Stick N Stay Overview

Proven Science. Precise Performance.
Smarter Agriculture.

March 2023

Presented by:
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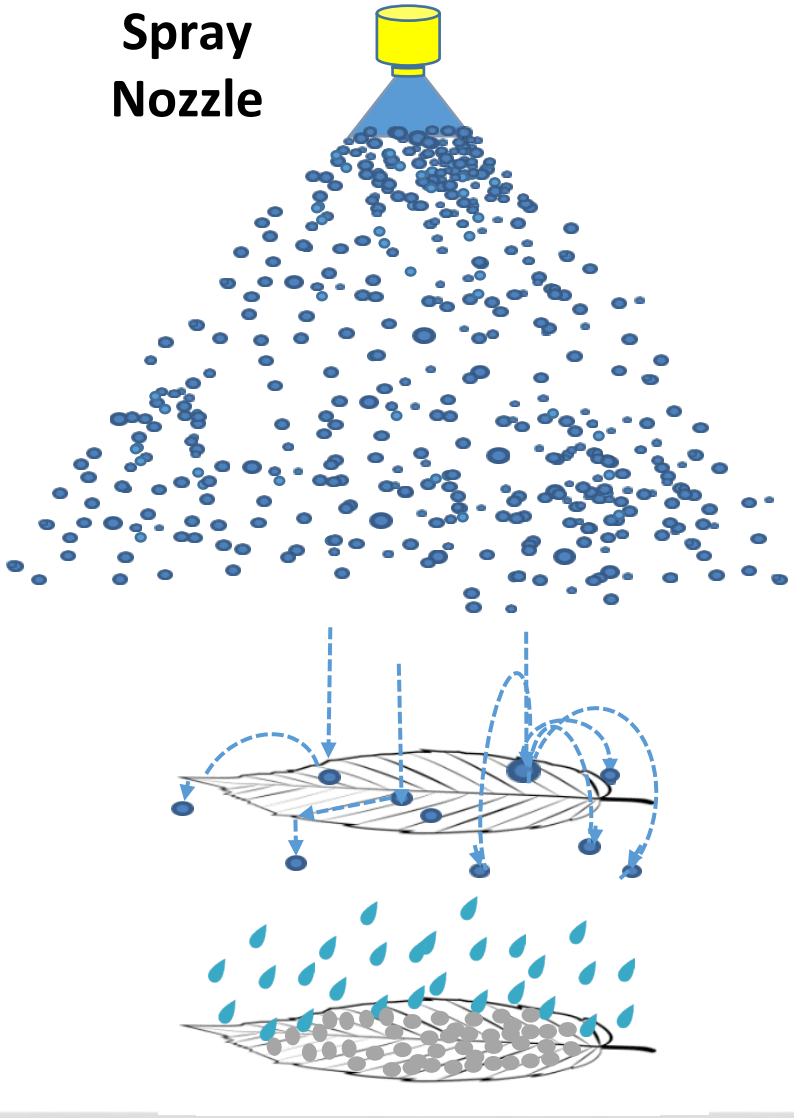
The Key to Our Success

- Technology is based on hydrocolloids
  - Also referred to as “gums”
- Multifunctional characteristics
  - Rheology modifiers
  - Adhesion
  - Humectancy
  - Film formation
- Unique combinations of gums provide ideal functionality
- **Nothing like this on the market today**

How Do You Improve Effectiveness?



Challenge	Solution
Small drops (<105 microns) exiting the nozzle are prone to drift, may never reach the plant.	Increase drop diameters and reduce small drops by increasing spray viscosity.
Drops can evaporate as they travel to the plant, reducing spray coverage.	Use humectants to reduce the rate of droplet evaporation.
Drops can bounce or run off the leaf reducing spray coverage.	Adhere drops to the leaf, create a matrix within the drop to reduce shatter.
Spray can be washed off by rainfall or overhead irrigation.	Hydrocolloids form a film to protect crop inputs

