IQRO JURNALI / 2023
GUVOHNOMA № 060680
E-ISSN : 2181-4341

VOL–2, ISSUE–1
https://wordlyknowledge.uz/

FITOPATOGENLARGA QARSHI BAKTERIYALARDAN FOYDALANISH VA ULARNING SAMARADORLIGINI BAHOLASH

Shodiyeva Dildora G`iyosovna,

Bobaqandova Mexriniso Fazliddinovna

SamDTU Mikrobiologiya, immunologiya va virusologiya kafedrasi assistentlari

Shayqulov Hamza Shodiyevich

SamDTU Mikrobiologiya, immunologiya va virusologiya kafedrasi katta o`qituvchisi

Annotatsiya: Zamburug'li patogenlar atrof-muhitdagi o'simliklar dinamikasining muhim omilidir. Bu patogenlar o'simliklarning o'limiga olib kelishi mumkin va tuproqdagi dastlabki zichlik past bo'lsa ham, vaqti-vaqti bilan ekinlarda hosilni yo'qotadi. Ushbu tadqiqotning maqsadi tanlash va baholash edi zamburug'li antagonistik bakteriyalar va ularning soya ko'chatlarida biologik nazorat qilish qobiliyatini aniqlash. dan jami 877 shtammlari Pseudomonas, Bacillus va Paraburkholderia/Burkholderia avlodlari va ularning zamburug'larga antagonistik ta'siri tekshirildi. Urug'larda tez-tez topilganlar to'rtta usul yordamida baholandi: to'rt marta qoplama, juftlashgan madaniyat qarama-qarshiligi, shtammni ushlab turish, va soya urug'ini ekish. Eksperimental dizayn butunlay tasodifiy bo'lib, dastlabki uchtasi uchun uchta takrorlash bilan usullari va to'rtinchi davolash uchun 3 × 9 faktorial sxemada besh replikatsiya. Eng yuqori biotexnologik shtammlar Soya urug'iga unib chiqqanda bu ekinga hujum qiladigan zamburug'larning biologik nazoratini baholash uchun potentsial emlangan. Etmish to'qqizta shtamm sinovdan o'tgan qo'ziqorinlarga qandaydir antagonistik ta'sir ko'rsatdi, ikkita shtamm esa kengroq ta'sir ko'rsatdi. urug 'testidagi antagonistik ta'sir spektri. Antagonistik potentsialga qo'shimcha ravishda, BR 10788 va BR 11793 shtammlari, qachon bir vaqtning o'zida yoki yolg'iz emlangan, fide quruq moddalar massasini sezilarli darajada oshirdi va soya o'sishini rag'batlantirdi. ko'chatlar ko'pchilik zamburug'lar mavjudligida ham. Shunday qilib, ushbu tadqiqot ularning antagonistik faoliyati samaradorligini ko'rsatdi biologik nazorat uchun potentsial agentlar ekanligi isbotlangan maqsadli qo'ziqorinlarga nisbatan shtammlar.

Kalit so`zlar: Pseudomonas, Bacillus, Paraburkholderia/Burkholderia, Colletotrichum kiradi spp., Fusarium spp., Aspergillus spp., Cercospora spp.,Penicillium sp., Alternaria spp., Cladosporium sp.

