CONTEMPORARY APPROACH TO FIELD CROPS PRODUCTION

DRAGANA LATKOVIĆ, BRANKO MARINKOVIĆ, JOVAN CRNOBARAC, GORAN JAĆIMOVIĆ

University of Novi Sad, Faculty of Agriculture
Novi Sad, Serbia
dragana@polj.uns.ac.rs

In the not too distant past, a revolution in agriculture was marked by intensive chemical application and replacement harnesses with then-modern machines. The development of machinery has been progress, which previously was not even imaginable. New discoveries and achievements in plant breeding, as well as the increasing use of chemicals led to an increase in the yield of field crops several times. On the other hand, excessive application of chemicals and mineral fertilizers has brought new scientific and technical problems or challenges in agriculture. Irresponsible use of land, as the main resource in agricultural production, there is a change of its biological, chemical and physical properties and its destruction.

One of the problems is significantly reduced the content of humus in the Vojvodina fields. On average 47.9% of agricultural land humus content ranges from 1 to 3%, and 51% of agricultural land has humus content of 3-5%. Before the intensification of agricultural production humus content in our fields amounted to 6 percent or more. Reduced humus content usually is a phenomenon caused by the omission of organic fertilizers and the burning of crop residues.

An irrational use of the content of phosphorus is higher than the optimum to 26.1% of agricultural land which has a negative influence on the yield. Problems with potassium content are even more complex due to excess amounts of this nutrient in 50.9% of arable land.

Uneconomical and often uncontrolled use of pesticides has caused soil and groundwater contamination, as well as the resistance of plant pathogens and weeds.

Modern, precision agriculture, which includes using GPS technology, it is possible to properly conduct machine without unnecessary and excessive overlap. The use of fertilizer is provided on parts of the fields on the basis of the planning needs (to determine yield) and the application of pesticides is carried out only on parts of the field where it is required (the occurrence of weeds, diseases, pests). In this way will ensure optimal chemical application.

Application of microbiological fertilizers that contain more populations of microorganisms, plants will improve the supply of necessary nutrients while

preserving the environment. With regard to the development of agriculture in the future must be based on the economically effective basis, the application of biofertilizers will be fully incorporated into this concept.
The use of biomass as a renewable energy source is a challenge that science cannot afford. At this time it was the biggest pressure on biomass as a renewable energy source.