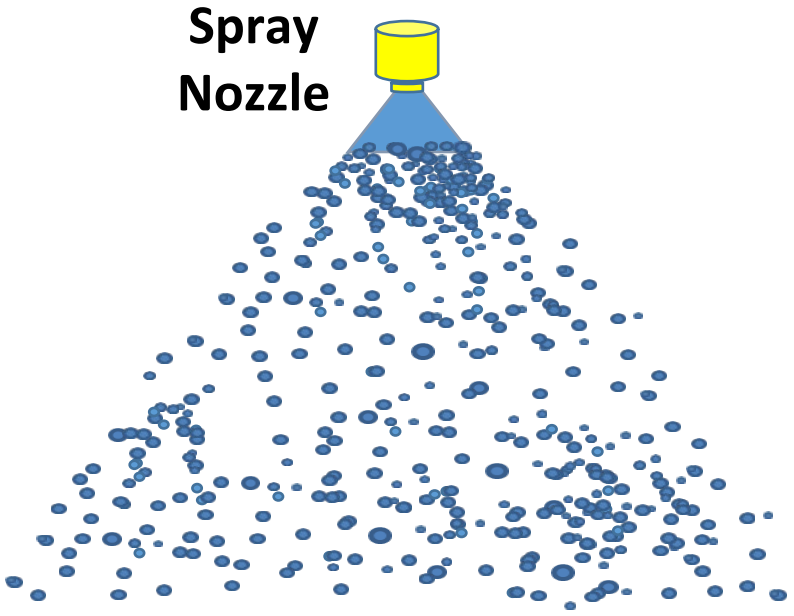
attune Technology Delivers:

- ✓ **Reduced drift potential**
- ✓ **Increased spray volume to the plant**
- ✓ **More spray stays on the plant**
- ✓ **Protection from wash off**

All in a Single Product…

- Drift control comparable or better than leading DRAs (drift reduction agents)
- Superior deposition and coverage
- Specially formulated for compatibility with a wide range of herbicides, insecticides, fungicides, and foliar fertilizers
- Use rate: 125mls to 500mls per 100 liters of spray

How Do You Improve Effectiveness?



Challenge

Small drops (<105 microns) exiting the nozzle are prone to drift, may never reach the plant.