Kirish

Zamburug'li patogenlar qishloq xo'jaligi sharoitida o'simliklar populyatsiyasining dinamikasini belgilovchi omillardir. Soya uchun, misollar Iqtisodiy ahamiyatga ega patogenlar qatoriga Colletotrichum kiradi spp., Fusarium spp., Aspergillus spp., Cercospora spp.,Penicillium sp., Alternaria spp., Cladosporium sp., O'simlikka olib kelishi mumkin bo'lgan Sclerotinia spp., va Rhizoctonia spp o'lim va vaqti-vaqti bilan past boshlang'ich tuproqda ham hosilning umumiy yo'qolishi inokulum zichligiPatogenlarni kamaytirish uchun biologik vositalardan foydalanish bo'lgan samarali, istiqbolli va keng o‘rganilgan usul ekanligi ko‘rsatilgan [4-6]. Biroq, mumkin bo'lgan kasalliklar soni bo'lsa-da biologik nazorat qilinishi amaliy jihatdan ahamiyatli, kam biologik mahsulotlar aslida ishlatilgan. Buning sababi patogenlar tomonidan qo'yilgan cheklovlar va ularning muvaffaqiyatsizligi tanlash tartibi, atrof-muhit omillari, texnik muammolar va tajriba tizimidagi strategiyalar [7].Yangi foydalanish uchun mikroorganizmlarni tanlash jarayoni O'simlik qo'ziqorinining patogen jinslarini bionazorat qilish uchun tijorat mahsulotlari murakkab, chunki keyingi bosqichlarning muvaffaqiyati uchun hal qiluvchi ahamiyatga ega bo'lgan tahlil qilinadigan bir qancha mezonlar mavjud.Bular orasida antagonistik samaradorlik, qarama-qarshilik mexanizmlari, adekvat aholini saqlaydigan transport vositasining o'sishi va hatto qonuniy mulk huquqlarini ta'minlash tartiblari va bozorga kirish juda muhimdir [8]

Bakteriyalar shtammlarining filogeniyasi

Har birida turli tur guruhlari bilan bog'liqlikga asoslangan filogenetik tahlil yo'li bilan jins olingan Shtammlar va turdagi shtammlarning 16S rRNK gen ketma-ketligi. Tahlil uchun qo'shni-qo'shilish usuli ishlatilgan va Har bir jins uchun eng mos modellar (Pseudomonas: Kimura ikki parametr; Bacillus: Tamura-Nei; Paraburkholderia/Burkholderia: Tamura uchta parametr)MEGA dasturi yordamida (versiya 7.0). Eng yaqin tur bacterio.net da tasvirlangan har bir jinsdagi shtammlar platformasi (http://www.bacterio.net/methylophilus.html) edi hisobga olinadi. Klasterlar asosida turlar ichiga joylashtirilgann tegishli guruhlar

Natijalar va muhokama

Petrida qo'ziqorinlarga bakterial antagonizmni baholash idishlar

Hammasi bo'lib 877 shtamm filogenetik jihatdan o'rganildi Pseudomonas, Bacillus va nasldagi 16S rRNK Paraburkholderiya / Burkholderiya. Shtammlar izolyatsiya qilingan Braziliya va ikkala xost va substratlardan kelib chiqqan, masalan ildizlari, dukkakli o'simliklar tugunlari va o'simlik rizosferasi Guruhlardan 32 ta navlar tanlab olindi Pseudomonas va Bacillus va 37 jinsdan Paraburkholderia/Burkholderia jami 101 shtammni tashkil etuvchi alohida filogenetik guruhlarni ifodalaydi

Soya urug'lari ishtirokida fitopatogenlarga qarshi bioassay inokulyantlarining antagonistik salohiyati

Zamburug'lar	BR 10788 BR 11793 Antagonizm (%)* F.	BR 11793	Aralash	Anglatadi
F. semitectum	86.7 aA	93.3 aA	100.0 aA	93.3 a
F. piperis	80.8 aA	100.0 aA	89.6 aA	90.2 a
P. sojae	57.8 bA 85.6 aA	57.8 bA	57.8 bA	57.8 bA 85.6 aA
	68.3 aA 70.6 b	85.6 aA 68.3 aA 70.6 b	85.6 aA 68.3 aA 70.6 b	68.3 aA 70.6 b
C. cassiicola	52.6 bA 27.2 bA 55.9 bA 45.2 c	52.6 bA 27.2 bA 55.9 bA 45.2 c	52.6 bA 27.2 bA 55.9 bA 45.2 c	52.6 bA 27.2 bA 55.9 bA 45.2 c
A.flavus	21.1 cB 86.5 aA 58.3 bA 55.3 c	21.1 cB 86.5 aA 58.3 bA 55.3 c	21.1 cB 86.5 aA 58.3 bA 55.3 c	21.1 cB 86.5 aA 58.3 bA 55.3 c

