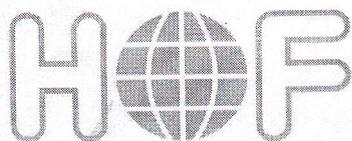


PROCEEDINGS OF THE UZBEK-JAPAN SYMPOSIUM ON ECOTECHNOLOGIES

INNOVATION FOR SUSTAINABILITY-HARMONIZING SCIENCE,
TECHNOLOGY AND ECONOMIC DEVELOPMENT WITH HUMAN AND
NATURAL ENVIRONMENT



HONDA FOUNDATION



THE COMMITTEE FOR COORDINATION OF SCIENCE
AND TECHNOLOGY DEVELOPMENT

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IV. AGRICULTURAL SCIENCES

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ASPECTS OF THE BIOLOGICAL PROTECTION METHOD OF COTTON PLANT FROM WILT DISEASE IN THE REPUBLIC OF UZBEKISTAN

Nigora Tillyahadjayeva, Researcher.

Abstract

The work introduces the results of implementation biological method of protection from fitopathogen diseases arousing cotton plant wilt with the help of Trichodermin bio control created on the base aborigine strain fungi-antagonist *Trichoderma viride* separated from the soil of Uzbekistan. By the researches during the analyses conducted 2010-2012 years on the seeds and plants of cotton, Bukhara – 8 sort showed immune stimulating and protecting features of this fungi. There have been held experiments on the lysimetric plot of UzSRIPP, at the strongly damaged vessels with wilt and salinized soil brought from Bukhara region. During its implementation period identified the damage level of plants with the disease and effective implementation of ecological pure bio antagonist Trichodermin. Conducted mycological analyses of seeds and cotton plants for identification pathogen level.

Аннотация

В работе представлены результаты применения биологического метода защиты от фитопатогенных заболеваний вызывающих wilt хлопчатника при помощи биопрепарата Триходермин созданного на основе местного штамма гриба-антагониста *Trichoderma viride* выделенного из почв Узбекистана. Исследователями в период 2010-2012 годов на семенах и растениях хлопчатника, сорта Бухара-8, были определены иммуностимулирующие и защитные свойства этого гриба. Проводились опыты на лизиметрической площадке УзНИИЗР, в сосудах на сильно зараженных wiltом и засоленных почвах привезённых из Бухарской области. В период их проведения определялась поражаемость растений заболеванием и эффективность применения экологически чистого биопрепарата Триходермин. Проводилась микологическая экспертиза семян и растений хлопчатника по определению патогенна.

Аннотация

Ушбу илмий ишда Ўзбекистон тупроғидан ажратиб олинган *Trichoderma viride* антагонист-замбуруғ асосида тайёрланган Триходермин биопрепаратини ғўзанинг wilt кеасаллигини кўзғатувчи фитопатогенларига қарши биологик курашда қўллаш натижалари келтирилган. 2010-2012 й. мобайнида тадқиқотчилар томонидан бу замбуруғнинг Бухоро-8 навли ғўзанинг чигити ва ўсимлигида касалликка қарши иммуностимуляторлик ва химоялаш хусусияти аниқланган. Тадқиқотлар ЎЎҲҚИТИ (Ўзбекистон Ўсимликларни химоя қилиш ИТИ) лизиметрик тадқиқот майдончаларида, сунъий зарарланган сосудларда ва Бухоро вилоятидан келтирилган шўр тупроқларда ўтказилган. Тадқиқотлар давомида ўсимликни касаллик билан зарарланиши, ҳамда экологик тоза Триходермин биопрепаратининг самарадорлиги аниқланган. Ғўза чигити ва ўсимлигининг микологик экспертиза тахлили ўтказилган.

Introduction

Long time implementation of chemical elements affected on the structure of the soil, brought to worsening of micro biological processes, which are happen under the action of ground micro organisms. Regeneration of soil fertility, decreasing the chemical influence on environment and at the same time receiving high yield is possible within the ecological pure biological method of disease control.

Some countries (Germany, England) completely refused implementing chemical protection of plants in a huge agricultural lands or at least stopped considerable excellence over bio method (Fokin, 2010).

