



PROVISION

Publication of scientific articles in the journal «Bulletin of the Korkyt Ata Kyzylorda University. Agricultural Sciences»

Kyzylorda, 2023

Information about the document

1. Developed by the Editorial and Publishing Division.

2. Approved and activated by the Chairman of the Board-Rector of Korkyt Ata Kyzylorda University from « DCtober30 2033 by order 430-9

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Definitions and Abbreviations

This Regulation uses the following abbreviation:

Korkyt Ata Kyzylorda University - Kyzylorda University named after Korkyt Ata.

MRNTI - international rubricator of scientific and technical information GRNTI - Code of State Categories Scientific and Technical Information DOI - Digital Object Identifier.

1. General provision

This provision on the publication of articles in the journal «Bulletin of the Korkyt Ata Kyzylorda University. Agricultural sciences», defines the rules of preparation for the publication of scientific articles in the journal «Bulletin of the Korkyt Ata Kyzylorda University. Agricultural Sciences», registered in the Ministry of Culture, Information and Public Consent of the Republic of Kazakhstan, certificate of registration of mass media 3032-Ж 14.06.2002. (number and date of initial registration 450-GF-29.10.1998). Certificate of re-registration of periodicals, news agencies and Internet publications KZ75VPY00039225. 25.08.2021.

Developed in accordance with:

- requirements for scientific publications to be included in the list of publications recommended for publication of the results of scientific activity approved by Order 20 of 12 January 2016 (In accordance with the Order of the Ministry of Education and Science of the Republic of Kazakhstan N_{2} 170 dated April 30, 2020, as amended)

2. Editorial politics and direction of the journal

«Bulletin of the Korkyt Ata Kyzylorda University. Agricultural Sciences» is published 4 times a year and contains information about scientific works of natioal and foreign scientists and materials of scientific conferences, scientific and methodical articles, scientific creativity of youth, information about the university life.

Tasks of the Editorial politics of «Bulletin of the Korkyt Ata Kyzylorda University. Agricultural Sciences»:

to contribute to the improvement of the quality of scientific research, the identification of scientific potential for the introduction of advanced scientific achievements;

Enable scientists and young researchers to publish their research results;

to draw attention to the most relevant perspective and interesting areas:

focusing on the most relevant perspective and interesting areas of the agricultural industry:

ensure interaction and involve leading domestic and foreign scientists in publications, establish an exchange of views between researchers.

relationships of all parties (editors, authors, reviewers) are based on compliance with the requirements to the ethics of publications.

the authors are responsible for the factual material in the articles

Materials that have received a negative review and rejected by the journal are not published and returned to the authors. The editorial office does not store rejected materials.

3. Ethics requirements for publication in the journal

All parties involved in the process of preparing materials for publication in the journal - authors, expert commission, reviewers, editorial board members - should follow the following requirements for publication ethics.

The Editor-in-Chief may consult with members of the editorial board and reviewers when making a decision, who shall be guided by the following rules:

- do not disclose information about the submitted manuscript to anyone except the author, reviewers, potential reviewers, other editorial consultants and, if necessary, the publisher.

- do not discriminate in the evaluation of the authors' submissions;

- not to disclose without necessity information about the materials accepted from authors, except authors, reviewers;

- take reasonable measures to identify and prevent the publication of articles in which the research has been improperly conducted, discourage such violations or knowingly permit such violations;

- consider facts or allegations of improper research behaviour;

- be prepared to publish corrections, clarifications, rebuttals and apologies where necessary.

In the publishing process authors are guided by the following rules:

- to work in full compliance with current legal requirements regarding libel, copyright, legality and plagiarism;

- to provide reliable results of the work done on the original study and an objective discussion of its significance.

contain enough content to ensure a review of the work.
submitting the manuscript simultaneously to another edition is considered immoral and improper. The author must not submit to the magazine an article previously published in other publications;

- guarantee the complete originality of the presented material. If other authors' works or statements are used, relevant bibliographic references or excerpts are provided;

- do not allow plagiarism in any forms. The article should have at least 80% uniqueness of the text for publication.

- the second time the article gets the necessary indicator, the article is sent to the editorial board for consideration. An article that does not meet the relevant requirements, the originality of which is twice checked, is not accepted for publication - the article is not considered a plagiarism provided the author(s) refer to their own research work and the level of quotation of their scientific work does not exceed 20%.