Misol uchun, AQShda *B.subtilis* dan tayyorlangan mahsulotlar 1983 yildan beri yeryong'oq urug'ini davolash va barglar uchun ishlatiladi va tuproq ilovalari. Bundan tashqari, B. subtilis ham ishlatiladi Fusarium solguniga qarshi faol urug'larni davolash, P. damping-off, va Cercospora, Colletotrichum sabab bo'lgan barglar dog'lari, Alternaria, Ascochyta, Myrothecium, Ramularia, Hindistonda paxta, don, sabzavot, meva va bezak o'simliklarida Xanthomonas va Erysiphe poligonlari. Uning harakati asosan sabab bo'ladi antibiotiklar ishlab chiqarishga, kosmos uchun raqobat va ozuqa moddalari, antibiotiklar va hujayra devorining degradatsiyasi. Shunday qilib, mahsulotlar uchun vosita bo'lib xizmat qiluvchi antagonistik mikroorganizmlarga asoslangan fitopatogenlarni nazorat qilish

Xulosa

BR 10788 va BR 11793 shtammlari samaradorlikni ko'rsatdi zamburug'lar. BR 10788 va BR bakteriyalarining kombinatsiyasi qo'ziqorin nazorati qobiliyatini teng yoki undan yuqori ko'rsatdi individual shtammlarga. O'rganilgan

bioagentlar kamaytirishi mumkin qishloq xo'jaligi ekinlari urug'larini davolashda fungitsidlardan foydalanish soya urug'larini fitopatogenlarga qarshi davolash mumkin.

Adabiyotlar ro`yxati:

1. Annayeva, D. (2022). CICHORIUM INTYBUS LISOLATION OF ENDOPHYTIC MICROORGANISMS FROM PLANTS AND IDENTIFICATION OF BIOTECHNOLOGICAL POTENTIAL. Eurasian Journal of Medical and Natural Sciences, 2(6), 54–61. извлечено от https://www.in-academy.uz/index.php/EJMNS/article/view/1755
2. Annayeva, D. G. Y., Azzamov, U. B., & Annayev, M. (2022). ODDIY SACHRATQI (CICHORIUM INTYBUS L) O‘SIMLIGIDAN ENDOFIT MIKROORGANIZMLAR AJRATIB OLISH. Oriental renaissance: Innovative, educational, natural and social sciences, 2(5-2), 963-972. https://cyberleninka.ru/journal/n/oriental-renaissance-innovative-educational-natural-and-social-sciences
3. Azimovich, A. U. B., G‘iyosovna, S. D., & Zokirovna, M. M. (2022). XLAMIDIYANING INSON SALOMATLIGIGA TA’SIRINI MIKROBIOLOGIK TAHLILLI VA DIOGNOSTIKASI. Talqin va tadqiqotlar ilmiy-uslubiy jurnali, 1(11), 153-161. https://doi.org/10.5281/zenodo.7305057
4. Giyosovna, S. D. (2023). ODDIY SACHRATQI (CICHORIUM INTYBUS L) O’SIMLIK QISMLARIDAN ENDOFIT BAKTERIYALARNING SOF KULTURALARINI AJRATISH USULLARI. Новости образования: исследование в XXI веке, 1(6), 387-393. http://nauchniyimpuls.ru/index.php/noiv/article/view/3573
5. Shodiyeva, D. (2023). BIO-MORPHOLOGICAL CHARACTERISTICS, GEOGRAPHICAL DISTRIBUTION AND USE IN TRADITIONAL MEDICINE OF CICHORIUM INTYBUS. *GOLDEN BRAIN*, *1*(2), 252-256. https://researchedu.org/index.php/goldenbrain/article/view/1337
6. Shodiyeva, D. (2023). SANOAT MIKROBIOLOGIYASINING BIOTEXNOLOGIYADAGI AHAMIYATI. *GOLDEN BRAIN*, *1*(2), 116-120. https://researchedu.org/index.php/goldenbrain/article/view/1310
7. Shodiyeva, D. (2023). INDOLIL SIRKA KISLOTA MIQDORINI ANIQLASH. *GOLDEN BRAIN*, *1*(2), 321-324. https://researchedu.org/index.php/goldenbrain/article/view/1361
8. Dildora, S. (2023). CICHORIUM INTYBUSDAN OLINGAN BACILLUS AVLODIGA MANSUB BAKTERIYALARINING BIOTEXNOLOGIK POTENSIALI VA MIKROBIOLOGIYADAGI ISTIQBOLLARI. *O'ZBEKISTONDA FANLARARO INNOVATSIYALAR VA ILMIY TADQIQOTLAR JURNALI*, *2*(15), 726-732. https://bestpublication.org/index.php/ozf/article/view/3359
9. Annayeva, D. G. Y., Azzamov, U. B., & Annayev, M. O. S. (2022). O’SIMLIGIDAN ENDOFIT MIKROORGANIZMLAR AJRATIB OLISH.
10. Dildora, S., & Mekhriniso, B. (2023, January). APPLICATION AREAS OF BIOLOGICALLY ACTIVE METABOLITES PRODUCED BY ENDOPHITE BACTERIA. In *E Conference Zone* (pp. 92-95). http://www.econferencezone.org/index.php/ecz/article/view/1941
11. Shodiyeva Dildora, & Bobakandova Mekhriniso. (2023). APPLICATION AREAS OF BIOLOGICALLY ACTIVE METABOLITES PRODUCED BY ENDOPHITE BACTERIA. *E Conference Zone*, 92–95. Retrieved from http://www.econferencezone.org/index.php/ecz/article/view/1941
12. Жамалова , Ф. А., Болтаев , К. С., & Шодиева , Д. Г. (2023). ВОЗБУДИТЕЛИ МИКОЗОВ СЛЕПНЕЙ НА ТЕРРИТОРИИ РАЗЛИЧНЫХ РЕГИОНОВ УЗБЕКИСТАНА. *GOLDEN BRAIN*, *1*(3), 28–34. Retrieved from https://researchedu.org/index.php/goldenbrain/article/view/1465
13. Makhmudova Zakro Vahobovna, Shodiyeva Dildora, & Olimjonova Sadokat