For the last years observed the increasing agricultural crop damage with fusarium wilt. In the soil-climatic condition of Uzbekistan cotton plant affected by widely spread and harmful disease called by pathogen fungi from the family *Fusarium*. It damages plant from its early vegetation.

Plants affected in seedling stage and before the formation of 4-6 leaves, shed their leaves and die. Plants, sick in the phase of budding and flowering, usually perish, and only some of them get sick during the growing season and die in the autumn. Boxes on these plants do not form a stalk their dark and looks like blackened. With the defeat of *Fusarium* in the cotyledons, and then on the first leaves appear brown spots and reticulation on veins. In this form of the disease develops and to 4-6 true leaves.

From budding phase of plants are relatively resistant to *Fusarium*, but later re-amplified disease can cause death of adult plants. Pathogens overwinter in infected post-harvest residues and the soil, often in the form of mycelia, conidia, chlamydozoospores and microsclerotia very persistent and able to protect for several years. Pathogenic fungi penetrate the roots of young plants into the vascular system, causing blockage of vessels and produce toxins, causing the plant wilt.

The suppression of *Fusarium* is very important improvement of the soil, enriching its antagonistic microorganisms that suppress the growth of *Fusarium*. In world practice, this applies fungi - antagonists of the genus *Trichoderma*.

In Uzbekistan, the mushrooms of this genus are found in nature in different types of soils. Decomposing organic debris, they contribute to the formation of a solid structure and improve soil fertility, increase the supply of plant roots. Fungi of the genus *Trichoderma*, producing antibiotics possess antagonistic activity against phytopathogenic fungi and many bacteria. In recent years, Research Institute of Plant Protection conducts work aimed at combating these particularly harmful diseases, the use of a dedicated new aboriginal strain-antagonist fungus *Trichoderma viride* in the form of biological preparation of *Trichoderma*.

Modern range Chemical fertilizers as Nadykta notes VD (2004), includes a comprehensive list of drugs and allows highly effective protection of crops from the most dangerous plant pathogens.

Materials and methods

All this led us to study the antagonist fungus *Trichoderma*, a biologically active agent to clean the biological control of pathogens.

Designed in the Uzbek Scientific Research Institute of Plant Protection in the 80s in the late twentieth century, Professor AH Khakimov methods for the preparation of *Trichoderma* based on oats.

In 2010, we could separate from local soil aboriginal strain-antagonist fungus *Trichoderma viride*, have shown good results in the control against *verticilliose* and fusarium wilt, root rots at the same time stimulating plant growth.

During exposure to the biological preparation of *Trichoderma* fito pathogenic micro flora we studied the susceptibility of plants and its biological efficacy in pots. The venue of the research was lysimetric playground UzRIPP Tashkent region Kibray district.

During the research conducted phenological observations and laboratory tests.

Preparations for Research were selected from the "List of agrochemicals and pesticides for use in agriculture of the Republic of Uzbekistan", ed. State Chemical Commission, Tashkent, 2010 Setting and conducting experiments with drugs corresponded to "Methodical instructions ...", issued by State Chemical Commission (1994 and 2004 years).

During the phenological observations of plant growth and development, soil studies used "Methods of field and greenhouse experiments with cotton under irrigation," Belousov M. et al., (1961), "Methods of conducting field practices" Nurmatov S. et al., (2007). Calculation of biological efficacy was performed by Abbot formula providing for the amendment to the control.

To study the soil micro flora, determine the species composition and the degree of activity of pathogens was performed by the method of determination V.I.Bilaya (1973). From the grown colonies of fungi were determined mono spore separated by Kirai, Clement method et al. (1974).

Samples of diseased plants (roots, leaves, stems), sterilized and grown under laboratory conditions procedures were taken by B.O. Hasanov, L.A.Gluhova (1992), followed by technique of S. Boot (1971) performed mycological expertise.