- to follow the rules of autocitation (self-citation), namely, if the elements of the material were previously published in another article, including in the journal «Bulletin of the Korkyt Ata Kyzylorda University. Agricultural Sciences», the author must refer to the earlier work. Authors are advised to follow a self-citation rate of 0-10%.

- to disclose in their works information about funding, as well as the presence of interests of third parties, which may be perceived as having influenced the results or interpretation of their manuscript.

- informing the responsible editors in the scientific directions of the journal about a material error or inaccuracy in the work and providing constant contact with the editors of the journal to delete or correct the article.

- the number of articles included in each issue of the journal should not exceed 35 articles.

4. Expert opinion and review of scientific articles submitted to the editorial office

Expert opinion and review of manuscripts of scientific articles for publication of journal «Bulletin of the Korkyt Ata Kyzylorda University. Agricultural Sciences» are carried out in order to maintain a high scientific and theoretical level of publication and selection of the most valuable and relevant (perspective) scientific works.

The Expert Commission may reject the materials and require the author(s) to bring them in accordance with the requirements of the scientific articles.

In order to ensure the quality of published materials and respect for copyright, all received materials are checked for borrowing. The verification of the program is carried out by the responsible employee of the university - «root administrator of the system», and only then are sent for review.

The authors, who send their articles for publication in the journal «Bulletin of the Korkyt Ata Kyzylorda University. Agricultural Sciences», express their consent to the publication of the article, to the placement of metadata of the article (names, F.I. authors and places of their affiliation, annotations, keywords, bibliographic list) in public access to the journal's website on the Internet, to transmit the text of the article (including links, bibliographic information, etc.) to persons and organizations to whom the information is obligatory, or to others in order to allow citation of the publication and to increase the index of citation of authors and journal, and confirm that the submitted articles were not published in other journals or submitted for publication in other journals.

The editorial office keeps a record of the passing of manuscripts procedure of expert evaluation and review.

The author(s) of the article sends the material to the consideration of the expert commission established by the order of the Chairman of the Board-Rector of Korkyt

Ata Kyzylorda University. In turn, the expert commission checks the article for compliance with the rules of registration.

Expert opinion (to scientists whose scientific orientation corresponds to the content of the article) is given by any scientist in the approved expert commission. The expert opinion is a protocol (Annex 1) and an opinion of a member of the expert commission, written and signed in an arbitrary form and certified by the secretary of the organization (Annex 2).

After receiving the expert opinion, the author uploads (according to the instructions) through the site of the journal vestnik.korkyt.kz scientific article, written in three languages information about the authors, annotations, expert opinion of the article. The expert commission determines the compliance of the article on the profile of the journal, the requirements to the design.

The editorial board under the supervision of the chief editor checks the compliance to the scientific direction of the article submitted to the editorial office, and a decision is made on the acceptance or rejection of the article.

The responsible secretary checks the accepted articles in the program of antiplagiarism, after checking their compliance with the requirements specified in the technical design according to the instructions for authors. (The verification requirement in the program Antiplagiarism is fully described in the Rules of use of the system «Antiplagiarism».) The article, whose authenticity exceeds 80%, is sent for review.

The review procedure is carried out through the online submission and review system of articles, through «blind review» by a separate electronic site.

Reviewers are guided by the following rules:

- to work in full compliance with the editorial politics of the journal, taking into account the actual legal requirements regarding libel, copyright, legality and plagiarism;

- not to use unpublished materials obtained from submitted manuscripts for examination in personal research without written consent of the author;

- comply with review deadlines agreed with the responsible editors;

- notify the responsible editors and exclude yourself from the review process, feeling incompetent to review the research presented in the manuscript, or believing that a speedy review of the manuscript will be impossible.

- to consider any material received for review as a confidential document, not to disclose its contents and not to discuss with any persons other than responsible editors;

- to give an objective assessment of the materials submitted for review. Reviewers should express their opinion clearly and reasoned.

- to draw the attention of the editors-in-chief of the series to any significant similarities or coincidences between the manuscript in question and any other published work.

The review procedure includes the following steps:

1. The article is sent for review to the Doctor of Sciences, the Candidate of Sciences or PhD, whose scientific specialization is most close to the subject of the scientific article.

2. The review period may vary depending on the specific situation, but not more than 4 working weeks.

3. The reviewer cannot be the author or co-author of the peer-reviewed work, as well as the scientific supervisors of the candidate academic degree, PhD degree and employees of the department in which the author works. Reviews are discussed by the editorial board and serve as a basis for acceptance or rejection of manuscripts.