Gulomjon's daughter. (2023). BIOLOGY AND BIOTECHNOLOGY OF ENDOPHITE MICROORGANISMS. *World Bulletin of Public Health*, *18*, 115-117. Retrieved from https://scholarexpress.net/index.php/wbph/article/view/2074

14. Olimjonova , S. G. qizi, & Shodiyeva , D. G. (2023). BAKTERIYALARNI SUYUQ VA QATTIQ OZUQA MUHITLARIDA O'STIRISH SHAROITLARI. *GOLDEN BRAIN*, *1*(3), 182–188. Retrieved from https://researchedu.org/index.php/goldenbrain/article/view/1496

15. Shodiyeva , D. G., & Annayev , M. G. o'g'li. (2023). DOMINANT MICROORGANISMS IN CICHORIUM INTYBUS. *GOLDEN BRAIN*, *1*(3), 175–181. Retrieved from https://researchedu.org/index.php/goldenbrain/article/view/1492

16. G'iyosovna, S. D. (2023). ODDIY SACHRATQI (CICHORIUM INTYBUS L) O'SIMLIGIDAN ENDOFIT MIKROORGANIZMLAR AJRATISH VA ULARNING BIOTEXNOLOGIK POTENSIALINI BAHOLASH. https://researchedu.org/index.php/goldenbrain/article/view/1506

17. Shodiyeva , D. G. (2023). ODDIY SACHRATQI (CICHORIUM INTYBUS L) O'SIMLIGIDAN ENDOFIT MIKROORGANIZMLAR AJRATISH VA ULARNING BIOTEXNOLOGIK POTENSIALINI BAHOLASH. *GOLDEN BRAIN*, *1*(3), 230–240. Retrieved from https://researchedu.org/index.php/goldenbrain/article/view/1506

