Nanotechnology Widely Applied to Agriculture with Good Results

2020-09-12

The agricultural nanotechnology institute of the Academy of Agricultural Science has recently developed nanotechnology products which help the growth of crops and increase the per-hectare yield while reducing the consumption of fertilizer and agrochemicals.

The nano silicon fertilizer developed by the institute is cost-effective and has simple production process as it was made with the industrial waste as the basic raw material.

According to researchers, this fertilizer improves the resistance to fall and diseases of crops and, particularly, the growth and nitrogen absorption rate of the roots of rice paddies and disease resistance of rice paddies in the areas vulnerable to cold-weather damage. And the amount of the fertilizer used is only one thousandth as compared to the previous silicon fertilizer which was consumed in large quantities.

The introduction of the fertilizer into hundreds of thousands of hectares in the past years has confirmed that it can increase the average per-hectare yield by ten percent, and the fertilizer production process has been built in some ten cities and counties.

Choe Song Ryong, director of the institute, said that a very small amount of its agricultural nano germicidal agent is enough as compared to the previous germicidal agent, and the agent has big penetrating and diffused power against germ cells and good mobility and adhesion. For its good effects and application, it does not give damage to humans and environment.

When this germicidal agent was spread to crops and fruit trees including rice paddies, it exterminated diverse kinds of diseases and the extermination rate was over 90 percent.

The institute intensified research into nano germicidal agents, thus bringing out a nano germicidal agent with stronger extermination effects.

The agricultural nano functional vinyl sheet is more than double the tensile strength and ductility of normal vinyl sheet, has good resistance to ageing and its serviceable life is 1.5-2 times longer than that.

In particular, in case the vinyl sheet is used for seedbed, the germination rate of seeds and the growth of seedlings will be improved further as the sheet has good light permeability and radiation function of far infrared rays that promotes the growth of young seedlings and is highly efficient in heat insulation.

The institute also turned out various products including a nano photosynthetic reinforcing agent and nano biological growth accelerator.

Its nanotechnology products were appreciated highly at the national sci-tech festival and exhibition of the national nanotechnology sector.