

**“The Main Thing is to Change Farmers’ Thinking About Innovation
—to Break Stereotypes”**

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On May 16 a leader of Maveev Kurgan AKKOR - Nikolay Popivnenko, farmer Alexander Fedorenko, and Alexander Novak, deputy head of the Agricultural and Natural Resource Conservation Department of the Matveev Kurgan Administration came to the studios of Russkoe Radio. The main topic they discussed with Max, our radio journalist from the program "Live Talk," was the visit of a Swedish delegation, environmentalists from St. Petersburg and scientists from Rostov and the workshop that they conducted for farmers of the Premiusie region.

--Welcome, dear guests. My first question is about the seminar’s theme and the participants. Why is such a seminar necessary?

N. Popivnenko: Last year a representative from the Russian NGO Bellona, Elena Kobets, visited and made a presentation about alternative ways to use agricultural residues other than burning. This project is spearheaded by the Swedes as representatives of the Arctic Basin countries. She mentioned there would be a study trip to Sweden to explore these issues and Alexander Fyodorenko and I traveled to Sweden as part of the oblast delegation. There we agreed that the Swedish farmers would make a return visit to our region to be convinced that in Rostov Oblast the stubble-burning situation is satisfactory. We do not burn, unlike Krasnodar Krai, for example. In Sweden we agreed there would be a program that included Alexander Ivanovich Fyodorenko’s farm, which is working on introducing “no till” technology that presumes no burning whatsoever.

--Are there any other ways to use agricultural residues?

A. Fyodorenko: Of course. For example, the scientist Lobyntsev from the Donskoi Agricultural Scientific Research Institute proposes another method.

A. Novak: This is shallow embedding of the residues in the soil or covering them with soil after the harvest. This is done in order to enrich the soil with useful substances that come from the residues and that are processed by microorganisms to improve soil fertility.

N. Popivnenko: There is the sense that our region was better than neighboring ones in the surface management of soil from Soviet times. The same Lobyntsev talked about how adding nitrogen to the soil is an uneconomical proposition and plant residues have the same effect as adding manure as fertilizer, which is improved soil fertility.

--Why is it only now that alternative technologies are being introduced? Everything old is new again!

A. Novak: Of course, you have to understand that burning as such is not an appropriate method. In recent years questions have arisen about global warming and ecological themes in general, one of which is burning. This does not mean that villagers are responsible for global warming. We have to understand that these problems have been added to those of land use management. At some point in time these two issues came together and began to demand decisions and action. Our region is on the outskirts of the Donetsk Range so our soil is rocky. We always suffered from water and wind erosion and sometimes still do. This means that for decades we have been implementing surface soil management and we use sub-surface cultivators and create forest buffers as protection against the wind. Life has forced us to do all this. You must remember that the new technologies require very substantial up-front financial investments in the implementation phase.

A. Fyodorenko: There is no analog in Russia to the alternative technology used, for example, in no-till. Imported technology is available but very expensive. At some point the costs will be recovered, but there are serious capital expenses now.

A. Novak: The main thing is to change farmers' thinking about innovation—to break stereotypes!

N. Popivnenko: That's the hardest part!

A. Fyodorenko: At the seminar all the participants listened carefully, but then when we got to the fields and they saw the grooves where the seed is planted and the ground covered with residues, some of them said to me that you have to harrow it in. They think the ground is supposed to be even and clean, so the way of thinking is colossally internal and standardized. People do not want to acknowledge obvious facts and they fight anything new.

--Alexander Ivanovich, how did you start using no-till technology?

A. Fyodorenko: I started to understand that the farm's economic indicators were getting worse—for a number of years in a row, in fact—and if I did not try something new, the situation would become precarious. I was working just for the sake of working, meaning that there was not and could never be any progress. I took out a bank loan and used it to buy a new tractor, which I used to pay off the loan that I bought it with. And so it went for 20 years. I watched the soil's fertility and saw no positive changes in spite of the "scientific" application of mineral fertilizers and all the technological variations of land management, so this caused me to start wondering why. I became interested in domestic and international experience and came to the conclusion that implementing no-till was unavoidable.

N. Popivnenko: In 2009 an oblast law was passed about the rules for rational land use and this law categorically prohibited burning agricultural residues. The law included very serious sanctions and these measures helped hasten appropriate practices. Alexander Ivanovich started using no-till and many others, myself included, use "minimal" technology, although I am getting ready to move more toward no-till land management.

A. Fyodorenko: Other reasons were important for me.

N. Popivnenko: I agree. Each of us had his own questions and problems, but the majority of farmers and heads of agricultural enterprises understood and understand that we have to learn to work differently. The number of people who attended this seminar and the fact that the participants were not only farmers, speaks to this.

A.Fyodorenko: The main problem is the human factor. My machine operators also refused to embrace new work conditions and technology, so I had to be in the field all the time and adjust the seeding machine myself. People say, “this won’t work because it can’t!”

A.Novak: They are used to the old ways and are hostile to these new things. People do not like experiments and are afraid of them.

A.Fyodorenko: Our Swedish colleagues also say that the number of farmers there who have embraced the new technologies is few. And this in spite of a general problem of declining soil fertility. There are no other ways of solving this problem for now and we need to speak openly about it. Even when animal husbandry and fodder production were flourishing, soil fertility was still falling, although not as fast.

--It was not so long ago that all our compatriots planted potatoes, and now it is only a few. There is no point in sowing as many potatoes as you harvest, so the general problem of soil productivity is relevant even to gardeners—to everyone.

A.Novak: Everyone knows the climate is changing.

