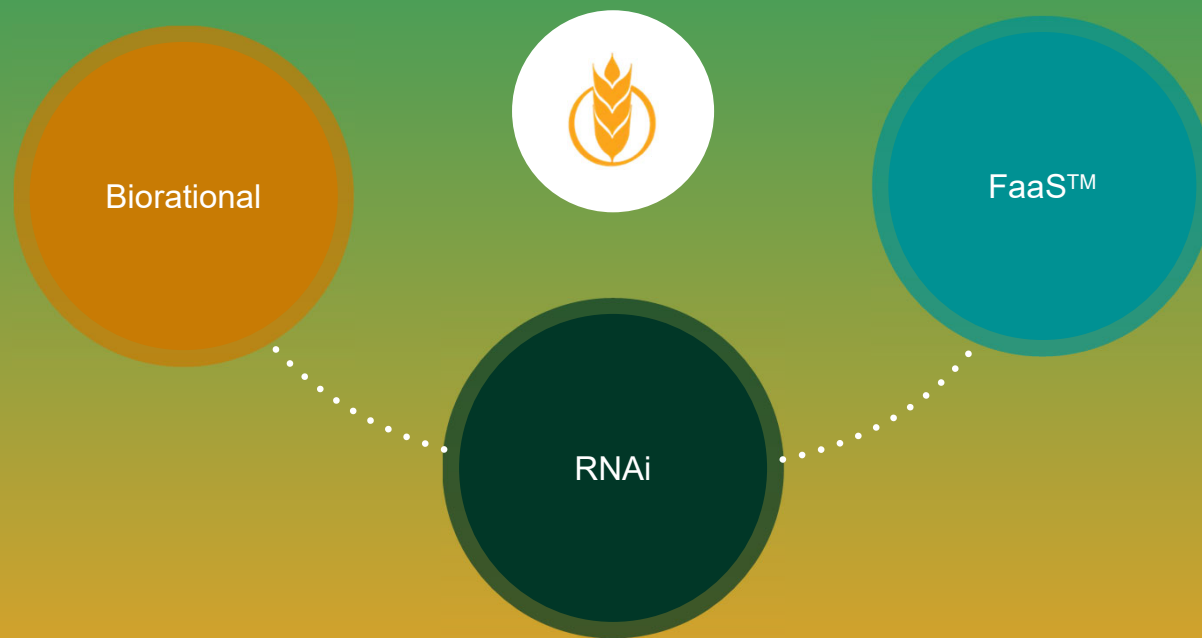


AgroSpheres

A FUTURE BUILT BY NATURE'S TECHNOLOGIES



THREE PILLARS OF AGROSPHERES



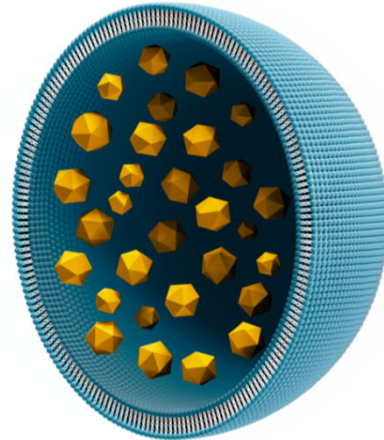


Powered by AgriCell

AgriCell Encapsulation

Key Features

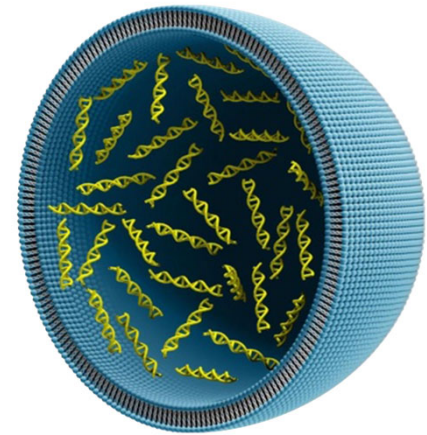
- 100% Biodegradable
- Encapsulation Stability
- Extended Release = Extended Field efficacy
- Consistent MOA & Performance



AgriCell Manufacturing

Key Features

- Fermentation 1-step production & encapsulation
- Enabling novel biological MOAs
- Consistent MOA & Unparalleled Performance



AgriCell Encapsulation technology will Power AGS 1st Generation commercial products



MANUFACTURING PROCESS

Assess for Quality
and Purity

Assess for Quality

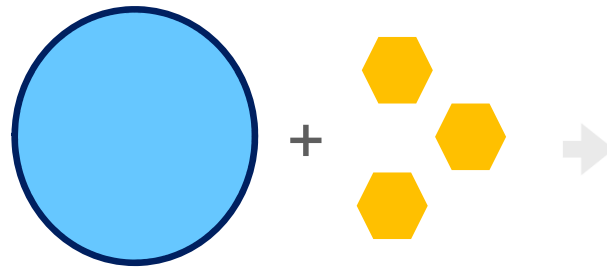


AGRICELL ENCAPSULATION

The AgriCell is a cost-effective, sustainable formulation component that promotes environmental stability and controlled release.