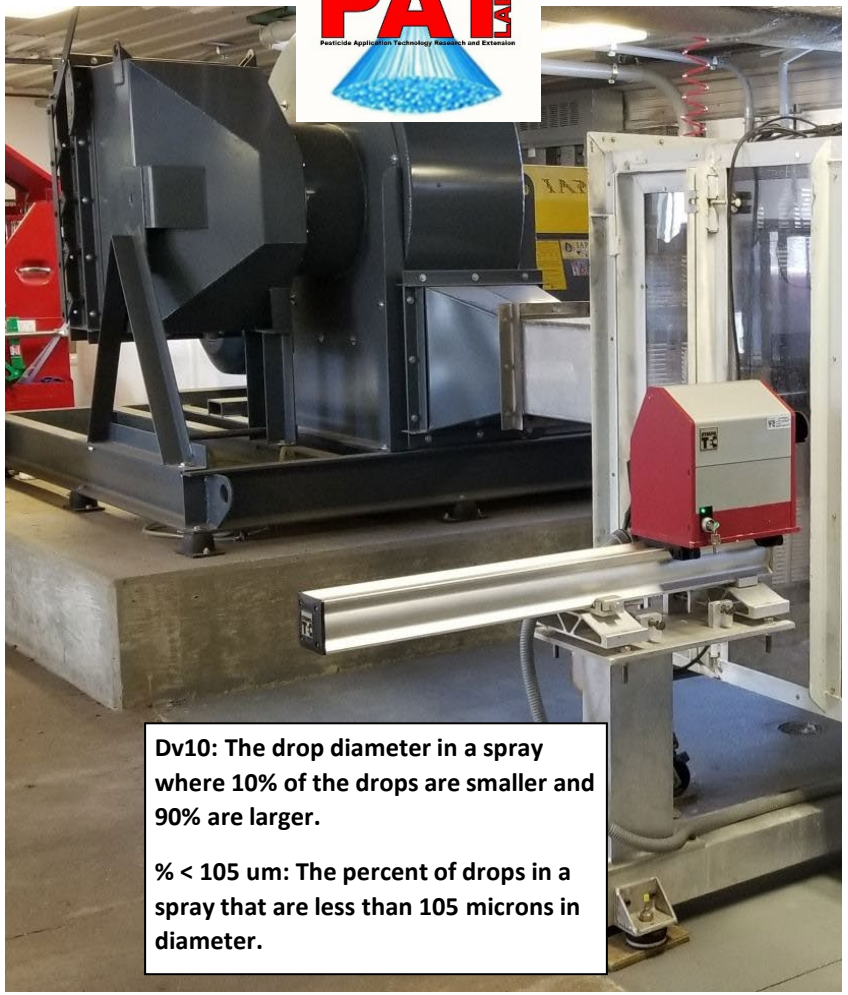
Solution

Increase drop diameters and reduce small drops.

Reduce Drift

Reduce Drift

Compared to Other Deposition Aids



Dv10: The drop diameter in a spray where 10% of the drops are smaller and 90% are larger.

% < 105 um: The percent of drops in a spray that are less than 105 microns in diameter.

Parameter/Target	AGRI-DEX	Dyne-Amic	BREAK-THRU S 301	InterLock	Stick N Stay
High Speed (125 mph)/Flat Fan COI 8004					
30 psi					
Dv10 > 185 um	X	✓	X	X	✓
<2.5% <105 um	✓	✓	X	X	✓
40 psi					
Dv10 > 185 um	X	✓	X	X	✓
<2.5% <105 um	✓	✓	X	X	✓
High Speed (125 mph)/CPO 3 Nozzle					
30 psi					
Dv10 > 150 um	X	X	X	X	✓
<4% <105 um	X	X	X	X	✓
40 psi					
Dv10 > 150 um	X	X	X	X	✓
<4% <105 um	X	X	X	X	✓

Stick N Stay Performs Over a Range of Nozzles and Spray Pressures

* ✓ = meets or exceeds target value in left column, X = fails to meet or exceed target

Best in Class Drift Reduction

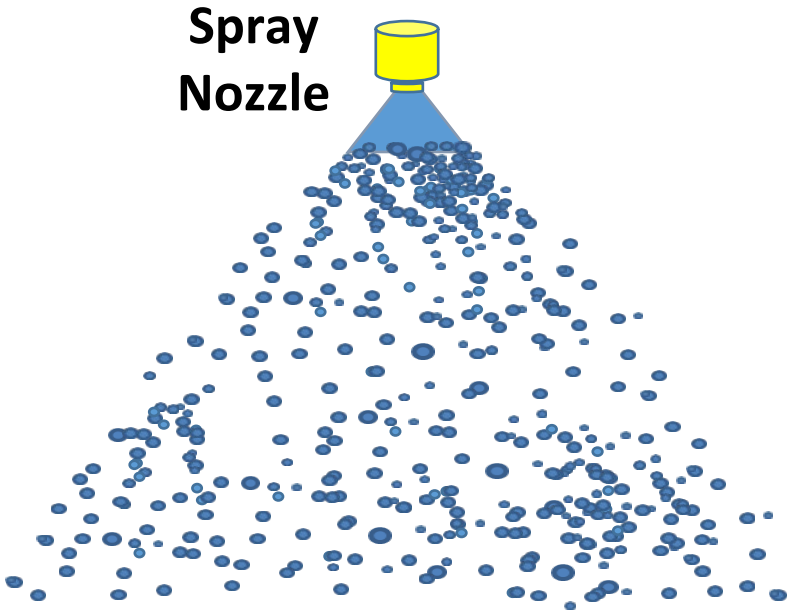
Compared to Other DRAs*

Parameter/Target	CROSSHAIR®	IN-PLACE®	Liberate®	InterLock®	Stick N Stay
Low Speed Wind Tunnel (16 mph)/AIXR 11004					
Engenia® Herbicide					
Dv10 > 270 µm	✓	✓	✓	✓	✓
<1% <105 µm	✓	✓	✓	✓	✓
Enlist One® with COLEX-D® Technology					
Dv10 > 280 µm	X	✓	X	X	✓
<1% <105 µm	✓	✓	✓	✓	✓
High Speed Wind Tunnel (125 mph)/CP11TT 8008					
Engenia® Herbicide					
Dv10 > 110 µm	X	✓	✓	X	✓
<9% <105 µm	X	✓	✓	X	✓
Enlist One® with COLEX-D® Technology					
Dv10 > 110 µm	X	✓	X	X	✓
<9% <105 µm	X	✓	✓	X	✓

Stick N Stay Performs Over a Range of Wind Speeds and Herbicides

* ✓= meets or exceeds target value in left column, X= fails to meet or exceed target

How Do You Improve Effectiveness?



