

РЕЗИЮМЕТА

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шифър 04.01.05, професионално направление 6.1 „Растениевъдство“

1. Todorov M., S. Angelova, 2003. Problems and results of rice selection in Bulgaria. Comptes Rendus de L' academie Bulgare des Sciences, Sofia, Tome 56, №1, 71-74. **IF 0.28**

Abstract: A review on the problems of rice production and capacity of classic selection to solve them is made in the article. Results of implementation of chemical methods of selection, as a result of which specimens in the following directions are created: super early, high-lysine, of increased biological value of protein and resistant to fungus pathogens. The problem of productivity receives a new solution through creation of multispike stem.

Key words: *rice selection, rice production, super early, high-lysine*

2. Камишев К., С. Тошева, 2009. Нов хербицид в българските оризища, Научни трудове, т. LIV, “Екология, земеделие, животновъдство” – Агроеко 2009, Пловдив, Академично издателство на Аграрния университет, 197-202.

Abstract: In 2005 and 2006 year new herbicide – Nomine 400 SC was investigated. The experiments were carried out in the rice field with cultivar “Iskra”. It was established the new herbicide had more wide action on the different weeds then the standard. The influence of the variation factors on the yield also was determined. It was proved Nomine 400 SC was absolutely selective for the rice crop and its use will be a guarantee for excellent results in rice production.

Key words: *rice, weed, herbicide, Nomine 400 SC, yield, variation*

3. Камишев К., С. Тошева, 2013. Проучване на български сортове ориз по физиологични и технологични качества. Растениевъдни науки, №2, 50, 58-62.

Abstract: During the period 2010 – 2011 year 13 Bulgarian rice varieties were studied in comparison with controls Osmandzhik 97 and Krasnodarski 424. They were estimated by 15 physical and technological quality parameters. The control Osmandzhik 97 was characterized with the large part on brown rice (82.37%), followed by Pegi (82.27%) and Dunav (82.22%). The variety Zhana had the highest share milled rice non-chattered (57.33%) followed by Mariana (56.13%) and Osmandzhik 97 (54.10%). Zhana, Dunav and Milkana were characterized with highest total milled rice 70.58%; 70.20% and 69.28%, respectively. Variety Miziya was with the biggest 1000 grain mass (39.60 g) followed by Avalya (39.55 g) and Bogdan (38.40 g).

Key words: *Oryza sativa L., brown rice, milled rice non-chattered, milled rice total*

4. Камишев К., С. Тошева, 2013. Проучване на български сортове ориз по добив. Растениевъдни науки, №2, 50, 63-65.

Abstract: During the period of 2010 – 2011 year in IPGR “K. Malkov”, Sadovo the productivity possibilities of 13 Bulgarian rice varieties were estimated in comparison with the

controls - Osmandzhik 97, Krasnodarski 424 and average trial standard. They were also evaluated by lodging resistance and vegetative period. It was established the genotype had the prevailing influence (85.84%) on the yield variability. Proved highest yield showed IPGR Viki – 1130.75 kg/da, Avalya – 1100.25 kg/da and Iskra – 1080,25 kg/da. The exceeding toward the highest yielding standard Osmandzhik 97 was 21.36%, 18.08% and 15.94%, respectively. Avalya and Miziya combined high yield and short vegetative period. All high yielding Bulgarian varieties were characterized with very strong lodging resistance.

Key words: *Oryza sativa L., lodging resistance, vegetative period*

5.Тодоров М., С. Ангелова, Л. Василева, К. Кузмова, 2002. Четири български решения за оризопроизводството в отговор на вероятен воден дефицит на планетата. сп. "Екология и бъдеще", бр. 2-4, 52-54.

Abstract: The UN Framework Convention on Climate Change (UNFCCC) from 1992 is a signal for the seriousness of the problems that would face humanity in the coming decades, related to global warming and reduction in water resources. In addition to their physical and food-supply nature, these climate changes would lead to economic consequences in agriculture as a whole and in separate crops like rice, in particular, which is one of the most important crops providing food for the predominant part of world population.

