TopFilm™ New Technology – Natural Sticker





Adjuvants are tank additives used to maximize the performance of herbicidal/pesticidal spray applications.

The most common are the spray surfactants, which are soaps. Although, they spread the application over the leaf surface (reduce surface tension), they readily wash-off and evaporate the applied treatment.

TopFilm™

- Not a "Traditional Surfactant"
- Microsponges[™] Technology





Surfactant Results:

- **1- Increase surface area**
- 2- Increase evaporation surface
- 3- Increase wash-off (water soluble soaps)

Microsponges

(Solid matrix, <100 microns particles)



Biocar® Microsponges US Patent #5,888,500





Biocar® microsponges are made from residual grain materials once:

- Proteins
- Oils
- Starches

are removed during food processing

TopFilm™ is a natural-based suspension (not a surfactant), that contains Microsponge[™] technology called **Biocar**[®] made from cereal grain materials.

TopFilm™:

- Has a Statement for <u>Organic Use & for Sustainable Agriculture</u>
- Registered in Europe with the PSD #A0670
- Recommended on Monsanto Round-up Pro Biactive Label

More beneficial to environment:

- Reducing wash-off
- Reducing chemical load on environment

Herbicide: Glyphosate with TopFilm™

Arundo donax (Giant Cane) Control



Results with TopFilm[™] on Floating Weeds: Keeps Herbicide from Washing-off



Glyphosate & Imazamox with TopFilm™







TopFilm™ is Out-Performing Current Adjuvants

In comparative Carfentrazone herbicide (PPO) studies, TopFilm[™] adjuvant maximized herbicidal control of water spinach and prevent re-growth out-performing current standard adjuvants.



buffer mixtures

organosilicone mixtures

Airboat Application: Herbicide Triclopyr with TopFilm[™] - 1 YAT (Year After Treatment)





TopFilm[™] Microsponge[™] Technology Adheres Herbicide to Hydrilla

Rainfastness (Sticking Underwater) <u>RESULTS</u> of Hydrilla Treatment – TopFilm™ with Aquathol



BEFORE (Date of Application: 5 Dec 2006)

21 Days After Treatment (Date of Evaluation 26 Dec 2006; No Regrowth Reported on 18 Jan 2007 = 6 Weeks After Treatment)

Data from Pinellas County – 2007

FAPMS 2007

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Results on Algae Control

Adding **TopFilm**[™] to Algaecide makes the Treatment Stick

3 Hours after Treatment





10 Days after Treatment

Toxic Algae, *Lyngbya*, Control – TopFilm™ makes Algaecide Stick



TopFilm[™] Sticker is Used in Aquaculture – Fish Farms to Control Watermeal, Duckweed and Algae



6 Hours After Treatment



2 Days After Treatment

Treatment does not kill fish



4 Days After Treatment



7 Days After Treatment

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Corn Studies – Herbicide with TopFilm[™] Sticker



10 – 12 Inch Mare's Tail (Conyza Canadensis) with 1 pint/Acre glyphosate and 1 pint/Acre TopFilm™



3 Days After Treatment



6 Days After Treatment

14 Inch Sunflower (Helianthus spp.) with 1 pint/Acre glyphosate and 1 pint/Acre TopFilm™



3 Days After Treatment



6 Days After Treatment



9 Days After Treatment

Corn Studies (Continued)



9 Days After Treatment

24 Inch Wild Carrot (Daucus carota) with 1 pint/Acre glyphosate and 1 pint/Acre TopFilm™



12 Days After Treatment



12 Days After Treatment (another example)

2 to 6 Inch Grass with ½ pint/Acre glyphosate and 1 pint/Acre TopFilm™



6 Days After Treatment



Sprayer-miss (center) at 6 Days After Treatment

RESULT: Corn Bushel Yield Increase = 158%

TopFilm[™] with Glyphosate

- Mares tail
- Thistle (Canadian & Soft)
- Water hemp
- Kochia

(Reports from Midwest Farmers)



Sticks on Hard to Control Weeds

TopFilm[™] with Glyphosate in Corn



Texas Weed: Snake Cotton (Froelichia interrupta) – Hard to Control Weed



Weed Control in Range/Pasture Land:

Glyphosate Herbicide with TopFilm™

Results at 7 Days After Treatment (7 DAT); and 14 Days After Treatment (14 DAT)



TopFilm[™] with Herbicide in Range & Pasture Land

Weatherability in Dry Conditions

(Reduce Evaporation In Arid Conditions)



Data from Texas A&M and from Dupont - 2006

10 Months After Treatment

TopFilm[™] with Herbicides

TopFilm[™] with Imazapyr (Habitat) in the Rio Grande Weatherability in Dry Conditions

(Reduce Evaporation In Arid Conditions)



Arundo donax – Before Applying TopFilm[™] with Herbicide Arundo donax – After (2-4 Weeks After Treatment) Data - 2006

TopFilm™ with Herbicideon Kudzu (10 Months Control) (Kudzu = over-wintering host for soybean rust)





Treatment Date Sept 11, 2004 (Transline with TopFilm[™])

Evaluation July 4, 2005 (10 MAT) *TopFilm™ makes treatments "stick."*

Example with Fungicide

Non-ionic surfactant With Fungicide Treatment



TopFilm™

With Fungicide Treatment



Result: Disease 10 Days Later Reason: Washes-off Result: <u>No Disease</u> 10 Days Later Reason: TopFilm[™] minimizes wash-off

Instead of spraying every 10 days, the applicator can now spray every 20 to 30 days, saving him at least 1/3 of re-application costs (labor, chemical, fuel).

Example with Fungicide – Banana Sigatoka







TopFilm™ makes Fungicide Stick

With TopFilm[™], Natural-Based Coater 6 Weeks after Treatment (6 WAT)

With Non Ionic Surfactant – 6 WAT

Differences: TopFilm[™] vs Surfactants

TopFilm™	Surfactant
Lower adjuvant use rate = $\frac{1}{4}$ to 1 Pint/Acre	Higher use rate $= \frac{1}{2}$ to 4 Gallons/Acre
"Rainfastness" provided by Biocar® Microsponge™ adjuvant	Soaps wash-off readily ; run-off
"Weatherability" Biocar® endures high heat & UV degradation	Surfactants (soaps) & oils evaporate faster

TopFilm[™] and Biosorb's Natural Products







Biosorb Inc.'s Offices







For Clean Waterways



www.Biosorb-Inc.com
Natural Products for Conservation

www.Biosorb-Inc.co

Benefits of Using TopFilm[™]

- Maximizes the performance of the spray treatment
- Reduces the cost per acre of the application
- Reduces spray frequency
- Reduces the chemical load on environment
- Better Results