Challenge

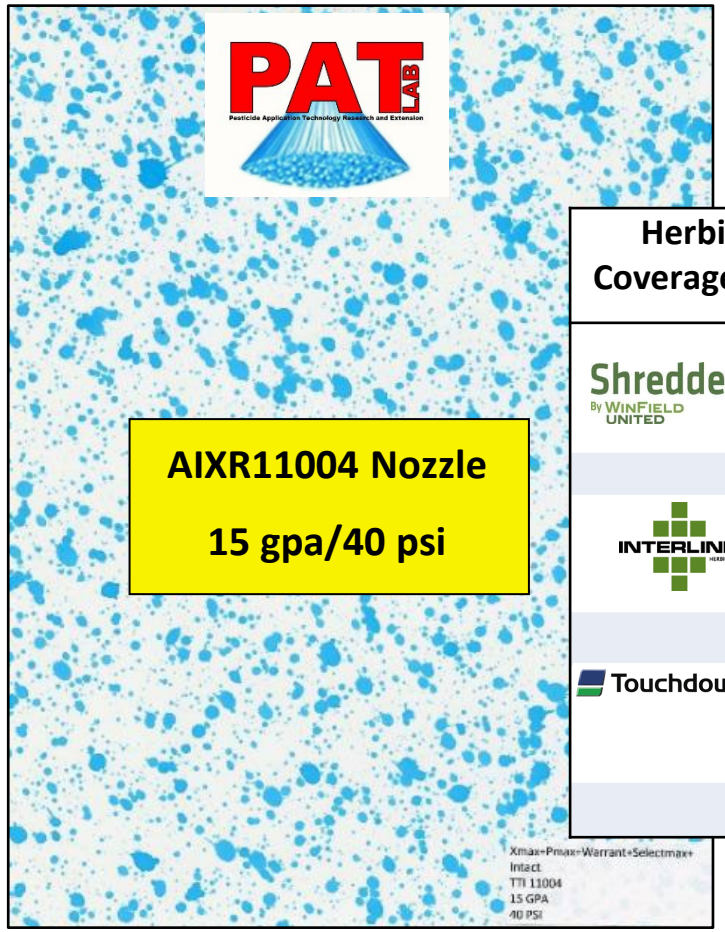
Drops can evaporate as they travel to the plant, reducing spray coverage.

Solution

Reduce the rate of evaporation.

Increase Coverage

Increase Spray Coverage



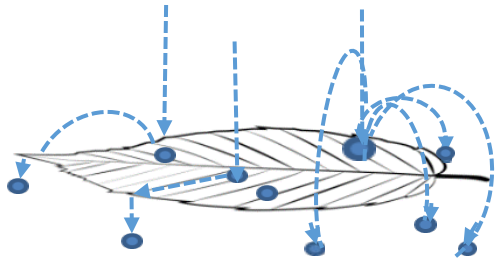
Compared to Other DRAs and Deposition Aids

Herbicide Coverage Target	InterLock By WinField United	Liberate	Dyne-Amic	COMPADRE	ADJUVANTS NPE Free DRT CROSSHAIR	ADJUVANTS NPE Free DRT IN-PLACE	Intact	Stick N Stay
Shredder By WinField United >50%	✓	✓	✓	✓	✓	✓	X	✓
INTERLINE >55%	X	✓	✓	X	X	X	X	✓
TouchdownHiTech >57%	✓	X	X	✓	✓	X	X	✓

Stick N Stay Outperformed 7 leading DRAs/Deposition Aids 67.8% of the time

* ✓= meets or exceeds target value in left column, X= fails to meet or exceed target

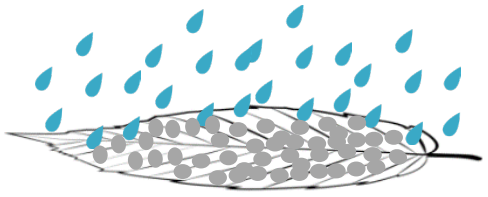
How Do You Improve Effectiveness?