In the light of these climate problems, the article gives some new solutions through the methods of rice breeding and agrotechnical practices.

The cultivation of the newly-developed Bulgarian extra-early rice cultivars (a vegetation period of less than 100 days) enables a 35% reduction in the water amount used in this branch.

The growing of rice cultivars with great number of spikes/stem, which are more effective in water utilization for the formation of unit production, enables the consumption of less water amounts.

The already developed new-type rice cultivars with hydrogen-respiration capacities are more economical in water use, more resistant to stress factors and provide a better quality of production.

A new rice farming system is suggested for the first time in our country, enabling the production of two harvests per year and full utilization of water residues in rice fields.

In the light of the already found solutions and the forthcoming problems to agriculture in our country, the authors suggest the creation of a specialized body to the Ministry of Agriculture and Forestry, authorized and funded to solve all research and practical issues of national importance, arisen in result of global climate change.

6.Тошева С., 2013. Морфологична и стопанска характеристика на български сортове ориз (*Oryza sativa L.*). Растениевъдни науки, №2, 50, 54-57.

Abstract: Thirteen Bulgarian rice varieties were estimated. It was made morphological and economical characterization. The rice gene pool was enriched with studied gene plasma which was appropriate for the intensification of breeding process. The developed Bulgarian rice varieties may use for standards in identification of new genotypes rice and to compose optimal variety structure conform to farmer production and economical conditions in the country.

Key words: *rice, Bulgarian varieties, breeding, characterization*

7.Тошева С., К. Камишев, 2013. Биохимична и фитопатологична характеристика на български и интродуцирани сортове ориз. Растениевъдни науки, №2, 50, 94-96.

Abstract: Four Bulgarian and five introduction rice varieties were investigated. It was analyzed the crude protein content and lysine one and biological value of protein. It was established the reaction of estimated varieties toward some pathogens of *Fusarium* spp. in conditions of natural and artificial inoculation.

The received results are important for the breeding resistant programs and development of new rice varieties with higher quality of the grain.

Key words: *rice, breeding, introduction, chemical traits, phytopathogens*

8. Тошева С., М. Витанова, К. Камишев, 2012. Проучване реакцията на генотипове ориз спрямо гъби от род *Fusarium*. Scientific Research of the Union of Scientists in Bulgaria – Plovdiv, series B. Natural Sciences and Humanities, vol.XIII, ISSN 1311-9192, International Conference of Young Scientists, 23-24 June 2011, Plovdiv, 184-187.

Abstract: The reaction of 15 genotypes – Bulgarian and introduced rice cultivars and breeding lines to seed-borne pathogens was investigated. The study was carried out in the conditions of natural infection and artificial inoculations background during 2008-2010 at Institute of Plant Genetic Resources “K. Malkov” – Sadovo. It was established that the highest aggressive were fungi of the species *F. moniliforme*. Under artificial inoculation Italian cultivar Carmen and Bulgarian – LM-BP and Miziya are characterized with the highest level of resistance to pathogens of the genus *Fusarium*. The last created cultivars in the Institute – Avalya and IPGR Viki also show good results.

Key words: *rice, Bulgarian and introduced variety, seed-born pathogens*

9. Тошева С., М. Събева, 2018. Съдържание на суров протеин и лизин в зърното на интродуцирани сортове ориз. Списание за наука „Ново знание”, Година VII, бр. 2, Април-Юни, 231-235.

Abstract: During the period 2015-2017 on the territory of the Institute of Vegetable Crops, Maritza, Plovdiv it was held a field trial. Five imported rice varieties, introduced into the Bulgarian production, have been tested. A biochemical assessment of grain quality was made. The Turkish variety Gala has the highest crude protein content in the grain, which is also accompanied by high lysine content. The studied Italian varieties (Brio, Linche, Kameo) are characterized by lower crude protein levels in the grain than the standard. With the highest concentration of lysine on average for the period is distinguished the variety Brio - 0.31%.