Foundation of Biorational Product Portfolio

- Biodegradable formulation component
- Microplastic-free encapsulation
- Tank-mix and commercial sprayer compatible
- Tunable release profile

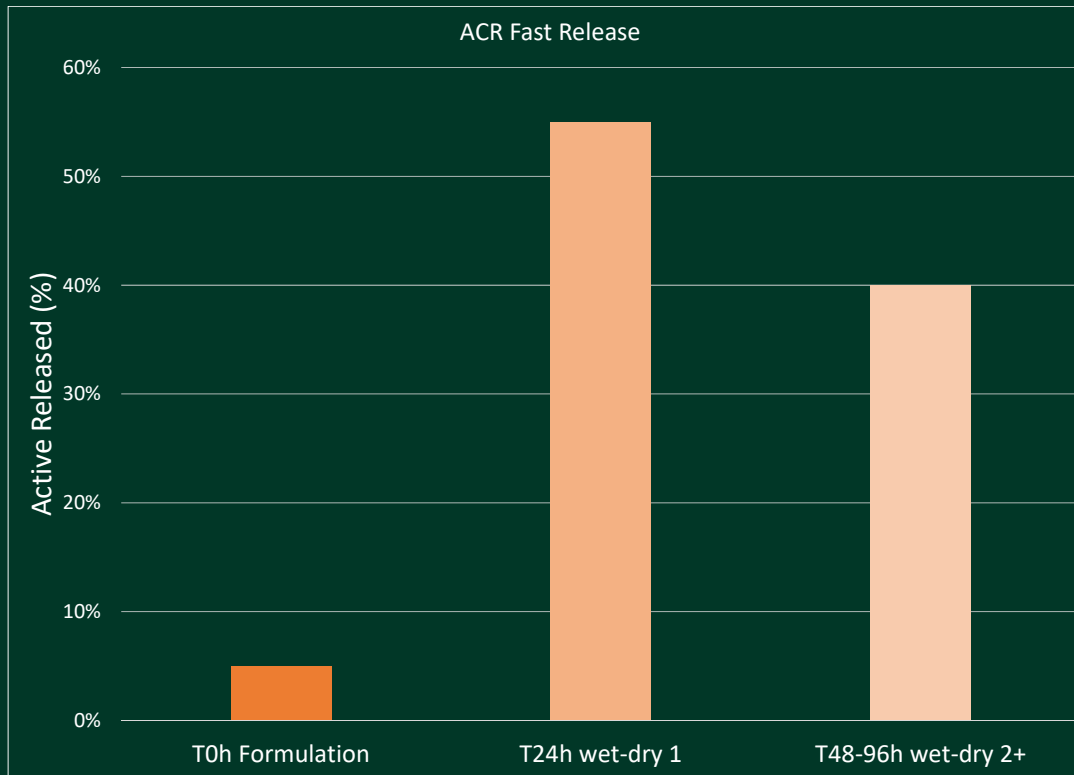


AgriCells are loaded with various active ingredients

Loaded AgriCells are formulated for field application



AgriCell-Thymol Fast Release



ACR Fast Release Formulation

- 95-100% Encapsulation
- Wet-dry cycle 1: 100x dilution, application & drying = ~ 60% release
- Wet-dry cycles 2+ = ~ 40% release

**ACR technology has versatile release properties engineered by simple composition changes resulting in tunable release*





GRAPE FIELD TRIAL AT VIRGINIA TECH UNIVERSITY.
BIWEEKLY SPRAYS FOR PRE & POST HARVEST CONTROL

- AgriCell - Biofungicide efficacy testing against *Botrytis cinerea* demonstrates high efficacy compared to Switch (Syngenta).
- Provides Organic Postharvest Control.
- Powdery & Downy Mildew can also be controlled.