Challenge	Solution
Drops can bounce or run off the leaf, large drops can shatter, reducing spray volume.	Adhere drops to the leaf, create a matrix within the drop to reduce shatter.

More Spray Stays <u>on</u> the Plant

How Do You Increase Effectiveness?



Challenge

Spray can be washed off by rainfall or overhead irrigation.

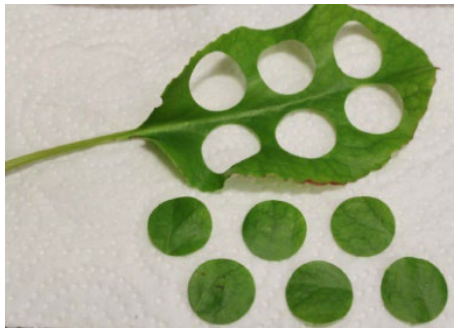
Solution

Hydrocolloids form a film to protect crop inputs.

Protection from wash off

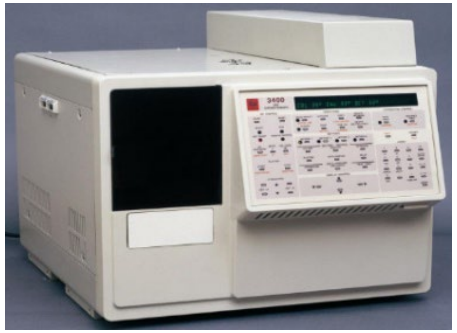
Protection From Wash Off*

Plants sprayed with herbicide, ½ the plants were exposed to 6.5 mms of rainfall



Leaf discs were cut from treated leaves

Leaf discs analyzed for chemical residues using GC**



Study Scope

10 Trials
3 Plant Species
224 Treatments
596 Replications
1788 Leaf Discs Analyzed

Treatment	Average % Wash Off Resistance*
Pesticide	23.1%
+ Sticker	92.5%
+ Stick N Stay	98.8%

*% Wash Off Resistance calculated as residues from leaves exposed to simulated rainfall expressed as a percent of residues from leaves receiving no rainfall.

*Research conducted by EcoSafe, Saanichton, BC, Canada

**Leaf discs were macerated and residues extracted using solvents

Increase Effectives by Delivering:

- ✓ **Reduced drift potential**
- ✓ **Increased spray volume <u>to</u> the plant**
- ✓ **More spray stays <u>on</u> the plant**
- ✓ **Protection from wash off**

Stick N Stay – Well Suited for the Prairies

- Complementary with the two most important herbicides used in the prairies, Glyphosate and Glufosinate
- Performance of these herbicides can be adversely impacted by two factors:
  - low humidity
  - low spray volumes
- Stick N Stay is designed to get more spray to the plant under arid conditions, optimizing low spray volumes.

Environmental Conditions Impact Performance

Glyphosate

"Weed control and the speed of control with glyphosate generally increase as air temperatures increase"

"Weed control with glyphosate is often lower early in the morning or in the evening as compared to midday applications"

"Herbicide absorption and weed control generally are greater with higher humidity levels"

Kansas State University

Glufosinate

"Visual injury to both species was significantly delayed as temperature decreased"

"Midday application of glufosinate under intense light conditions following application provide full control of A. palmeri plants."

"Greater control of Amarantha species at the high humidity level."

Colorado State University

Kansas State University

University of Guelph

Both herbicides perform better when applied midday, with high temperatures and high relative humidity.

Stick N Stay Performs Under Extreme Conditions

RD4AG Developing Tomorrow's Agriculture

Yuma, AZ
September 2019

Liberty® Herbicide

At Application: 99 F and 21% RH

RD4AG Developing Tomorrow's Agriculture

Yuma, AZ
January 2016

Roundup POWERMAX® HERBICIDE

At Application: 70 F and 17% RH

Use Directions

Use Directions: Use rates are 125mls to 500mls of Stick N Stay per 100 liters of spray volume (0.125% to 0.5% v/v).