Key words: *rice, introduced varieties, crude protein, lysine*

10. Тошева С., П. Чавдаров, 2018. Реакция на интродуцирани сортове ориз към причинителя на фузариоза по метлицата. Списание за наука „Ново знание”, Година VII, бр. 2, Април-Юни, 237-240.

Abstract: During the period 2016-2017 it was studied the resistance of five rice introduced varieties to the causative agent of *Fusarium culmorum* to the panicle. The study was carried out on a permanent rice cell on an open field in the Institute of Vegetable Crops, Maritza, Plovdiv under field conditions and artificial infection. Immune varieties to the (*Fusarium culmorum*) agent to panicle in the rice genotypes have not been established. Resistance to the fungus have three varieties, and it is the highest in the Italian variety Luna. Least variation in the absolute mass of infected seeds and persistent type of infection is characterized by the Turkish variety Gala.

Key words: *rice, introduced varieties, Fusarium culmorum*

11. Todorov M., L. Vasileva, S. Angelova, 2003. Potassium fertilization of rice and some physical, biological and economic indices of production. Bulgarian Journal of Agricultural Science, Sofia, №9, 679-682.

Abstract: The investigation is carried out on alluvial-meadow soil near Plovdiv. In the background of fertilization with increasing rates nitrogen-phosphorus fertilization the effect of the potassium on formation of physical, biological yield and some economic indices of production are studied.

It was found that for the conditions of this kind of soil from the view point of physical yield the rice crop does not need potassium fertilization.

Using the increasing rates nitrogen-phosphorus fertilization has the ability for positive effect on the biological yield.

The potassium fertilization is related with decreased profitability of the rice production.

Key word: *physical and biological yield, biological value, profitability*

12. Tosheva S., M. Sabeva, 2017. Characteristics of productive and quality possibilities of introduced rice varieties grown under conditions of southern Bulgaria. Trakia Journal of Sciences, vol. 15, №2, 149-153.

Abstract: The study was conducted during the period 2013-2014. Three Turkish (Denep, Efe, Gala) and four Italian (Baldo, Creso, Roma, Puma) rice variety used in the country are explored. During the growing season it is applied the standard agrotechnics of rice cultivation in Bulgaria. The samples were evaluated on morphological, biochemical and economic qualities according to international descriptors: vegetation period, paddy yield, length of panicle, weight of a panicle, mass of 1000 grains, total number grains in panicle, empty grains, crude protein, lysine. The indicators that are characterizing the productivity of varieties vary significantly at greater extent than those with quality. There are established positive correlations between the total number of grains in a panicle of rice production ($r = 0.713$), the weight of a panicle ($r = 0.715$) and the number of empty grains ($r = 0.809$) and negative with crude protein contents ($r = -0.700$). Radiated are varieties to be included in breeding programs as sources of valuable economics signs.

Key words: *rice, varieties, yield, quality, correlations*

13. Дешева Г., С. Тошева, Е. Вълчинова, П. Чавдаров, 2017. Влияние на биологични продукти върху покълването при някои зърнено-житни култури. Сборник Юбилейна научна конференция с международно участие „135 години Земеделска наука в Садово и 40 години Институт по растителни генетични ресурси – Садово”, 29 и 30 май, Пловдив, 523-532.

Резюме: Целта на настоящото изследване е да се установи влиянието на биопродуктите (хуматните торове) - Лумбрекс и Хумустим върху кълнителната способност на семената и върху растежа на кълновете и корените при образци ръж, овес и ориз. В проучването са включени: 3 образца ориз – сортовете Османчик-97 и Крезо и линия №68, 3 сорта ръж - Хисар, Данае и АС-Rifle и 3 сорта голозърнест овес - Марина, Силистра и Мина. Установени са съществени различия по отношение на влиянието, което тестваните препарати оказват върху кълнителната способност и първоначален растеж при различните култури и образци. При третираните сортове ръж и овес ефектът на изпитваните препарати върху кълняемата енергия е по-силен отколкото ефекта им върху кълняемостта. При сортовете ориз – Османчик 97 и Крезо хуматните торове Хумустим и Лумбрекс не водят до повишаване на кълняемостта. Най-стимулиращ ефект върху дължината на кълна е установен при сорт Марина обработен с Хумустим. По отношение на дължината на корена при сорт Силистра и варианта с Лумбрекс, е отчетено 39,3 mm по-дълъг корен в сравнение с нетретираната проба. При

