

APSA-80/Nutriplant - Summer Edition Newsletter - 2017

What's Trending in the World of Amway Agriculture?



- Customer Corner -

Warren W. Roberts from New Castle, CO customer of Brian & Rosemary Donahue from Allenspark, CO talks about his 2014 Haying Season

This is the first year we have used APSA-80. After studying all of the results and information as well as attending a seminar, I decided to apply APSA-80 to all of my hay ground. We did leave two strips where we did not apply the APSA-80 (one on a ranch where we get three cuttings and the other on a ranch at a higher elevation where we only get two cuttings).

1ST Cutting

On the ranch at the lower elevation there was an average of 5.5 bales (approximately 60 lbs. per bale) per ¼ mile row (we cut four rounds around the fields so the length of the rows are about 1220 feet, however I used 1300 foot rows at 13 feet wide to figure acres per row). **This equates to 837.6 lbs. of hay/acre which at \$250/ton is an increase of \$103.25 per acre.** On the ranch at the higher elevation there was an average of 5 bales/¼ mile. **This equates to \$93.75 increase per acre.** I want to mention that we still have the 2nd and 3rd cuttings to go. We have never had such good hay consistently on all the ranches (approximately 600 acres of hay ground). The color of the hay was better. Am I satisfied? Yes ten to one return on my investment (still got two cuttings to go) and better use of our water, this is an amazing product.

2ND Cutting

Here are my results on the second cutting on the ranch where we will get 3 cuttings. I checked 12 rows (6 above the control [where no APSA-80 was applied] and 6 below the control). There were 24 and 2/3 bales per row. In the control strip I checked 8 rows and there were 161 bales or 20 bales per row. **This equates to 699 lbs. per acre at \$250/ton (\$7.50/bale) is an increase of \$87.38/acre. So far the total increase in production is \$190.63/acre.** I know this is hard to believe but I double checked the numbers and our total production is showing the same percentage increase. We will give you a report on the third and also on the other ranch when we cut the second. Here are my results for the upper ranches (higher elevation). The results for the second cutting were almost exactly the same so the total for these ranches is a production increase of \$181.13 per acre.

3RD Cutting

The results for the third cutting on the lower ranch are very good. I checked 4 rows above and 9 rows below the control strip. There was an average of 11.23 bales per row. I checked 8 rows in the control strip and there was an average of 9.875 bales per row. **That is an increase of 1.35 bales per row or 203.25 lbs./acre. This equates to \$25.24 per acre increase which put the total increase on this ranch at \$215.87 !!!!**

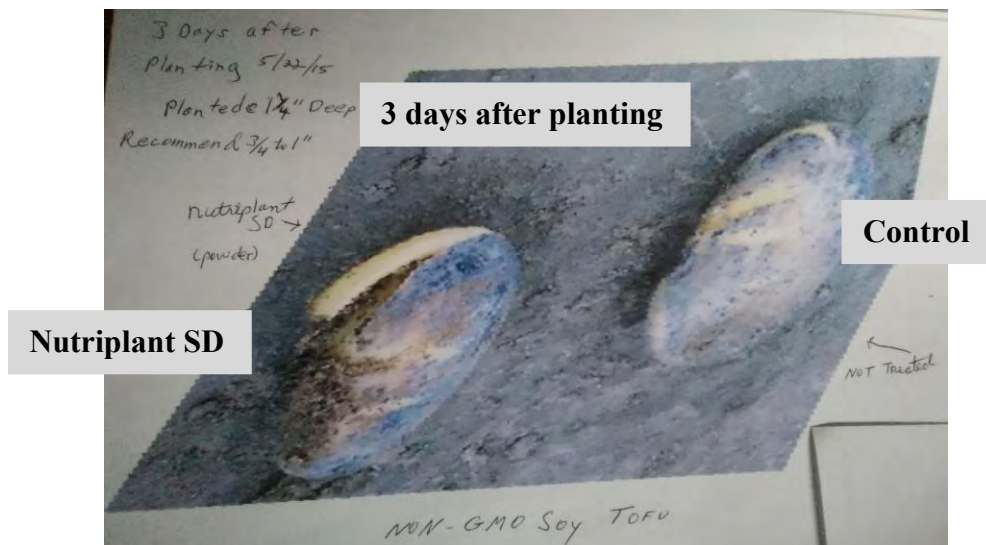
Just a note: The increase not only paid a 17 to 1 return on my investment (\$12.50/acre), I believe the quality of our hay (grass alfalfa mix) is better. Figuring it another way, the increase paid for my fertilizer cost and still got a 10 to 1 return on my investment. We have already ordered our APSA-80 for this year and we will continue our test and give you a report in the fall.