4. The review should objectively assess the scientific article and contain a comprehensive analysis of its scientific and methodical advantages and disadvantages. The review is based on the standard proposed revision (Annex 3, table on the site).

In the review should be briefly evaluated:

- general scientific level of work;

- the title and its correspondence to the content of the article;
- relevance of the topic;
- scientific novelty,
- the practical significance of the presented conclusions;
- work structure;
- debating and/or incorrect provisions;

- what exactly are the advantages or disadvantages of the article, what corrections and additions should be made by the author;

as well as the opinion of the reviewer about the possibility or impossibility of publishing the manuscript.

Copies of the content of the review shall be communicated to the author(s) within a week after the editorial office received the expert opinion.

The article sent to the author for revision must be returned in the corrected form within 10 days with the corrections marked in the article.

The editorial broad reserves the right to reject the articles in case of inability or unwillingness of the author to take into account the wishes of the editorial broad.

The originals of the reviews are kept in the editorial office of the journal «Bulletin of the Korkyt Ata Kyzylorda University. Agricultural Sciences», for three years. Including to be made available to competent authorities upon request.

5. Manual for authors of manuscripts

Ready scientific work for publication in the journal «Bulletin of Kyzylorda University named after Korkyt Ata. Agricultural Sciences» can be submitted by the author (authors) through the system of online submission of articles on the site vestnik.korkyt.kz, using special instructions. The article should be written in Word format in Windows 10 in Times New Roman font (an article not written in accordance with this requirement will not be accepted automatically). Language of publications Kazakh, Russian, English.

Presenting the text of the work for publication in the journal, the author guarantees the correctness of all information about himself, the absence of plagiarism and other forms of wrongful borrowing in manuscripts, the proper design of all borrowings of the text, tables, schemes, illustrations. The article should be presented experimental and documentary base, which served as the basis for the conducted research work, the possibility and importance of introducing the results of research into practical application, analysis of the current state of research, problems and specifics in comparison with earlier studies, the author(s) of the work should have scientific novelty and personal contribution to the development of the studied topic, the validity of conclusions, the relevance of the work.

The citation list in the article should contain only peer-reviewed literature sources, information sources that assign the DOI index according to the article structure.

The article pays special attention to the reliability of the information provided by the author (authors); correctness and accuracy of the definitions and conclusions used (introduced) by the author, compliance of the design of the article with standards or methodological recommendations, literacy, observance of style.

Structure and design of the article:

1. The size of the article ranges from 6 to 12 pages.

1. Description of the scheme of the article (page - A 4, book orientation, indents are calculated with respect to the left top and bottom sides page margins-2.5 m, with right - 2.0 m, Standard font : type - Times New Roman, size (font) - 12):

- the MRNTI index is the first line at the top left <u>http://grnti.ru/</u>.

- DOI index (provided by the editorial office);

- Title of article – with capital letters, alignment on the center in bold, size (font) 12.

Initials and last name of author(s) - alignment on the center in bold, size (font) - 11. (the number of authors should not exceed 5 people, 6 authors are allowed to the articles written within the framework of the project (for the authors of the project));

- The full name of the organization, city, country (if the authors work in different organizations, it is necessary to put the same number near the name of the author and the relevant organization, e-mail address and orchid number of the authors,) - alignment on the center, italic, size (font) - 11.

- Annotation in the original language (150-200 words; retaining the structure of the article) size (font) - 11.

- Keywords (in Kazakh, Russian, English from 5 to 8 words/phrases) size (font) - 11.

- Main text (12 font, line spacing - 1, indentation of red line#- 1.25 cm)

- Structure:

3) Introduction: rationale for the selection of the topic; relevance of the topic or problem; definition of the object, subject, objectives, tasks, methods, approaches, hypotheses and meanings of the work.

4) Research materials and methods: should consist of a description of the materials and the progress of work, as well as a full description of the methods used. This section describes how the problem was examined: detailed information without

repeating previously published established procedures; uses hardware (software) identification and material description, with mandatory novelty in the use of materials and methods. Tables, figures must be placed after mention.