ръжта доказано стимулиращо въздействие върху дължината на корена е установено при сортовете Хисар и АС-Rifle, третирани с Лумбрекс. В групата на ориза, единствено само при сорт Османчик 97 е установено еднакво положително въздействие и на двата хуматни тора върху показателя дължина на корен. Доказано по-дълги кълнове от тези на контролата спрямо двата растежни регулатори са регистрирани при линия №68. Установено е влиянието на факторите: генотип, третиране на семената с растежни регулатори и взаимодействието по-между им върху фенотипната проява на признаците дължина на кълн и корен.

Ключови думи: зърнено-житни култури, биоторове, третиране на семената, кълняема енергия, кълняемост, дължина на кълн и корен

14. Тошева С., 2015. Най-разпространени плевели по ориза в Пловдивска област и мерки за борба с тях. Юбилейна научна конференция с международно участие "90 години Институт по земеделие – Карнобат", 3 – 4 юни, Карнобат.

Abstract: Study on weeds on the land of Saedinenie town, Tsalapitsa village, Radinovo village, Voysil village, Trud village, Rogosh village, Benkovski village, Razhevo Konare village and Belozem village was performed during the period 2010 – 2014. The investigated areas are with different soil, climatic conditions and level of agrotechnics. The most widespread weed species (*Echinochloa* spp., *Cyperus* spp., *Scirpus* spp., *Alisma* spp., *Setaria* spp., *Leersia oryzoides*, *Lemna minor* L., *Polygonum hidropiper* L., red rice) are described in this article and the methods for their control are explained. The list of the approved herbicides for control of the weeds in rice is given.

Key words: *Oryza sativa* L., weeds, measures for control, herbicides

15. Тошева С., Г. Дешева, П. Чавдаров, 2015. Посевни качества и фитосанитарно състояние на семена от български сортове ориз. Юбилейна научна конференция с международно участие "90 години Институт по земеделие – Карнобат", 3 – 4 юни, Карнобат.

Abstract: Three Bulgarian rice varieties were study regarding some sowing qualities and phytosanitary status of the seeds. The experiment was conducted in two variants – control and treatment with 3.0% hydrogen peroxide (H₂O₂). Variety Mizia was with the best sowing qualities among the studied varieties. A presence of fungi from genus *Fusarium*, *Alternaria*, *Penicillium* was established as a result of the phytopathological analyses. In strongly infestation of the seeds, the treatment with hydrogen peroxide gives a positive effect on the germination, while in seeds with smaller infestation this treatment has no significant effect on their germination.

Key words: rice, variety, sowing properties, seed-born pathogens

16. Тошева С., П. Чавдаров, 2016. Проучване устойчивостта на сортове и линии ориз към причинителя на Фузариоза по метлицата. Сборник на докладите от национална научно-техническа конференция с международно участие "Екология и здраве", Пловдив, 142-145.

Abstract: An increase of the host resistance is proven to be the most effective method for control of *Fusarium*. It is known that the search of new sources of resistance is the important task for the breeding programmes due to the fact that among the varieties applied in the production, the resistance is limited. In 2014 – 2015 the response of twelve introduced varieties and two Bulgarian rice lines to *Fusarium* blight in the panicle was studied (*Fusarium culmorum*, isolate Fc 4445).

It was established that the Italian variety Baldo is a carrier of the highest resistance at natural and artificial infestation with the pathogen. Weaker infestation by the agent of the Fusarium was also recorded in the accessions Linche, Puma and Efe, as the degree of infestation vary from low to moderate values (6.40 – 17.30%).