Storage: Store containers above 10 C, as lower temperatures will result in a thicker solution that may require longer mixing time. Do not allow to freeze.

Mixing: Stick N Stay should be the first ingredient added to the water in the mix tank. If necessary, chelating agents such as AMS can be added first to the water followed next by Stick N Stay.

Marketing Documents

UTILITY MODIFIER

Stick N Stay®

3X more spray to the leaf
2X more evaporation control
4X wash off resistance

DRIFT CONTROL // DEPOSITION AID // EVAPORATION PROTECTION // WASH OFF RESISTANCE

Stick N Stay® utility modifier is an all-in-one tank mix partner specifically formulated to maximize the ability of water to deliver crop protection products to the target.

Stick N Stay uses natural gums to create a matrix within the spray to expand the application and environmental conditions under which the crop protection products can be used. Stick N Stay delivers more spray volume to the crop, keeps more spray on the crop, and reduces evaporative loss during and after crop protection products are sprayed. Add Stick N Stay first to the tank to treat the water, prior to adding other tank mix partners.

Our science-based approach is simple: improve product coverage and keep it there longer.

HOW IT WORKS

- Meticulous droplet control starting at the nozzle minimizes both large droplets and fines, resulting in 3X more spray volume to the target.
- Spray coverage is increased, and the spray pattern is uniform.
- Adhesive properties keep spray droplets on the target, preventing run off.
- Humectants keep spray droplets in a liquid state 2X longer than competitors, reducing product evaporation.
- Spray droplets are protected 4X longer from rain and overhead irrigation.

BENEFITS

- Low use rates — 0.125 - 0.5% (125 - 500ml/100L)
- Formulated with food-grade ingredients using hydrocolloid technology. No cautionary warnings on the label for applicators or the environment.
- Low to no phytotoxicity potential with most actives.
- Compatible with a myriad of chemistries across the spectrum of herbicides, insecticides, fungicides and nutrients.

Catapult your spray program to *levels never seen before.*

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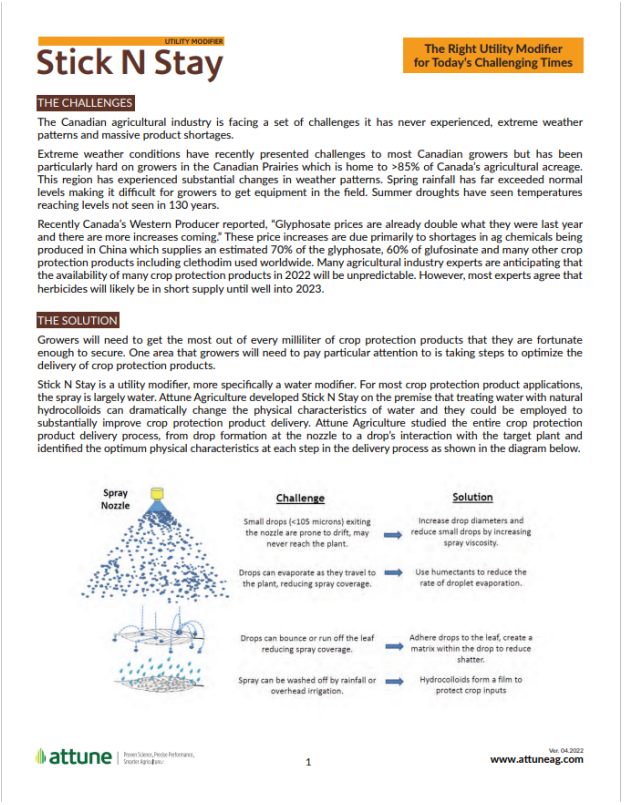
SNS Fact Sheet



UTILITY MODIFIER

Stick N Stay

The Right Utility Modifier for Today's Challenging Times

THE CHALLENGES

The Canadian agricultural industry is facing a set of challenges it has never experienced, extreme weather patterns and massive product shortages.

Extreme weather conditions have recently presented challenges to most Canadian growers but has been particularly hard on growers in the Canadian Prairies which is home to >85% of Canada's agricultural acreage. This region has experienced substantial changes in weather patterns. Spring rainfall has far exceeded normal levels making it difficult for growers to get equipment in the field. Summer droughts have seen temperatures reaching levels not seen in 130 years.

