

який має високу ефективність проти септоріозу та може працювати при низьких температурах, продемонструвати кращу ефективність порівняно з Прентою. Ваша здатність ретельно проаналізувати умови та вибрати оптимальний захід захисту рослин, враховуючи патогенез та характеристики препаратів, є важливою для забезпечення максимального врожаю та якості продукції.

Висновки. Ваш аналіз засобів захисту рослин ТОВ (ТД НЕРТУС) підтверджує важливість ефективного застосування фунгіцидів для боротьби з грибковими хворобами на пшениці озимій. Дворазові обробки фунгіцидами Прента та Фіделіс дозволили ефективно захистити рослини від шкідливих хвороб, таких як септоріоз, і зберегти потенційну врожайність кожного з вивчених сортів. Цей підхід підтримує високу якість та кількість урожаю, що є критичним для досягнення успіху в агропромисловому виробництві. Виправдане та вчасне застосування фунгіцидів сприяє зниженню втрат врожаю та покращенню врожайності культурних рослин, що є ключовим для ефективного господарювання в умовах епіфітотійного розвитку хвороб.

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ANALYSIS OF THE PHYTOSANITARY CONDITION OF WINTER GRAIN CROPS USING SATELLITE MONITORING IN THE CONDITIONS OF KIROVOHRAD REGION

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Abstract: Analysis of the phytosanitary condition of winter grain crops using

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Keywords: *NDVI, satellite monitoring, innovative solutions, Cropwise Operations, analysis of phytosanitary condition*

Relevance: In the modern world, agriculture faces numerous challenges that require innovative approaches to managing agrarian processes. Among these challenges are the need to optimize production and maintain high crop quality [1]. In this context, the analysis of the phytosanitary condition of crops becomes particularly important, as it affects the productivity and resilience of agriculture. This thesis focuses on the use of satellite monitoring as a progressive tool for analyzing the phytosanitary condition of winter grain crops in the Kirovohrad region, which is a significant direction in the development of agrarian technologies [2].

The main objective of this study is to conduct a thorough analysis of the phytosanitary condition of winter grain crops in the Kirovohrad region using satellite monitoring. This includes evaluating the effectiveness of such technologies and exploring their potential in the context of modern agronomy.

Research Methods

Within the framework of the study, advanced methodologies are employed, including NDVI (Normalized Difference Vegetation Index) analysis for determining plant health and assessing the level of diseases [3]. Satellite monitoring using the Cropwise Operations system enables detailed information gathering about the state of crops, including the distribution of pests and diseases. This provides the capability for precise analysis and effective management of agricultural resources. The system also allows for the identification of problem areas in the field and their extent [4].

Expected Results

The study aims to confirm the effectiveness of using satellite monitoring for the phytosanitary assessment of winter grain crops, contributing significantly to the development of agrotechnologies. It is expected that the research results will affirm the importance of NDVI in accurately diagnosing the condition of crops and in determining necessary agronomic measures, which will help increase the efficiency of agricultural production and resilience to environmental and economic challenges [5].

Results

Within the framework of the diploma research focused on the phytosanitary monitoring of winter grain crops using Cropwise Operations technologies, significant results were achieved. Special attention was given to the identification

and diagnosis of plant pathogens, particularly rust and net blotch in winter wheat - diseases that pose a serious threat to yield.

The importance of early detection of these diseases cannot be overstated. Thanks to timely diagnosis, it was possible to prevent the further development of the infection and preserve the potential harvest. The measures taken included the application of fungicides, selected based on their effectiveness and safety, in accordance with agronomic standards and expert recommendations.

After conducting fungicide treatment, a subsequent monitoring was performed, which confirmed the effectiveness of the measures taken. The results of this monitoring showed a significant reduction in the level of infection load, indicating the success of the implemented plant protection methods. This case underscores the importance of an integrated approach in managing the phytosanitary condition of crops, where satellite monitoring plays a key role in ensuring high productivity of agricultural cultures.

Overall, the study confirmed that satellite monitoring is a powerful tool in ensuring the sustainable development of agriculture, allowing for the reduction of risks and enhancement of production efficiency.

Conclusions:

Therefore, the main conclusion of the thesis is the confirmation of the importance and effectiveness of using satellite monitoring for analyzing the phytosanitary condition of winter grain crops. The Cropwise Operations system demonstrates significant potential in increasing the accuracy of phytosanitary diagnostics and the effectiveness of agronomic measures. An important condition for the successful application of such technologies is their integration with the professional knowledge and experience of agronomists [6].

The research also highlights that while satellite monitoring is an innovative tool, it should not replace but rather complement traditional methods of agronomic management. The use of this technology enables agronomists to make more informed decisions, optimize resource use, and ensure sustainable production.

The results of this study pave the way for further innovations in the field of satellite monitoring and its application in agriculture, particularly in developing more accurate and effective methods for assessing and managing the phytosanitary condition of agricultural crops.

Overall, the outcomes of this research open new prospects for enhancing the management effectiveness of the phytosanitary condition of winter grain crops, ensuring the sustainable development of the agricultural sector in the face of modern challenges and technological possibilities.

This thesis also underscores the need for further research in this field, especially in the context of developing integrated approaches that combine traditional methods of agronomy with the latest technologies in satellite monitoring.

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МОНІТОРИНГ ФІТОСАНІТАРНОГО СТАНУ ЗЕРНОВИХ КУЛЬТУР В УМОВАХ ОДЕСЬКОЇ ОБЛАСТІ

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