18. Shodiyeva Dildora G'iyosovna, & Tohirova Jayrona Izzatullayevna. (2023). VAKSINA OLISH TEXNALOGIYASI VA UNING AHAMIYATI. GOLDEN BRAIN, 1(3), 256–260. https://doi.org/10.5281/zenodo.7605291

19. Boltayev , K. S., Jamalova , F. A., & Shodiyeva , D. G. (2023). MIKOZLARGA MIKROBIOLOGIK MIKROSKOPIK TASHXIS QO'YISHNING O'ZIGA XOS XUSUSIYATLARI. *GOLDEN BRAIN*, *1*(3), 35–40. Retrieved from https://researchedu.org/index.php/goldenbrain/article/view/1466

20. Shodiyeva , D. G., Jamalova , F. A., & Boltayev , K. S. (2023). BACILLUS THURINGIENSIS BAKTERIYALAR ASOSIDA YARATILGAN BIOPREPARATLAR. *GOLDEN BRAIN*, *1*(3), 23–27. Retrieved from https://researchedu.org/index.php/goldenbrain/article/view/1464

21. Hamza, S., Muzaffar, A. ., Dildora, S., & Ulug`bek, A. . (2023). BACILLUS THURINGINGIENSIS BAKTERIYA SHTAMMLARINING PHASEOLUS VULGARIS O`SIMLIGI BIOMETRIK KO`RSATKICHLARIGA VA RIVOJLANISHIGA TA`SIRI. *Scientific Impulse*, *1*(6), 327–332. Retrieved from http://nauchniyimpuls.ru/index.php/ni/article/view/4355

22. Shodiyeva, D. G., Shernazarov, F. F. o'g'li, & Tohirova, J. I. qizi. (2023). BAKTERIYALARNING IKKILAMCHI BIOLOGIK FAOL METABOLITLAR SINTEZ QILISH XUSUSIYATLARI VA ULARNING FARMASEVTIKADA QO'LLANILISHI. *RESEARCH AND EDUCATION*, *2*(1), 269–276. Retrieved from https://researchedu.org/index.php/re/article/view/1455

23. Azimovich, A. U. B., G'iyosovna, S. D., & Akmalovich, M. A. (2023). ANTIBIOTIKLAR TA'SIR DOIRASIGA KO'RA KLASSIFIKATSIYASI. *Talqin va tadqiqotlar ilmiy-uslubiy jurnali*, *1*(17), 245-251. https://cyberleninka.ru/article/n/antibiotiklar-tasir-doirasiga-kora-klassifikatsiyasi

24. Azimovich, A. U. B., & G'iyosovna, S. D. (2023). O 'SIMLIK O 'SISHI VA RIVOJLANISHIDA FOYDALI MIKROORGANIZMLARNING AHAMIYATI. *Talqin va tadqiqotlar ilmiy-uslubiy jurnali*, *1*(17), 257-260. https://cyberleninka.ru/article/n/o-simlik-o-sishi-va-rivojlanishida-foydali-mikroorganizmlarning-ahamiyati

25. Shodiyeva D., Ashirov F., Murodova A. EFFECT OF BACILLUS THURINGIENSIS BACTERIAL STRAINS ON PHASEOLUS VULGARIS PLANT BIOMETRIC

INDICATORS AND DEVELOPMENT //Science and innovation. – 2023. – T. 2. – №. D2. – C. 49-56. https://cyberleninka.ru/article/n/effect-of-bacillus-thuringiensis-bacterial-strains-on-phaseolus-vulgaris-plant-biometric-indicators-and-development

26. Shodiyeva D., Shernazarov F. ANALYSIS OF THE COMPOUNDS PROVIDING ANTIHELMITIC EFFECTS OF CHICHORIUM INTYBUS THROUGH FRACTIONATION //Science and innovation. – 2023. – T. 2. – №. D2. – C. 64-70. https://cyberleninka.ru/article/n/analysis-of-the-compounds-providing-antihelmitic-effects-of-chichorium-intybus-through-fractionation