Key words: rice, varieties, Fusarium culmorum, resistance

17. **Тошева С., П. Чавдаров, Р. Чипилски, 2017.** Проучване действието на биотор „Лумбрекс“ върху морфологични признаци и продуктивни качества на ориза. Сборник Юбилейна научна конференция с международно участие „135 години Земеделска наука в Садово и 40 години Институт по растителни генетични ресурси – Садово“, 29 и 30 май, Пловдив, 540-546.

Резюме: Проучването е проведено през 2015-2016 г. в района на гр. Пловдив на алувиално-ливаден тип почва. Органичният тор “Лумбрекс“ е изпитан по време на вегетацията при 5 сорта ориз. Листното третиране с продукта предизвиква значително влияние върху морфологичното развитие на растенията. Височината на стъблото се понижава, увеличава се дължината на метлицата и размерите на флаговия лист (дължина-ширина). Установено е положително влияние върху добива и неговите структурни елементи. Реакцията на генотиповете е еднопосочна, но се изразява в различна степен. Най-добър ефект е установен при сортовете Пума, Крезо и Османчик 97.

Ключови думи: ориз, биологичен продукт, добив, морфологични признаци

18. **Тошева С., И. Тороманова, Т. Георгиева, 2017.** Сравнително изпитване на интродуцирани сортове ориз при условията на Централна Южна България. Сборник Юбилейна научна конференция с международно участие „135 години Земеделска наука в Садово и 40 години Институт по растителни генетични ресурси – Садово“, 29 и 30 май, Пловдив, 568-575.

Резюме: Проучването е проведено през периода 2013-2015 г. Изведен е конкурсен опит с турски (Османчик 97, Гала) и италиански (Камео, Пума, Линче, Брио) сортове ориз в два пункта: ИЗК „Марица“ – гр. Пловдив и землището на гр. Съединение. Проследени са показателите: вегетационен период, добив арпа, дължина на метлицата и маса на 1000 зърна. Получени са различни стойности за изследваните признаци, в резултат на сортовата специфика, годината и района на отглеждане. Проучваните сортове се характеризират със средно ран вегетационен период и са подходящи за района на Централна Южна България. Най-ранозрял е италианският сорт Пума. Сорт Камео е с повишена адаптивност към условията на отглеждане у нас. Характеризира се като най-високопродуктивен, с дълга метлица и едро зърно, което е статистически добре доказано.

Ключови думи: ориз, интродуцирани сортове, добив

19. **Kamishev K.N., Sv. Tosheva, 2011.** Характеристика генотипов италианското и българското риса по важни хозяйствени признаци. Аграрна наука – Сельскохозяйственному производству Сибири, Монголии, Казахстана и Болгарии, Материали XIV международной научно-практической конференции, Часть 1, Земеделие, растениеводство, селекция и экология, 5-7.

Резюме: Восемнадцать сортов и селекционных линии риса изучены по признакам урожайности, скороспелности и устойчивости к полеганию в Институте растительных генетических ресурсов им. Константина Малкова, Садово, Болгария, за период 2008 – 2010 г. Восем из них, произхождением из Италии и других стран, созданы в институте.

В качестве стандарта по урожайности использовался сорт Краснодарский 424, а по скороспелости – сорт Белозем. Произведена также оценка источников изменчивости на урожайность.

Новый болгарский сорт IPGR Dani показал самую высокую продуктивность и превосходить Краснодарский 424 на 26.02%. Болгарская селекционная линия 132 соединяет в себе высокую урожайность (855 кг/период) и короткий вегетационный период (121 день).

20. **Tosheva S., K. Kamishev, 2009.** “Avalya” – New Bulgarian rice variety, Proceedings of Third International Symposium „Ecological Approaches towards the Production of Safety Food”, Plovdiv, pp. 293-296.