- Customer Corner -

Bonnie Alberts from Eaton Rapids, Michigan reports that her Customer from Merrill, Michigan is sold on the products.

My customer started using APSA-80 in the spring of 2014 at the rate of 15 oz. per acre for soil compaction. He applied at the same rate again in the spring of 2015. His winter wheat was planted in the fall of 2015 and yielded 110 bushel per acre vs previous year of 98 bushel. He was very excited never having had such a good yield. Made a commitment to try APSA-80 at this rate for 3 years.

In 2016 he applied APSA-80 again like the previous two years and added Nutriplant SD to soybeans prior to planting. His soybean yield despite a drought was 68 bushel per acre vs. 55 bushel per acre. He placed his order for APSA-80 and Nutriplant SD Dec 2016 to have ready for 2017. Needless to say, he is sold on the products!



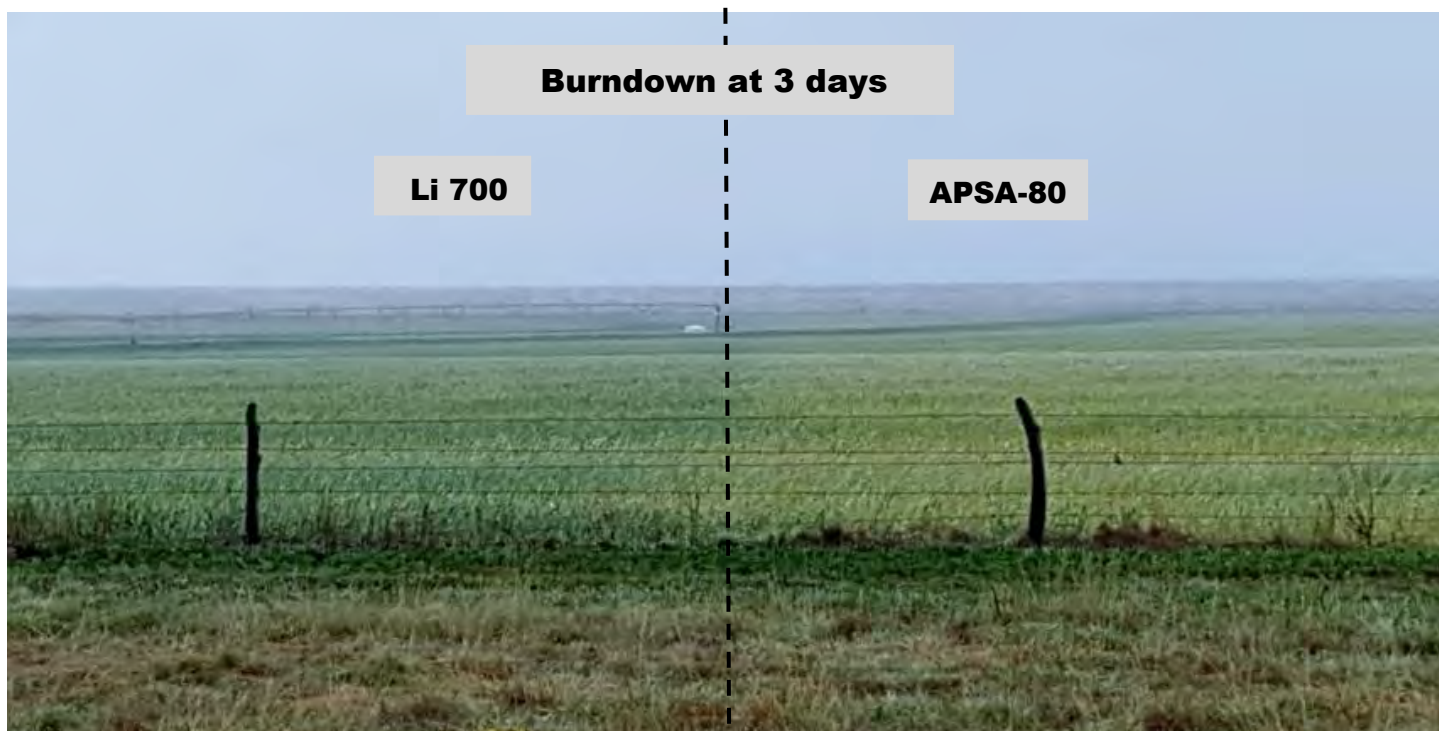
Here is a photo taken in May 2015 of soybean planted on Memorial Day weekend treated with Nutriplant SD prior to planting. We dug up one week later. The farmer grows non-GMO tofu soybeans. He believed he planted too deep and would have broken through soil if had planted only at 1" and not 1-1/2" to 1-3/4" At end of harvest he stated an increase of 4.5 bushel per acre.



