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- **Education Background:**

1997 Institute of Education "Belarusian State Agrarian Technical University"

- **Working Experiences:**

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- **Research Interests**

Methods and technical support for the application of fertilizers and crop protection products, mechanization of the main soil treatment

- **Professionsl Activites**

Autor (co-author) of more than 270 scientific and aducational publicational, 6 monographs, 32 patents for inventions and utility models



## Directions for improving field sprayer structures considering the increasing environmental requirements for pesticide application

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**Abstract:** **【Objective】** To study the impact of pesticide application methods and conditions in crop production on the quality of the technological process performed and to substantiate directions for improvement of field sprayer structures to reduce the environmental impact. **【Method】** The quality of application of pesticide solutions was investigated under laboratory and field conditions using standard and developed methods. The influence of sprayer installation parameters relative to the treated surface, wind speed and direction, structural parameters of wind protective devices of the spray pattern on the quality of distribution of the working liquid was studied. **【Result】** The results of pesticide droplet movement research under various factors are summarized. The directions of possible improvement of spray liquid distribution quality by proper installation of atomizers, providing smooth running and damping of boom oscillations during sprayer movement, reducing losses due to drift and using various designs of wind protective devices of the spray pattern are proved. **【Conclusion】** The recommendations on the use of hydraulic sprayers in windy weather are given. Technological parameters of wind protective devices of the spray pattern are proved. The recommendations on development of boom vibration stabilization and damping systems based on the use of elastic and damping elements are proposed. The designs for boom stabilization and vibration damping systems based on the use of elastic and damping elements are developed. A system for changing the boom position in relation to the surface to be treated during sprayer operation is offered. The obtained results are implemented in the development of agricultural machinery designs for chemical plant protection.