Abstract: A new Bulgarian rice variety “Avalya” is studied. The characters of the variety make it perspective on economic and biologic point of view: exceed the standard by paddy yield with 64%, high grain quality, high fertilization rates are no necessary to be applied, resistant to lodging of crop and economically important diseases. It is appropriate for variety structure improvement in the Bulgarian rice production, for food and flavour industry and it is a valuable genetic material for the breeding in solving the problems for produce yield and quality.

21. **Ангелова С., М. Тодоров, Л. Василева, 2002.** Възможности за отглеждане на интродуцирани сортове ориз в България. I. Съобщение. Продуктивност и разход на хранителни елементи за формирането ѝ, икономическа ефективност. Научни доклади “120 години земеделска наука в Садово”, том. II, 80-83.

Abstract: Possibilities for growing of the following introduced rice varieties in Bulgaria: 1)Krasnodarsky-424 (St), 2)Alfa, 3)F-38, 4)Cat. №629, 5)Cat. №628, 6)Ukraine-5, 7)Prometeo, 8)Safari, 9)Krasnodarsky-86, 10)Artiglio, 11)Selenio, 12)Jonesiro.

It was found that variety Ukrain-5 has best adaptive abilities. It is the earliest, assuring average yield up to 1068 kg per decare and excels the standard with 18.5% (167.3 kg).

The particular varieties has different ability for utilization of basic nutritive elements. Ukraine-5 has the lowest consumption of N, P,K, Zn, Fe for formation of 100 kg unshelled rice and the respective amount vegetative mass. Variety Artiglio apart from the first three elements has increased consumption of Cu, Zn, Mn. All varieties assure economically favorable production but the highest norm of profitability has the production of Ukraine-5 (186%), followed by Selenio (174%) and Krasnodarsky-86 (170%).

22. **Василева Л., М. Тодоров, С. Ангелова, 2004.** Предпосевно третиране на семената с биорегулатори и ефективност на царевичното производство. II. Съобщение. Икономическа ефективност на производството. Сборник доклади „Семепроизводство, селекция и семеконтрол за качествен посевен материал”, София, 71-77.

Abstract: This study seeks solutions to overcome some harmful trends in economic indices of production occurring in conditions of increased norms of mineral fertilization.

It was found that tested biodynes are suitable means for avoiding these unfavorable effects.

Applied together with optimal fertilization they increase the gross production and gross income. The increase the gross revenue up to 19.4%, decrease the production prime cost up to 10% and increase the profitability of the crop production up to 118%.

23.Тодоров М., С. Ангелова, 2002. Възможности за отглеждане на интродуцирани сортове ориз в България. II. Съобщение. Химичен състав и качество на продукцията. Научни доклади “120 години земеделска наука в Садово”, том. II, 84-88.

Abstract: On the grounds of the commonly accepted agricultural techniques in the country a study on the chemical composition and quality of the following introduced rice varieties is carried out: 1)Krasnodarsky-424 (St), 2)Alfa, 3)F-38, 4)Cat. №629, 5)Cat. №628, 6)Ukraine-5, 7)Prometeo, 8)Safari, 9)Krasnodarsky-86, 10)Artiglio, 11)Selenio, 12)Jonesiro.

It was found that the studied varieties show ability to increase the contents of K, P, N, Mn, Fe in the grain and to decrease the contents of Cu. Only varieties Safari and Artiglio show the ability to increase the contents of Sr.

Despite the specificity in the amino-acid contents at most of the varieties the trend for increasing the contents of phenylalanine in the protein and decreasing that of arginine, methionine, leucine and tyrosine.

Variety Alfa is distinguished for the highest value of protein.

Maximums of contents of raw protein and biological value of the studied varieties do not coincide.

24.Тодоров М., Л. Василева, С. Ангелова, 2003. ЛМ-БП – Нов сорт ориз с повишена биологична стойност на продукцията. Национална конференция, Сборник доклади “Селекция и семепроизводство при земеделските култури”, София, 37-41.