Each illustration should be followed by an inscription (size (font) - 11). The drawings should be clear, clean, unscanned. Titles of figures and tables, bold 11 font. The indicators of the table are in type 11. The article numbers only those formulas that are referenced in the text. All abbreviations and abbreviations, with the exception of those that are obviously well-known, must be deciphered the first time they are mentioned in the text. In the text, links are displayed in square brackets.

Links must be strictly numbered in the text. The first reference to literature in the text must contain the number [1], the second - [2], etc. References to unpublished works are not allowed.

Links to unpublished works are not allowed. Links to non-peer-reviewed publications are not recommended.

5) Results/discussion: analysis and discussion of the findings of the study.

6) Conclusion/conclusions: synthesis and summary of the work at this stage; confirmation of the truth of the allegation made by the author. The conclusions should be used to summarize the results of the research in a scientific field, describing proposals or possibilities for further work. Information about financial support for the work must be indicated at the end of the article.

7) list of literature (size (font) - 11, the number of literature used is at least 15). The list of references is presented in two versions: the first - in the original language, the second - in Latin transliteration (<u>https://translit.ru/</u>), in Latin letters. The list of citations in the article should contain literature sources corresponding to the scientific direction of the article, with a DOI index (or URL) (sample appendix 4). The serial number of the literature is numbered in vertical brackets in accordance with the reference.

The style of design of the list of literature in Russian and Kazakh according to the requirements of GOST P 7.1. - 2003 Bibliographic record. Bibliographic description. General requirements and rules of compilation».

They are also required if the journal is provided with scientific reviews, notes from scientists.

The authors are responsible for the absence of spelling and syntax errors in the manuscripts and full compliance with technical design requirements. The article, which does not meet the technical requirements of the design, is returned to the author for revision.

If scientific reviews and articles are submitted to the journal by scientists, they are also subject to registration requirements.

8) information about the authors: (must contain the full name of the author(s), full name of the organization, city, country, contact details: phone, email, Orcid ID) in 3 languages. If the author does not have an Orcid ID, you must register with the Orcid ID at the link: <u>https://orcid.org/</u>.

9. The submitted article will be passed through the Anti-Plagiarism program only if it is prepared in accordance with the requirements. Articles with more than 80% originality will be sent to the editor for review. And an article below 80% is sent to the author for revision. And, in the case of the second time, it will not be accepted for publication if there is no corresponding indicator. Cost of the first test of the article on originality in the program

Antiplagiarism - 1500 tg, when re-checking the same article - 1000 tg). After a positive review, the article is accepted for publication in the journal and the author is sent a notice of payment. The author must send the receipt of payment to the Editorial Office (<u>khabarshy@korkyt.kz</u>).

Cost of the article: One sheet of articles from the journal «Bulletin of Kyzylorda University named after Korkyt Ata. Agricultural Sciences» for individuals for 5000 tenge, for legal entities - 6000 tenge without VAT.

Articles are accepted to the journal throughout the year. However, when 30 articles are reached for the next issue, the acceptance of new articles in the current issue of the journal stops. The next article received by the editorial office is completed in a folder for the next issue of the journal in chronological order. The editorial Board begins to review, verify and interact with the authors of the submitted articles only after the current issue is published. If the article is rejected by the reviewers, the first article is replaced from the folder prepared for the next issue of the journal. Thus, the chronological order of publications is preserved.

The editorial board of the journal provides 3 days for each author to review their articles before publishing the latest version of the PDF version on the website of the University "Bulletin of the Korkyt Ata Kyzylorda University. "Agricultural Sciences" https://vestnik.korkyt.kz/auil-warua/ and on the Crossref website <u>https://crossref.org</u> The final version of the journal will be published on the website after accepting the authors' reviews, responses, etc. The authors' notifications are not accepted and the editorial board is not responsible for subsequent identified errors.

Payment details

University address: 120014, Republic of Kazakhstan, Kyzylorda, Aiteke bi st., 29a. Ministry of Science and Higher Education of the Republic of Kazakhstan JNSC Korkyt Ata Kyzylorda University JSC Halyk Bank of Kazakhstan. TIN 331000037638 BIN 960540000620 IIC KZ 276017201000000125 BIC HSBKKZKX bc-16 TTK-859 **INTRODUCED (DEVELOPED)** Head of the Editorial and Publishing Department

Alleis Abuova N.A. 30.1023 signature

AGREED:

Member of the board Vice-Rector for Research and International Relations

Buribayeva M.A.<u>30.10.2</u>3 signature

Chief editor

Generov K.A. <u>30.10.23</u>

Head of International Relations Department

Aug	_Almakhanova	G.	30.10.23	
signature	_		date	*

Annex 1

PROTOCOL №_____ dated "____" ____ 20____ expert commission meetings Korkyt Ata Kyzylorda University

Present:

Commission Chairman

Commission members

Commission Secretary

(scientific degree, full name)

(scientific degree, full name)

(scientific degree, full name)

We listened to the report of the expert ______ (academic degree, full name) about the article ______ (academic degree, full name of the author(s)) "_____" (name of the article), submitted for publication in the republican scientific and methodological journal «Bulletin of Kyzylorda University named after Korkyt Ata. Agricultural Sciences».

Questions, comments, objections, suggestions of experts: the material corresponds to the profile of the journal, the requirements for the design of manuscripts. This article does not contain information provided for in Article 12 of Chapter 3 of the current Law of the Republic of Kazakhstan "On State Secrets". The decision was made: the expert commission considers it possible to publish the article "_____" (name of the article) _____" (academic degree, full name of the author(s)) in the open press.

Commission Chairman (scientific degree, full name)

Commission member (scientific degree, full name) (signature)

(signature)

Commission member (scientific degree, full name)

(signature)

Commission Secretary (scientific degree, full name)

(signature)

Author (s)

(surname and initials of the author (s)

(article title)

to the article written on the subject **EXPERT OPINION**

The expert commission, having considered the article "_____ The article should contain brief information about the content, scientific novelty, research materials and methods, research results and analysis indicators.

Reviewer:

signature:

Secretary:

reviewing the article submitted to the journal «Bulletin of Kyzylorda University named after Korkyt Ata. Agricultural Sciences»

REVIEW

Article title:	
Reviewer: Full name, academic degree and title, position	
Date:	

Content evaluation

Study object

	Formulated clearly and accurately
	Should be defined more clearly
	Not clear, should be reformulated
Revi	iewer's comment:

Theoretical foundations and explanations

The author expresses an original point of view
There are enough links to previous studies
Lack of links to other studies
The theoretical background is missing or unclear
Reviewer's comment:

Information and data provided

	New, original
	Expand and supplement already known information
	Repeat already known information
	Obscure
Revi	ewer's comment:

Research method

Well grounded and consistent	
Insufficiently substantiated, should be reconsidered	
Method unclear	
Not required for this kind of work	
Reviewer's comment:	

Problem solving and analysis of results

1.00		
	Very well grounded	
	Reasonable enough	

	Poorly grounded, should be revisited
	Not clear and / or too abstract
	Descriptive work
Revi	iewer's comment:

Evaluation form

Nam	Name	
	Clear and precise	
	Should be revised	
Revi	ewer's comment:	

Language style

	A great
	Free enough
	Understandable
	Hard to understand
Revi	ewer's comment:

Tables, graphs, etc.

	Acceptable
	Should be revised
	Missing / not required
Revi	iewer's comment:

List of used literature

	Acceptable				
	Should be edited				
Reviewer's comment:					

Annotation

	Acceptable				
	Should be edited				
	Should be revised				
Reviewer's comment:					

Conclusions

Publish as provided	
Accept with minor changes	
Accept with significant changes	
Reject as it stands, but with the possibility of re-filing	
Reject without the possibility of re-filing	

Reviewer's comment:

IRSTI 68.01.

https://doi.org/10.52081/bkaku.2023.v65.i2.044

IDENTIFICATION OF VIRAL INFECTION AND STUDY OF THE POTATO BREEDING MATERIAL RESISTENCE TO FUSARIUM DRY ROT

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Annotation. Potato suffers from severe viral and fungal pathogens infection in the process of production. Identification of pathogen resistance germplasm is of great significance in the breeding program. This study presents the results of tubers of foreign potato breeding lines for virus transmissionand subsequent artificial infection with the causative agent of dry *fusarium* rot. Potato viruses.....

Keywords: potato, viral diseases, dry fusarium rot, F. oxysporum, resistance

Introduction. Potato is very flexible, widespread and one of the most important agricultural crops to ensure food security in most countries of the world. The yield of potato largely depends on the resistance of varieties to fungal, viral, and bacterial diseases [1, 2].

Materials and methods. In accordance with the manufacturer's instructions, samples were considered infected if their optical density was three times higher than that of the negative control.

