Not all ag polymers are created equal

By Carl Ranno, President, American Soil Technologies, Inc.

While polymers have been used for decades in many industrial and consumer applications, advanced cross-linked polymers designed specifically for agriculture just landed in the fields in the '90s. American Soil Technologies, Inc. (ASTI) is working to dispel the many misperceptions created by failed attempts to use poorly suited polymers in those early days. A recent article published by a land grant university highlights the need for understanding, even in the academic community, of the advances in polymer technology now available for growers.

So how are today's ag cross-linked polymers different? ASTI's products were precisely formulated and custom designed with properties for optimal performance in the field. Here's an overview of some of the top characteristics you need in an ag polymer:

Releases Water Readily

A primary benefit of an ag polymer is water management. Early diaper-type polymers were not designed to hold and release water readily for plants. They are designed to hold and not release, for obvious reasons. Our products were developed to have the ability to hold and easily release water and water-soluble nutrients when plants need them. And to maintain this recharge-ability over time.

Potassium-based, Long lasting

Early polymers for agriculture were starch-based and broke down quickly in the soil profile. The next generation of polymers were sodium-based, some of which are still marketed today. ASTI's advanced cross-linked polymers (hydrogels) are potassium salts of synthetic organic molecules (potassium salts of polyacrylamide/polyacrylate copolymers) and when the potassium salt is exposed to water the K+ breaks apart from the organic copolymer. The K+ then becomes part of the nutrient supply in the soil. Our advanced potassium-based polymers have the ability to last for several seasons and recharge with water hundreds of times over their life span.

Right sized

The polymer products sold by ASTI are high quality and graded by size for optimized performance in the field. In fact, ASTI holds a patent on agricultural applications of cross-linked polymers of a certain size. Competitive products are often run-of-the-mill polymers that can be too large to be useful.

Increased efficiency

By conserving water and water-soluble nutrients, our products can help you grow a crop with more efficient use of nutrients, lower pumping costs, and better overall utilization of natural resources. Consider them another tool, just like improved hybrids, that can give you an edge.

Field conditions are key

Our rates and recommendations are based on the unique conditions of your field, the crop and your production goals. It's not unlike your other input decisions like seeding rates, fertilizer etc.

ASTI provides service to customers to help them determine if there are any polymer performance-limiting factors on their farm. We customize the solution to the unique characteristics of your fields and water source. Admittedly, there are limitations to the technology.

1. UV light destroys these ag polymers, so the life of the polymer continues only so long as it is buried.
2. Salts and some minerals inhibit the ability of the polymers to hydrate properly, so their presence in fertilizer, soil and water can impact performance.
3. The polymers won't create water, they only absorb and release water that is provided through irrigation or natural precipitation.

Not all polymers are created equal. Our ASTI experts are available to answer questions about today's advanced ag polymers and the differences in their performance. For more information call American Soil Technologies, Inc toll free at 1-800-798-7645.