27. Vahobovna , M. Z. ., G'ulomjon qizi, O. S. ., & G`iyosovna , S. D. . (2023). CICHORIUM INTYBUSNI AN`ANAVIY TIBBIYOTDA QO`LLANILISHI, FITOKIMYOVIY TARKIBI VA FARMAKOLOGIYADAGI AHAMIYATI. *Scientific Impulse*, *1*(6), 1386–1392. Retrieved from http://nauchniyimpuls.ru/index.php/ni/article/view/4776

28. Giyosovna, S. D. (2023). CICHORIUM INTYBUSDAN YANGI BIRIKMA OLISH VA ULARNING BIOLOGIK TASIRI. *O'ZBEKISTONDA FANLARARO INNOVATSIYALAR VA ILMIY TADQIQOTLAR JURNALI*, *2*(16), 156-164.

29. Giyosovna, S. D., Mansur ogli, S. S., & Izzatullayevna, T. J. (2023). CICHORIUM INTYBUS KOCHATLARIDAN OLINGAN YANGI KISLOTA FOSFATLARINING KINETIK VA TERMODINAMIK TADQIQOTLARI. *Новости образования: исследование в XXI веке*, *1*(7), 428-434.

30. Giyosovna, S. D., & Abdusalomovna, J. F. (2023). BACILLUS AVLODIGA MANSUB BAKTERIYALARNING ANTIMIKROB VA ANTOGONISTIK XUSUSIYATLARI. *Scientific Impulse*, *1*(6), 1852-1858.

31. Bobakhandova Mekriniso Fazliddinovna, & Shodiyeva Dildora G'iyosovna. (2023). USAGE OF CICHORIUM INTYBUS IN TRADITIONAL MEDICINE, PHYTOCHEMICAL COMPOSITION AND IMPORTANCE IN PHARMACOLOGY. GOLDEN BRAIN, 1(5), 43–49. https://doi.org/10.5281/zenodo.7663888

32. G'iyosovna, S. D., & Toshtemir o'g'li, X. X. (2023). HUMAN IMMUNITY.

33. Bobakhandova, M. F. (2023). USAGE OF CICHORIUM INTYBUS IN TRADITIONAL MEDICINE, PHYTOCHEMICAL COMPOSITION AND IMPORTANCE IN PHARMACOLOGY. *GOLDEN BRAIN*, *1*(5), 43-49.

34. G'iyosovna, S. D., & Muxriddin G'iyos o'g, A. (2023). DOMINANT MICROORGANISMS IN CICHORIUM INTYBUS.

35. G'iyosovna, S. D. (2023). BAKTERIYALARNI SUYUQ VA QATTIQ OZUQA MUHITLARIDA O'STIRISH SHAROITLARI.

36. Boltayev, K. S., & Jamalova, F. A. (2023). MIKOZLARGA MIKROBIOLOGIK MIKROSKOPIK TASHXIS QO 'YISHNING O 'ZIGA XOS XUSUSIYATLARI. *GOLDEN BRAIN*, *1*(3), 35-40.

37. Tohirova, J. I. (2023). VAKSINA OLISH TEXNALOGIYASI VA UNING AHAMIYATI. *GOLDEN BRAIN*, *1*(3), 256-260.

38. Jamalova, F. A., & Boltayev, K. S. (2023). BACILLUS THURINGIENSIS BAKTERIYALAR ASOSIDA YARATILGAN BIOPREPARATLAR. *GOLDEN BRAIN*, *1*(3), 23-27.

39. Vahobovna, M. Z., & Giyosovna, S. D. (2023). CICHORIUM INTYBUSNI ANANAVIY TIBBIYOTDA QOLLANILISHI, FITOKIMYOVIY TARKIBI VA FARMAKOLOGIYADAGI AHAMIYATI. *Scientific Impulse*, *1*(6), 1386-1392.

40. Giyosovna, S. D., Mansur ogli, S. S., & Izzatullayevna, T. J. (2023). CICHORIUM INTYBUS KOCHATLARIDAN OLINGAN YANGI KISLOTA FOSFATLARINING KINETIK VA TERMODINAMIK TADQIQOTLARI. *Новости образования: исследование в XXI веке*, *1*(7), 428-434.