Results and discussions. Thirty-eight potato breeding lineswere tested for the presence of PVY, PVM, PVX, and PVS at AF "GreenStar" LLP in the Akmola region during three tuberous reproductions (Table 1).

Table 1 – Results of evaluation of potato breeding lines affected by the main viruses using DAS-ELISA method (samples - tuberous sprouts)

Nº S/N	Sample name	Sample Number	ΡVΧ	Ao/Ok	Elisa result	ΡVΥ	Ao/Ok	ELISA result	SVq	Ao/Ok	ELISA result	PVM	Ao/Ok	ELISA result	Selection result, culled / selected
1	17250-10	1	0,312	3,7	+	0,221	3,0	+	0,195	2,9	-	0,258	3,9	+	culled
2	17 228-7	2	0,136	1,2	-	0,135	1,5	-	0,136	1,7	-	0,165	2,2	-	selected

Conclusions. In this study, virus-free materials of 18 lines and 1 potato variety were selected in the third tuberous generation of potato breeding lines grown in the conditions of the Tselinograd district of the Akmola region.

References:

[1] Loebenstein, G., Manadilova A., Virus -like Diseases of Major Crops in Developing Countries.-Dordrecht: Springer, 2003. – P.195

КАРТОПТЫҢ СЕЛЕКЦИЯЛЫҚ МАТЕРИАЛДАРЫН ФУЗАРИОЗДЫ ШІРІГІНЕ ТӨЗІМДІЛІГІН БАҒАЛАУ ЖӘНЕ ВИРУСТАРҒА ИДЕНТИФИКАЦИЯЛАУ

Хасанов В.Т.¹, биология ғылымдарының кандидаты, профессор Әжімахан М.Ә.¹, докторант Тулеева А.К.², ауыл шаруашылығы ғылымдарының кандидаты, доцент **Hu Baigeng.³**, инженерия ғылымдарының докторы **Zhang Zhikai.³**, агрономия докторы **Dianqiu L.V.³**, ауыл шаруашылық ғылымдарының магистрі

¹С.Сейфуллин атындағы Қазақ агротехникалық университет, Астана қ, Қазақстан ²«Қазгер» ЖШС, Ақмола облысы, Қазақстан ³Leling Xisen Potato Industry Group Company Ltd, Лелин, Қытай Халық Республикасы Оңтүстік-Батыс университеті Чунцин, Қытай Халық Республикасы

Аңдатпа. Мақалада картоптың шетелдік линияларын вирусқа ИФТ (das-ELISA) әдісімен зерттелетін үлгілерде картоптың Х-, Ү-, S - және М-вирустарына тексеру жұмыстары жүргізіліп, анықталды. Ақмола облысының Целиноград ауданы жағдайында өсірілген ҚХР линияларының үшінші түйнекті ұрпағы жеке вирустармен: МВК және ХВК және олардың кешендері, соның ішінде МВК, ҮВК, ХВК және SBK. залалданған. Картоптың тұқымдық материалы негізінен МВК (48,6%) және ҮВК (21,6%) вирустарын жұқтырғаны анықталды..

Тірек сөздер: картоп, вирустық аурулар, құрғақ фузариум шірігі, *F. oxysporum*, микроскопиялық талдау, ИФТ ПТР, төзімділік

ИДЕНТИФИКАЦИЯ ВИРУСНОЙ ИНФЕКЦИИ И ИЗУЧЕНИЕ УСТОЙЧИВОСТИ СЕЛЕКЦИОННОГО МАТЕРИАЛА КАРТОФЕЛЯ К СУХОЙ ФУЗАРИОЗНОЙ ГНИЛИ

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Аннотация. В статье представлены результаты анализа клубней зарубежных селекционных линий картофеля на вирусоносительство и последующего искусственного заражения возбудителем сухой фузариозной гнили. В исследуемых образцах методом ИФА (DAS-ELISA) были идентифицированы Х-, У-, S- и М-вирусы картофеля. Третье клубневое поколение линий КНР, выращиваемых в условиях Целиноградского района Акмолинской области было поражено

отдельными вирусами: МВК и ХВК и их комплексами, включающими МВК, YBK, XBK и SBK. Установлено, что селекционный материал картофеля в основном был инфицирован МВК (48,6%) и YBK (21,6%).

Ключевые слова. картофель, вирусные заболевания, сухая фузариозная гниль, *F. oxysporum*, микроскопический анализ, ИФА, ПЦР, устойчивость

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