

Anwendungsbericht/User Application Report

Produkt/Product:

AquaKat

Anwender/User:

Polevoe Farm llc.
Sergey Kazhgaliev
Kazakhstan

Fachberater/Consultant:

Group of companies AgroPlus llc.
Russia

Datum/Date:

2015

Application on sprayers in Kazakhstan

In order to get profit, farmers have to look for new ways of cost-saving. They make extraordinary decisions, based on modern science achievements.

Resource-saving technologies in areas of risky farming

This report is about a resource-saving trial of “Polevoe”, llc – a Volgograd region farm. Volgograd region is an area of risky farming. Taking into account precipitations, the region is very close to dry steppe zone of Kazakhstan. Precipitations are not evenly distributed during a year: drought occurs very often during vegetation period, most of the rain falls in late summer and in autumn when harvesting.

How a Russian Farmer saved 2.5 Million Rubles

Sergey Kazhgaliev is a well-known, famous farmer with 30 years of experience. He is a foresighted, caring farmer, always looking for resource-saving ways: he calculates everything and thinks several steps ahead. Sergey is a very energetic and cheerful person and an optimist. All these factors have helped him to achieve outstanding and sound results in agriculture. In 2006, his company got the honorary title “Company of top level farming”. In 2010, the Ministry of Agriculture issued him the certificate of honour “For top level activity in agricultural products growing”.

Sergey cultivates the following crops: spring wheat, sunflower, false flax, corn and sorghum. The total area is 9'700 hectares. He started no-till practice (direct sowing) in 2010. This technology helps to lower total production cost.



Water shortage is the main problem in the area. In order to solve this problem, the farmer was looking for the way of accumulation of soil water. He managed to keep soil water with the help of organic mulching, so called “organic blanket”. Still there was another problem – the problem of saving the water inside the plant itself. Air drought brought all his efforts to nothing and led to low yields and low production quality.

Once Sergey read an article “Saving water technology inside the plants”, issued by “Laboratory #1”, Group of companies AgroPlus, llc. The article was about the improvement of the plants’ drought resistance due to the increase of the dry matter content. This is achieved by changing the water structure inside the plant tissue into colloid condition.

The message

Plant cells’ water comes in two forms: free flowing form and colloid form (condensed, with high dry matter content level). Free flowing water moves very well and is easily involved in different bio-chemical reactions. The disadvantage of free flowing water is that it turns into crystals, freezes and evaporates quickly. Colloid water in plant cells is also available for bio-chemical reactions but has lower freezing point and less level of evaporation.

The higher the dry matter content due to colloid water, the higher the plants’ resistance to draught stress, diseases, pests. When we influence the dry matter content, we influence the yield volume.

Sergey understood that it was important to save the water not only in the soil, but also in the plants. Since 2012, he has studied the issue and practiced on his fields. Correct seed treatment with the fertilizer Raykat Star, as well as leaf applications of Atlante, Atlante Plus, Kelik K and Kelik K-Si (according to the results of diagnostics) raised the dry matter content and helped to store the water in the plants.

The result of the experiment was a yield increase of 30-40% on Sergey's fields in comparison to neighbours who complained about low yields because of drought or sometimes had no yield at all because of hot dry winds. It is unbelievable but today the farmer gets yields on the level of yields of Cuban farms and 1.5 - 2 times more than the average in his region.