Abstract: It is known that the increase of yield and its protein contents the biological value of the rice production decreases. Nowadays intensive research work is done to overcome this phenomenon. Our contribution in this field is the creation of the new Bulgarian rice variety – LM-BP.

The variety is created by the method of cross-variety hybridization through cross of Italian variety Alfa and Romanian one – F-38. Depending on the level of nutritive mode and climate conditions its vegetation period is 125 – 130 days. Its stem is 80 cm high, width in the joint is 6.5 – 7 mm and it does not lodge. Leaves are wide, dark, green colored. Length of spike is up to 22.5 cm. It is of medial type well expressed, bent down and with average number of grains – 181. Seeds have absolute mass of 31.4 g and hectoliter mass is 59.1 kg.

This variety provides stable yield of 800-870 kg of rough rice per decare and the productivity exceeds the standard with 46.9% at average. Lysine contents is 8.3% higher in the grain and 28.1% higher in the protein which results in 27.1% higher biological value of production.

Besides the positive correlation between the productivity and quality the new rice variety possesses 34% higher resistance to fungal pathogens.

25.Тодоров М., С. Ангелова, Л. Василева, 2004. Предпосевно третиране на семената с биорегулатори и ефективност на царевичното производство. I. Съобщение. Добив и качество на продукцията. Сборник доклади „Семепроизводство, селекция и семеконтрол за качествен посевен материал”, София, 65-70.

Abstract: The possibility for pre-sowing treatment of seeds with biodynes on dark gray forest soil and fertilization with 120 kg nitrogen, 60 kg P₂O₅ and 60 kg K₂O per ha to find out the effect on physical and biological yield of corn.

It was found that these means increase the two kind of yields as well as the biological yield of production. The increase of effectiveness of nutritive elements is obtained due to used fertilizers.

26.Тодоров М., Л. Василева, С. Ангелова, 2004. Проучване възможностите за повишаване ефективността на минералното торене при люцерната чрез използване на биорегулатори. I.Съобщение. Добив и качество на продукцията. Сборник доклади „Екология и здраве 2004”, Пловдив, 157-162.

Abstract: The possibility of use of some bio-regulators with lucerne through their implementation for pre-seed treatment of seeds.

It was found that bio-regulators effect positively the physical, biological and energetic yield of lucerne increasing them up to 27.5%, 35.7% and 27.3% at average.

The highest biological value of production assures C-50. As a result of its influence the effectiveness of fertilization with nitrogen and phosphorus increases up to 27.4%

27.Тодоров М., Л. Василева, С. Ангелова, 2004. Проучване възможностите за повишаване ефективността на минералното торене при люцерната чрез използване на биорегулатори. II.Съобщение. Икономическа ефективност на производството. Сборник доклади „Екология и здраве 2004”, Пловдив, 119-124.

Abstract: The possibility of use of some bio-regulators with pre-seed treatment of lucerne seeds. It was found that these means are a sure way for increase of economic effectiveness of the lucerne production.

As a result of its influence the gross production could raise up to 28% and the gross income up to 33%, the prime costs could decrease up to 16% and the gross profit – up to 34%.

They assure higher norm of profitability of the lucerne production up to 24% and improve the effectiveness of fertilization.

28.Методично ръководство: Стаматов С., С. Тошева, 2017. Възможности за използване на хетерозисната селекция при самоопрашващите се култури фъстъци (*Arachis hipogaeae* L.), сусам (*Sesamum indicum* L.) и ориз (*Oryza sativa* L.), 52 стр.

Резюме: В ръководството са разгледани някои общи въпроси за хетерозиса и теориите за обяснението му. Засегнати са селекционно-семепроизводни аспекти по този въпрос при културите фъстъци, сусам и ориз в световен мащаб. Разгледани са 12 български хибридни комбинации при тези култури. Третираны са общовалидни явления при анализа на хетерозиса, които могат да бъдат използвани с успех във всяка конкретна хибридна комбинация и при други култури.

Представен е електронен вариант за математическа обработка на информацията получена от родителите и потомствата, разработена от авторите.