N. Popivnenko: Without a certain amount of rain, potatoes will not grow.

A.Fyodorenko: The main indicator of soil productivity is the number of organics. This may not change a lot over several years, but over several decades it is noticeable. No matter how much mineral fertilizer we add, we will not get a big harvest without essential amounts of organic mass.

--What was the mood of our Swedish colleagues at the end of their visit?

N. Popivnenko: A very good mood and with very positive impressions. They thanked the seminar organizers, the regional administration and all participants. The Swedes said the seminar was interesting and we were “of one mind.” They came with a positive attitude and were pleased by everything.

A.Fyodorenko: The issues we discussed are important to everyone who uses alternative technologies for land management. They said that many new and positive things were highlighted for them. One of our Swedish guests said he wanted to introduce binary planting with the technique developed by Professor Zelinskii from Don State Agricultural University. He will sow clover and barley in one field. Binary land management is an attempt to make the agricultural environment richer and more diverse by planting two different cultures, one of which is the primary and the second of which assists the first by enriching the soil with organic substances.

A.Novak: As a rule, it is legumes that take nitrogen from the air and add it to the soil. The main crop can be wheat, corn, sunflowers or something else. This leads to improved soil health as the crops complement one another. Nikolai Andreyevich Zelinskii does not use any mineral fertilizer on his pilot fields and the harvest is greater, not less, than on the ordinary fields. Some crops may make hard-to-assimilate phosphorus, calcium and other compounds into ones that are easily assimilated.

N. Popivnenko: I have recently increased pea planting. This year I planted wheat with peas and measured micro-elements in the soil composition. Everything was excellent with the exception of one micro-element, which was a result of the useful neighborliness of these two crops.

A.Fyodorenko: Every agricultural producer needs to invest in biological diversity, which means planting diverse crops to facilitate the creation of a sustainable agricultural environment.

--Is anyone in our region using binary techniques?

N. Popivnenko: Yuri Ilich Yesionov gets seeds and plants a lot of alfalfa (medick). Professor Zelinskii mentioned him during his presentation at the seminar.

A.Novak: The important thing is that alfalfa works not only on the seeds, but fertilizes the soil.

A.Fyodorenko: Alfalfa lives for two or three years and produces a good grain harvest here. The main thing is that alfalfa not become the main crop and hinder the latter's development.

A.Novak: A very important question with all of these processes is the cost of production. Is it better to receive 2.5 tons per hectare with a production cost of 3-4 rubles--or 2 rubles, or 5 tons with a production cost of 8 rubles or more?

--Let us get back to the question of stubble burning. There are many other issues as everything is burned. Every village resident burns something and pollutes the atmosphere from time to time, not to speak of automobile transport and other sources. How do we fight these--Draconian measures?

A.Fyodorenko: In Sweden burning is also allowed from time to time, but they also have these very useful burners or furnaces that burn straw and heat homes.

N. Popivnenko: I want to speak to all my fellow neighbors through "Russkoe Radio" --don't burn trash and dry grass. This causes fires in the forest belt and has other dangerous impacts. This year the same places are burning that were burning in the past.

A.Fyodorenko: When I stopped burning stubble, some people decide to "help" by tossing in a match.

--What are people to do with fallen branches, dry grass and paper trash?

A.Novak: There is one very necessary and proper solution--composting! I do not recommend anything else.

N. Popivnenko: We are building four trash-handling factories, one of which will be in Sambek. Accordingly, the problem will be resolved.

A.Fyodorenko: After the trip to Sweden I began to throw food leftovers on the fields and the earth breaks them down very quickly.

--What tips the scale at the end of the day, ecology or profit?

N. Popivnenko: Ecology is more important, in my view. Farmers like Alexander Ivanovich need support. By this I mean that subsidies need to be distributed, in part by taking into account ecologically sound agricultural production techniques.

A.Novak: Even scientists argue about whether this or that technology is beneficial or not. Alexander Ivanovich is one of the first and if it is shown that his approach is useful and beneficial, then even the government will shift toward such innovators.

N. Popivnenko: Water and wind erosion is practically non-existent on no-till fields.

--We need to wait for the time when everyone understands that it is precisely alternative technologies that are basic.

A.Fyodorenko: Professor Zelinksii said that humankind has been working the soil intensively for about 200 years without any improvement in soil fertility anywhere in the world. So we need to change the system of land use to one that maintains and improves the soil's fertility.

N. Popivnenko: In Russia there are about 40 million hectares of unused arable land. If we put these back into production there will no longer be a problem with food production.

A.Novak: One of the farmers at the seminar asked about the size of government subsidies in Sweden. When he heard the answer, he said, "give us half that amount and we will feed you."

A.Fyodorenko: Swedes' attitude toward government subsidies seems to be that it is great to have them, but not catastrophic if they don't.

N. Popivnenko: I am not completely in agreement with Alexander Ivanovich. There is such a disparity in the price of fuel, technology, fertilizer and agricultural output and state subsidies exist to smooth these out.

--How can we attract people to agriculture who are ready to introduce new techniques, revitalize abandoned land and so on?

A.Novak: Of course, with government programs to renew and restore the health of agriculture, including with state support of agricultural producers. Also by creating a positive image of rural life and working there. Thank God, we do not have a problem with abandoned arable land here. We use it all to its best and fullest.

--Thank you for an interesting discussion. We ask all our listeners to think about the ecology of the region and the entire planet and only take those steps that will make it better.

---Recorded by Sergei Zykov, Translated by Gail Stevenson, ICCI Russia Program Director