- Customer Corner -

Jay Green from Amarillo, Texas providing his customer with a good response to burndown using APSA-80.

The right side of the picture is APSA-80 @ 15oz rate with Prowl and Roundup and the left is Li700 with Prowl and Roundup. The application was done on a Monday and the picture was taken on Thursday morning. The customer was doing a burndown on wheat. Please give me a call with any questions. *JC Marketing - Jay Green*



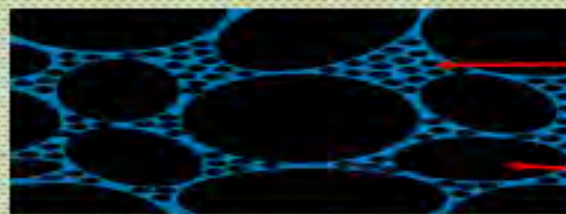
From the APSA-80 Desk

All of us from time to time need to review our products. APSA-80 and Nutriplant are being marketed to an industry that is becoming increasingly more sophisticated due to new technology demands. The challenge for those in the Farm Business is how to manage all the financial inputs needed to produce a crop that has a healthy bottom line. We all need to responsive to our customer's needs and be ready to answer questions and provide education on how our products work and what our products can do for them.

Demos are a great way to begin those discussions by providing educated explanations to support what they see. Surface tension, contact angle, porosity, sorptivity and water movement in the soil are all characteristics which we should all know and easily explain to the customer.

Soil Porosity

Soil is composed of particles that when compacted form two types of pores, Macro and Micro pores. Macropores are the larger pores that allow for gravitational or downward flow of water and Micropores are the capillaries between soil particles that require capillary flow or sideways, upwards and even downward flow that is resistant to gravitational flow.



Micropores

Macropores



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Soil Sorptivity

A contact angle of 30° is not uncommon in soils, meaning that water with a greater than a 30 degree contact angle will have a difficult time entering the small micro pores .

Forms of water repellency in soil based on the contact angle between water.

Soil Contact Angle

Water Repellent – no infiltration	> 90 degrees
Water Resistant – limited infiltration	< 90 degrees
Water Absorbant – good infiltration	< 30 degrees



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Contact Angle

Contact angle is a measure of wettability. The contact angle measurement is a cross section of a drop of liquid where external forces (air) interface meets a solid surface (leaf).

A drop with a contact angle over 90° is hydrophobic. This condition is exemplified by poor wetting, poor adhesiveness and low surface energy or ability to spread. A drop with a small contact angle is hydrophilic. This condition reflects better wetting, better adhesiveness, and higher surface energy.



> 120 degree Contact Angle
Very Hydrophobic
Poor Wetting



95 degree Contact Angle
Hydrophobic



< 45 degree Contact Angle
Hydrophilic
Good Wetting



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Contact Angle

Contact angle is one of the common ways to measure the wettability of a surface or material.

The Soil/Water Contact Angle is a measure of the water repellancy of the soil.

Soil Particles coated with organic matter become more water repellant.

Water can not penetrate capillaries between these particles and can't hydrate the soil particle surfaces.

APSA-80 lowers the soil water contact angle which increases soil sorptivity.



Amway



APSA-80 when applied at the soil amendment rate of 15 – 45 oz./acre can help overcome the effects of soil compaction, improving water infiltration, hydraulic conductivity and soil sorptivity. Also, APSA-80 reduces the surface tension and contact angle of the water allowing the water to penetrate into the micro pores and capillaries of the soil which facilitates nitrogen and potassium uptake by the plant.