Untreated Control



Switch



AgriCell-Biofungicide



AGRICELL — BIOFUNGICIDE



GRAPE FIELD TRIAL AT UNIVERSITY OF CALIFORNIA DAVIS COOPERATIVE EXTENSION. AGRICELL BIOFUNGICIDE IS AS A STAND-ALONE.

- 2021 Bunch rot field trial for Riesling grape starting May 12th and finishing August 16th
- AgroSpheres formulation as a stand-alone (FunThyme) shows great control compared to commercial conventionals (gray), conventionals + biologicals (blue), and biologicals (green).

Treatment	Mean Incidence %	Mean Severity %
Fun Thyme 128 floz + Dynamic 0.125 % v/v	16 bcde	1.46 abcdefgh
Luna Experience 8.6 oz + Syl-Coat 4 oz / Vanguard 10 oz + Syl-Coat 4 oz / Vanguard 10oz + Syl-Coat 4 oz	16 bcde	1.12 abcdefg
Mevalone (SA-0650001) 55 fl oz + Kinetic Adj 0.125 (%v/v) / Elevate 50WDG 16 oz + Kinetic Adj 0.125 (%v/v) / Mevalone (SA-0650001) 55 fl oz + Kinetic Adj 0.125 (%v/v)	16 bcde	1.82 abcdefgh
Parade 3.1 fl oz + Dyne-Amic 0.25% (v/v)	16 abcde	2.78 abcdefghi
Luna Experience 8.6 oz, PHD 6.2 oz, Elevate 1 lb.	16.8 bcde	1.56 abcdefgh
Howler 5fl oz + Syl-Coat 0.125% / Luna Experience 8.6 fl oz / Howler 5fl oz + Syl-Coat 0.125%	18.4 bcde	2.06 bcdefghi
Serenade ASO 4 qt (Biological Standard)	38.4 fg	5.14 ij
Untreated Control	44 g	7.34 j





ASIAN SOYBEAN RUST ASSESSMENT IN GREENHOUSE
 AGRICELL BIOFUNGICIDE IS AS A STAND-ALONE.

- 2 AGS Bio fungicides demonstrate strong performance as a standalone application against ASR
- Next Steps: Field + Mixture partner for dose reduction

Soybean Planted: 11/23/2021
 Treated and Inoculated: 12/7/2021
 Rated: 12/23/2021

	Plant (Disease rating - Cobb scale)						
Treatment	1	2	3	4	5	6	Avg
Water	20	25	20	25	20	25	22.5
Tween 0.1%	15	20	20	20	15	20	18.3
Proline 0.64 ug/ml	0	0	0	0	0	0	0.0
BK 01-1	5	10	3	5	5	5	5.5
BK 01-2	3	3	3	5	3	3	3.3



STRAWBERRY FIELD TRIAL AT UNIVERSITY OF FLORIDA.
 AGRICELL BIOFUNGICIDE IS THE BEST ROTATIONAL
 PARTNER.



- Strawberry Field Trial in Florida with 14 weekly applications
- Switch Rotated with AgroSpheres BFUN1 was the best performing treatment.
- BFUN1 can replace Switch and be rotated with Captan, showing great control in high pressure environments.
- One of the best biorational fungicides the University of Florida has ever seen.