Recently Canada's Western Producer reported, "Glyphosate prices are already double what they were last year and there are more increases coming." These price increases are due primarily to shortages in ag chemicals being produced in China which supplies an estimated 70% of the glyphosate, 60% of glufosinate and many other crop protection products including clethodim used worldwide. Many agricultural industry experts are anticipating that the availability of many crop protection products in 2022 will be unpredictable. However, most experts agree that herbicides will likely be in short supply until well into 2023.

THE SOLUTION

Growers will need to get the most out of every milliliter of crop protection products that they are fortunate enough to secure. One area that growers will need to pay particular attention to is taking steps to optimize the delivery of crop protection products.

Stick N Stay is a utility modifier, more specifically a water modifier. For most crop protection product applications, the spray is largely water. Attune Agriculture developed Stick N Stay on the premise that treating water with natural hydrocolloids can dramatically change the physical characteristics of water and they could be employed to substantially improve crop protection product delivery. Attune Agriculture studied the entire crop protection product delivery process, from drop formation at the nozzle to a drop's interaction with the target plant and identified the optimum physical characteristics at each step in the delivery process as shown in the diagram below.

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SNS White Paper

Performance Tested With the Best

attune

syngenta

- Quadris Top®
- Heritage® Fungicide
- Agri-Mek® SC
- Actara®
- EPI-MEK 0.15 EC
- Callisto®
- Axial® XL
- AAtrex® 4L
- Dual Magnum® Herbicide
- TouchdownHiTech®

BAYER

- MOVENTO®
- ADMIRE®
- oberon®
- SIVANTO® prime
- Roundup POWERMAX® HERBICIDE
- BELT®
- Kontos®
- XTENDIMAX® with VaporGrip® Technology

BASF

- Clarity® herbicide
- Liberty® Herbicide
- Engenia® Herbicide
- BanvelM®
- Nealta® Miticide

CORTEVA™ agriscience

- Entrust™ SC INSECTICIDE
- Conserve® SC Turf and Ornamental INSECT CONTROL
- Enlist One™ with COLEX-D TECHNOLOGY HERBICIDE
- Transform™ WG INSECTICIDE
- Dow AgroSciences DMA® 4 IVM Herbicide
- Lorsban™ 4E INSECTICIDE
- CORAGEN® INSECT CONTROL
- AVAUNT® INSECTICIDE
- Rally® 40WSP FUNGICIDE
- Durango® DMA® HERBICIDE
- Radiant® SC INSECTICIDE
- Delegate® WG INSECTICIDE

On A Wide Variety of Crops

attune

Cotton		Cucumbers		Head Lettuce		Almonds		Grapes		Poinsettia	
Tobacco		Squash		Onions		Orange		Strawberry		Goldenrod	
Canola		Peppers		Potatoes		Apple		Blueberry		Daisy	
Wheat		Broccoli		Spinach		Pear		Day Lily		Hibiscus	
Rice		Leaf Lettuce		Sorghum		Pecan		Roses		Coleus	

Against the Toughest Insect and Mites

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Green Peach Aphid

Western Flower Thrip

Pacific Spider Mite

Silverleaf Whitefly

Cotton Bollworm

Black Margined Aphid

Citrus Thrip

Two Spotted Spider Mite

White Apple Leafhopper

Codling Moth

Cabbage Aphid

Florida Flower Thrip

Citrus Rust Mite

Varigated Leafhopper

Rice Leafroller

Cotton Aphid

Yellow Sugar Cane Aphid

Citricola Scale

Western Grape Leafhopper

Pear Psylla

Rosy Apple Aphid

San Jose Scale

Citrus Mealybug

Asian Citrus Psyllid

Against the Toughest Weeds

attune

Velvetleaf		**Puncture Vine**		**Sow Thistle**		**Volunteer Wheat**	
Pigweed		**Signal Grass**		**Groundcherry**		**Volunteer Canola**	
Tumble Pigweed		**Nutsedge**		**Wild Mustard**			

Thank you for your attention!

For questions, please contact

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