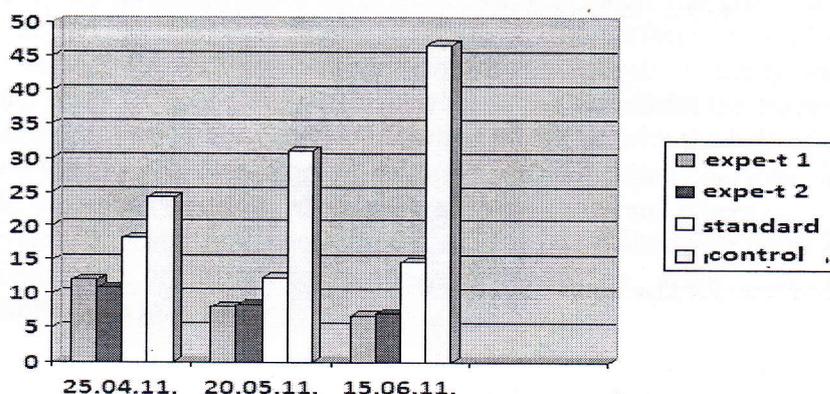
Layout of the experiment include itself four variants:

1. control without treatment
2. Standart — vitavaks, 200 FF bsk
3. Trichodermin — for soaking seeds (1st experiment)
4. Trichodermin — seed soaking + soil cultivation with sypensis (2nd experiment)

Results and their discussion

On the picture 1 there is presented the affection of cotton wilt disease in the vases in lysimetric square.

Picture 1. Cotton wilt affection (in %)

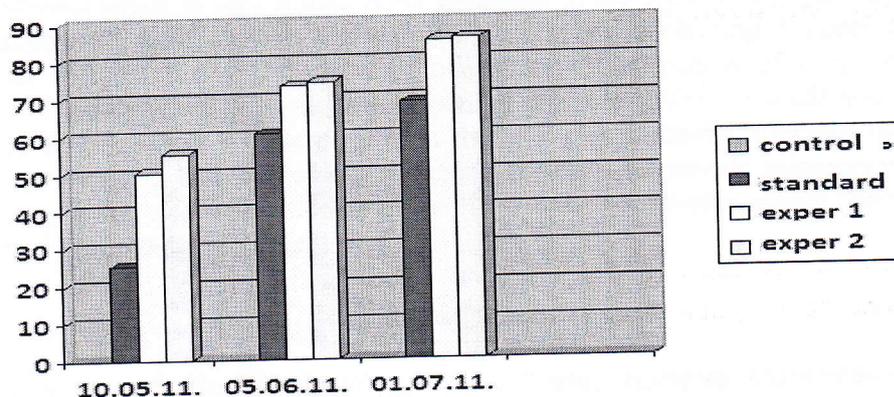


Apparently, in the picture 1, it is clear by information of 25.04.11. the most wilt affected zone was tasted variant where it reached 24.2%. Standard variant where was used as a protection remedy Vitavaks 200 FF air-dry component was affected 18.1%. Bio-preparation which is applied in the seed soaking in the primary period of vegetation of the plants showed the affection in 12.0%. The usage of the bio-preparation trichodermin in soaking and further treatment of plants and soil in the phase 3-4 real leaves gave 10.8%. Subsequent monitoring of the wilt affected plants which were carried out on 20.05.2011 showed the stable growth of the affection of the tested plants and increasing the plants' condition comparatively in the 2nd experiment than 1st one. Standard variant affected more than usual. In the last monitoring time on 15.06.11. the plants' wilt affection reached 46.7% and at the same time the standard variant accomplished 14.6%. The best indicators during the whole monitoring were on the 2nd and 1st variants accordingly 6.7% and 7.0%.

In the 2nd picture there is shown the biological effectiveness of the trichodermin bio-preparation usage against cotton wilt in the vegetation vessels in the lysimetric square. It was defined due to disease increasing after 15 days. The findings in the results of registrations stably showed the best biological effectiveness of the bio-preparation, when was carried out

the soaking of seeds subsequently soil cultivation in the phase 3-4 real leaves. Standard variant by the indicators of the effectiveness lagged behind in its meanings in all periods of determination.