Treatment (products and rates/A)	Application timing ¹	Yield (lb/A) ²	Pestalotia fruit rot	Botrytis fruit rot
Switch 62.5WG 14 oz	4, 7, 10, 12, 13	23576 abcd	8.2 efg	3.0 j
BFun1 1% + Induce 1 pt	1, 2, 3, 5, 6, 8, 9, 11, 14			
Switch 62.5WG 14 oz	4, 7, 10, 12, 13	21714 bcde	8.6 efg	3.5 j
SA 0650004 28 fl oz + Induce 1 pt	1, 2, 3, 5, 6, 8, 9, 11, 14			
Switch 62.5WG 14 oz	4, 7, 10, 12, 13	22438 abcde	13.4 bcde	3.7 j
BFun2 2% + Induce 1 pt	1, 2, 3, 5, 6, 8, 9, 11, 14			
Switch 62.5WG 14 oz	4, 7, 10, 12, 13	25698 ab	8.1 efg	4.2 ij
Exp 14 7.14 oz	1, 2, 3, 5, 6, 8, 9, 11, 14			
Switch 62.5WG 14 oz	4, 7, 10, 12, 13	26439 a	5.1 g	4.2 hij
Captan Gold 80WDG 1.9 lb	1, 2, 3, 5, 6, 8, 9, 11, 14			
Switch 62.5WG 14 oz	4, 7, 10, 12, 13	25517 ab	10.6 cde	4.2 hij
Exp 14 10.72 oz	1, 2, 3, 5, 6, 8, 9, 11, 14			
Switch 62.5WG 14 oz	4, 7, 10, 12, 13	23729 abcd	5.9 fg	4.4 hij
BW165E WP 3 lb + Kinetic 0.1%	1, 2, 3, 5, 6, 8, 9, 11, 14			
Exp 14 7.14 oz	4, 7, 10, 12, 13	21464 bcde	12.5 bcde	6.4 ghi
Captan Gold 80WDG 1.9 lb	1, 2, 3, 5, 6, 8, 9, 11, 14			
Exp 14 10.72 oz	4, 7, 10, 12, 13	23802 abc	10.6 cdef	6.7 fgh
Captan Gold 80WDG 1.9 lb	1, 2, 3, 5, 6, 8, 9, 11, 14			
BW165E WP 3 lb + Kinetic 0.1%	weekly	16681 fghi	17.9 abc	6.8 fghi
BFun1 1% + Induce 1 pt	4, 7, 10, 12, 13	23268 abcde	9.1 efg	8.0 efg
Captan Gold 80WDG 1.9 lb	1, 2, 3, 5, 6, 8, 9, 11, 14			
BW900N 3 lb + Kinetic 0.1%	weekly	19223 defghi	19.3 ab	8.8 defg
Oso 5% SC 6.5 oz + Nu-Film P 4 fl oz	weekly	15990 ghi	24.1 a	9.7 defg
OR278 8 pt + OR159 1% 8 pt	weekly	18888 efghi	19.4 ab	10.1 cdef
Exp 14 10.72 oz	weekly	16904 fghi	16.6 abcd	10.9 cde
SA 0650004 42 fl oz + Induce 1 pt	weekly	14778 i	21.2 ab	10.9 bcde
BFun2 2% + Induce 1 pt	4, 7, 10, 12, 13	20496 cdefg	10.2 def	11.1 bcde
Captan Gold 80WDG 1.9 lb	1, 2, 3, 5, 6, 8, 9, 11, 14			
Serenade Opti 1 lb	weekly	19955 cdefgh	19.5 ab	11.4 bcde
ProBlad Verde 32 fl oz	4, 7, 10, 12, 13	18910 efghi	23.6 a	11.6 bcde
Serenade Opti 1 lb other weeks	1, 2, 3, 5, 6, 8, 9, 11, 14			12.1 abcde
PREV-AM 3.2 pt	weekly	15822 hi	19.4 ab	13.2 abcd
Exp 14 7.14 oz	weekly	20839 cdef	13.2 bcde	14.3 abc
SA 0650004 28 fl oz + Induce 1 pt	weekly	15307 i	18.2 ab	15.8 ab
Non-treated control	-	15973 ghi	19.8 ab	17.2 a
ProBlad Verde 45.7 fl oz	4, 7, 10, 12, 13	16912 fghi	22.0 a	
Serenade Opti 1 lb	1, 2, 3, 5, 6, 8, 9, 11, 14			
Probability of a greater F value		<0.0001	<0.0001	<0.0001

¹Week of application over 14 weeks from 24 Nov 2020 to 23 Feb 2021.

²Yield based on harvest data from 1 Dec 2020 to 26 Mar 2021 (21 harvests total).

³Average of Pestalotia and Botrytis fruit rots incidence from 1 Dec 2020 to 26 Feb 2021 (whole season).

* Values in a column followed by the same letter are not significantly different by Fisher's Protected LSD test ($\alpha = 0.05$).





EVALUATION OF BIOFUNGICIDE FOR POSTHARVEST CONTROL OF BLACK ROT IN SWEETPOTATO AT NORTH CAROLINA STATE UNIVERSITY (LINA QUESADA)

- Commercial packing line application
- AgroSpheres formulation as a stand-alone (AGR-Biofun1 and AGR-Biofun2) shows great control compared to commercial conventionals (Mertec)
- Next steps: further testing coordinated by IR-4