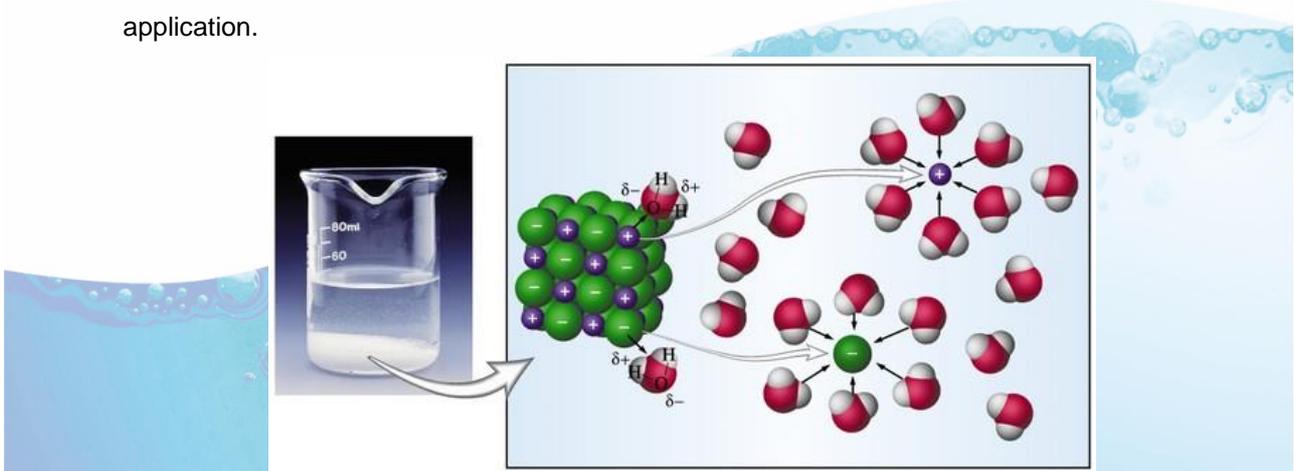
Water quality

It is well known that when you choose the minimal-till or no-till technology, most of the problems you are confronted with are diseases, pests and weeds. Glyphosate effectiveness is low in dry climate, and farmers are to increase the doses up to 3 times. However, the problem is not the quality of the herbicide or the resistance of plants to it, but the water itself! As a rule, technical water is hard in this region due to high Ca and Mg content. Hard water is harmful for plants itself, as it causes salt stress. The better the water, the more effective the result of the herbicide treatment. But how to improve water?

Sergey went on looking for new ways and was lucky to come across the AquaKat technology.

AquaKat water treatment

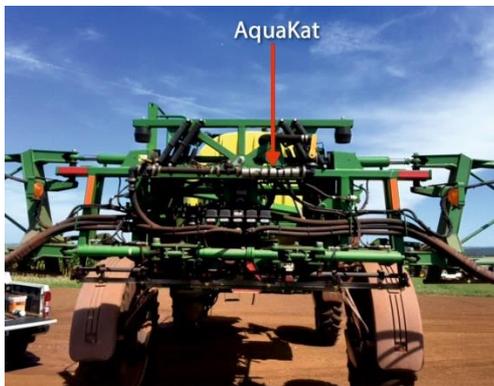
AquaKat softens water in a way that the minerals it contains cannot bind glyphosate or other chemicals' molecules. The water molecules make small-cluster combinations (hexahedrons) with the glyphosate active ingredients imbedded. Such clusters manage to bring the active ingredients into the plants' metabolic system. This leads to high efficiency of herbicide application.



AquaKat technology helps to optimize production costs:

- herbicide dose reduction down to 50%
- water volume reduction down to 50%

It was a challenge to test and try. The farmer purchased two units of AquaKat XL (produced by Penergetic Company, Switzerland) and installed them on his sprayers. He began to reduce - as recommended - the glyphosate dose gradually, starting with 15 - 20% reduction, then - 30%. It was obvious that the AquaKat-structured water improved the effect of glyphosate. Inspired by the results, he lowered the dose by 50%. Again, he was surprised with the perfect result. The success pushed him to use that approach on the main land plot. Thus, he saved 2.5 million RUR on herbicide costs during one season!



AquaKat: easy to install, just attach it to the main pipe.

Advantages of AquaKat water treatment:

- Dissolves fertilizer and pesticide products better
- Stabilizes the working solution
- Water drops stick better to the leaf surface
- The working solution penetrates the leaves' tissue better (chelating effect)

We must learn to understand Nature. As practice shows, Nature gives fair respond to wise and creative farming.

In Kazakhstan, water-saving technologies as well as AquaKat technology are very important. Sergey is ready to share his experiences with farmers and agronomists. Some farmers from Kazakhstan are interested in this technology and want to practice modern resource-saving technologies on their farms, too.