Picture 2. Biological effectiveness of the usage *Trichodermin* (in%)

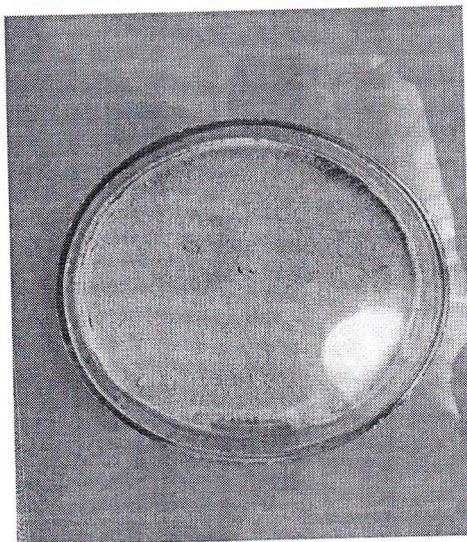


In the period of experiment cooperatively with the Institute of Genetics was carried out mycological examination of seeds and plants of cotton by pathogen determination which results were shown. It is visible here that in the cotton seed growing of the sort "Bukhara-8" which is taken after chemical dipping in the plant contaminated by pathogenic organisms *Fusarium* which evolves simultaneously with its development and exterminate germinates.

There is shown development of the present pathogen which was grown from the parts of sick plants in the agro- plate. During the growing the surface-sterilized parts of the samples were located to the surface of the agrarian means aseptically in the lysimetric square. From second and other following days of incubation in the thermostat the excrescence crops of pathogens isolated, cleaned from contaminates and identified with the help of determinates in a microscopic way by its morphological-cultural signs: mycelium character, its coloristic, colony's profile, topography and size of the generative structures and others.

In the picture 3. is shown the antagonistic activity of the aborigine fungi *Trichoderma viride* against pathogenic organism *Fusarium oxysporum* Schl.sp. *vasinfectum* (Atk.), where developing is limited due to pests.

Picture 3. The antagonistic activity *Trichoderma*



Summary

Summarizing all above mentioned points, the applying the biological methods of protection from phytopathogen disease which caused cotton wilt by the help of bio-preparation Trichodermin which was created on the basis of the aborigine stain fungi-antagonist *Trichoderma viride* is very actual. After treatment in the seeds and plants of cotton of the sort "Bukhara-8" were defined immune-stimulating and protecting features of the fungi. There was defined disease affection of plants and effectiveness of usage of the ecological clean bio-preparation Trichodermin. Mycological examination of seeds and plants of cotton showed the existence of this disease in them. We recommend applying the bio-preparation Trichodermin in soil improving, enriching it with antagonistic microorganisms, soaking seed and spraying plants of cotton in phase 3-4 real leaves simultaneously oppressing the development of fito-pathogenic agents.

References:

- Belousov M.A and others., "Methodology of field and vegetation experiments with cotton in irrigational conditions", Tashkent, 1961.
- Bilay V.I. "Methods of experimental mycology", Published "Naukova dumka", Kiev 1973.
- Booth C. Genus fusarium commonwealth Mycological institute Kew. Sirrey. England. 1971.
- Kiray Z., Klement z., Shoymoshi F., Zersh I. "Methods of phytopathology".- Moscow 1974, page 180.
- Nadikta V.D. Perspectives of biological protection from phytopathogenic microorganisms. // Protection and quarantine of the plants.-Moscov. -2004.-№ 6.- Page. 26-28.
- Nurmatov Sh, Mirzajonov K. and others., "The methods of carrying out field practices". Study book, Tashkent, 2007.
- "List of pesticides and agrochemicals for using in agriculture in the Republic of Uzbekistan", published in State chemical commission, Tashkent, 2010.
- Fokin A.B., "Biology of the plant protection—cycle process". Journal "Plant protection and quarantine", Moscow, 2010, №3, Page 25.
- Khasanov B.O., Glukhova L.A. "Methodical index of allocation of identifications disease agents and creating artificial background (helminthosporiosis) of barley"- Tashkent, published in "Fan", 1992.
- Khodjaev Sh.T. "Methodical indexes of insecticides and acarinosides experiments, biological activities and fungicides", State chemical commission of the Republic of Uzbekistan. – Tashkent. 1994.

WINTER HARDINESS OF VEGETATIVE PROPAGATING OF APPLE –TREES WEAKLY –GROWN STOCKS IN CONNECTION WITH PLANT'S TRANSITION OF DEEP DORMANCY PERIOD

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Abstract

It was selected from investigated types of vegetative propagating weakly –grown stocks of apple tree a group of dusens possessing by deeper and more enduring period of winter dormancy –M III, M IV, MM 104, correspondingly by high winter and cold resistance