Recent field studies conducted at the Irrigation Research Foundation (IRF) located in Yuma, Colorado found that APSA-80 does facilitate recharge of the root zone resulting in the active upward and lateral movement of water within the upper soil profile. This would suggest that if nitrates move with the water they also become available for the plant to use. This would also support reasoning that nitrate leaching may be less of a concern in sandy coarse soil where it is thought that once nitrates passed below the root zone, they are lost to the plant and possibly migrate downward to the water table.

Today's Topic of Interest

AGRICULTURAL SPRAY ADJUVANTS

A pesticide adjuvant is broadly defined as any substance added to the spray tank, separate from the pesticide formulation that will improve the performance of the pesticide.

Among the typical types of ingredients used are surfactants, emulsifiers, oils and salts

Categories of Agricultural Adjuvants

Activators

Spreaders

Wetters

Stickers

Builders

Extenders

Emulsifiers

Dispersants

Suspending agents

Plant Penetrants

Translocators

Emulsifiable Oils

Activators

Special Purpose

Foliar Nutrients

Compatability Agents

Drift Retardants

Foam Retardants

Buffers

Inverting Agents

Soil Penetrants

Stabilizing Agents (UV Filters)

Feeding Stimulants

Washing Agents

Sinking Agents

Protectant Binders



12" X 18"

Car door magnates are approximately \$30 each and if interested please send me a note and I will email you the website and password.

ron.jackson@amway.com

APSA-80 needs E.P.A. approval to be used with the new herbicide and crop system technology.

Herbicide Tolerant Cropping Systems

1.) Monsanto - Roundup Ready Xtend Cropping System

Herbicides:

- a.) XtendMax herbicide w/ VaporGrip Technology (low volatility dicamba)
- b.) Roundup Xtend herbicide w/ VaporGrip Technology (low volatility dicamba & glyphosate premix)

Seed:

- a.) Roundup Ready 2 Xtend Soybeans (Industry first stacked soybean)
- b.) Bollgard II XtendFlex Cotton (triple stack tolerance to dicamba, glyphosate & glufosinate)

2.) BASF - Engenia

Herbicide:

- a.) Engenia (dicamba only)

APSA-80 Position in the New Limited Sales Market

2017 U.S. Soybean Market (82 – 83 million acres)

Monsanto projected to control 55 million acres by 2019

Currently 90% of soybeans planted are DNA altered for glyphosate tolerance

2017 U.S. Cotton Market (11 – 12 million acres)

Monsanto projected to control 50% of market by 2018

Currently 70% of cotton planted are DNA altered for glyphosate tolerance

Current Status

With regards to APSA-80 registration for use with the Xtend Crop System and Engenia herbicide, we are in the process, however, it looks doubtful that registration will be completed for the 2017 cropping season. I will keep everyone informed regarding progress. Thank you, Ron

APSA-80 Quick Reference - Rates for use with Pesticides:

Ground Application Rate

Herbicides 2.5 – 5 oz. per acre with 10 – 40 gallons of tank mix spray solution (0.1 - 0.2%)

Insecticides and Fungicides 2.5 – 5 oz. per 100 gallons of spray solution (0.02 - 0.04%)

Aerial Application Rate

Herbicides .5 – 1 oz. per 3 gallons of spray solution

Insecticides and Fungicides 1/8 oz. per 3 gallons of spray solution

Irrigation Aid Rate

2.5 – 5 oz. per acre with 10 gallons water minimum

Soil Amendment Rate

15 – 45 oz. per acre with 10 gallons water minimum

Turf – Golf Course and Sod Production Rates

Growth and Greening – 15 oz. per acre with 20 gallons water minimum

Water Infiltration - 2.5 – 5 oz. per acre with 20 gallons water minimum

Dry Spot Control - 2.5 – 5 oz. per 1000 sq. ft. 20 gallons water minimum

From time to time I'm asked if I can recommend a good Defoamer

For the money, I like "Drexel" Foam-Kill

\$10 per quart!



Intended for use with herbicides



Use Rate - 1.0 oz./100 gallon tank mix

Buy it online

<https://www.ruralking.com/> or <http://barndoorag.com/>

Note! The APSA-80/Nutriplant Newsletter is produced and edited by Amway Agriculture and is intended for use by Amway Independent Business Owners (IBO) and their customers.

Also, if you have a good customer success story and like to tell about it, send it to.

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Ronald Jackson – Agricultural Specialist