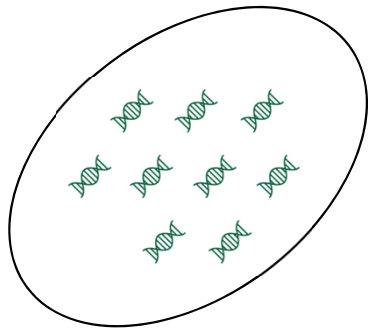
Treatment Name and Rate	Disease Incidence ^z				Disease Severity ^y			
	21 May	14 May	7 May	30 Apr	21 May	14 May	7 May	30 Apr
Nontreated	7.28 a ^x	6.36 a	6.50 a	1.30 a	7.68 a	3.32 a	3.64 a	0.78 a
AGR-Biofun1 - 3% V/V	5.78 b	5.18 b	4.40 b	0.76 b	6.42 ab	1.78 a	2.52 b	0.58 ab
AGR-Biofun2 – 6% V/V	5.46 b	4.80 b	3.04 c	0.78 b	6.68 a	2.06 a	2.00 bc	0.46 b
Mertect 340F – 0.42 fl/ton	3.12 c	2.80 c	2.06 c	0.70 b	4.38 b	1.26 a	1.30 c	0.54 b

^z Disease incidence was calculated by the number of lesions on each sweetpotato.
^y Disease severity was calculated by the percentage of each sweetpotato covered by black rot lesions
^x Treatments followed by the same letter(s) within a column are not statistically different (P=0.05, Fisher's Protected LSD).

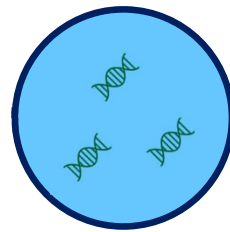


AGRICELL MANUFACTURING

One bioreactor run produces AgriCells and the encapsulated, biological active
Lowers costs for biologicals



Parent cells produce
Biologicals



AgriCells split off from
parent cells already
loaded with Biological



RNAi - BOTRYTIS CINEREA

Virginia Tech Strawberry Greenhouse Trial

100% inhibition over 14 days

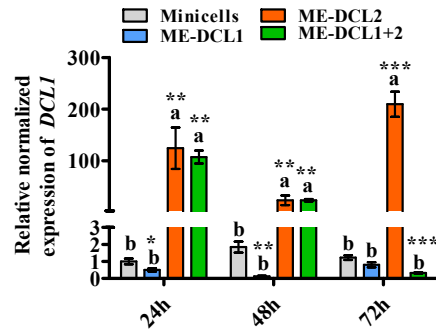
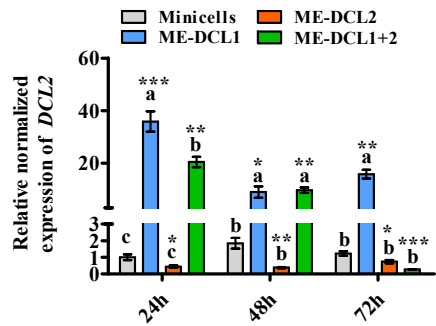


Formulated dsRNA



AgriCells + dsRNA

Novel Mode of Action!



Virginia Tech Grape Field Trial

100% inhibition standalone pre & post harvest 14-28 days



Formulated dsRNA



AgriCell

6 novel MOAs validated in Dev for fungicides
6 novel MOAs validated in Dev for insecticides

STEP CHANGE IN FUNGICIDE DEVELOPMENT



DIAMONDBACK MOTH – UNIVERSITY OF KENTUCKY FIELD TRIAL 2



Findings

- AgriCell-RNA standalone performance is commercially acceptable: <5% defoliation, good population control
- AgriCell-RNA in IPM rotations can reduce Coragen & BT applied by 75% & maintain 0% defoliation
- AgriCell-RNA demonstrated consistent performance in Texas (Hot/Humid) & Kentucky (Rainy) seasonal trials



Untreated Check



*RNA
Defoliation due to other pests



Coragen



Xentari

Week 4 - Week 5 End of trial	3 DAT #4	6 DAT #4	13 DAT #4
	Mean	Mean	Mean
TRT No.	% Defol.	% Defol.	% Defol.
	9/13/21	9/16/21	9/23/21
Untreated Check	7.6 a	8.6 a	10.5 a
Coragen (High rate)	0.05 c	0.05 d	0.0 d
Xentari (High rate)	0.1 c	0.7 cd	0.4 d
AgriCell RNAi HP	3.75 b	3.1 bc	4.45 c
Coragen (1/2 rate) Week 1 - RNAi HP Week 2 (Rotation)	0.0 c	0.05 d	0.2 d
RNAi HP + Xentari (1/2 rate)	0.65 c	0.85 cd	0.5 d
Xentari (1/2 rate) Week 1 - RNAi HP Week 2 (Rotation)	0.7 c	0.9 cb	1.35 d



THANK YOU



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