

**CHERRY (PRUNUS AVIUM) OF THE LITTLE CHERRY (LCHV) VIRUS AND
ITS SPECIFIC SYMPTOMS ARE****Amindjonova Gulmira Karimjonovna***Researcher of the Department of Biology, Faculty of Natural Sciences, Chirchik State Institute
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ANNOTATION: In recent years, there have been a number of negative developments, such as rapid drying of the cherry plant, poor quality and small size of the fruit, and shedding. This leads to economic losses in the production of quality fruits and abundant crops from stone fruit plants. Therefore, research in this area is relevant. The article discusses the spread of the disease in the cherry plant, as well as the symptoms on the leaves and fruits of the plant, the deterioration of the composition of the fruit, the negative impact of viral diseases on agricultural crops.

Keywords. Phytopotagenic viruses, necrotic spots, chlorosis, chlorophyll degradation, economic damage, stiletto, viral diseases, symptoms, green mosaic, apple cider vinegar, grape juice, decreased fructose.

KIRISH. Bugungi kunda dunyo miqyosida meva va sabzavotchilik o'simliklarini yetishtirish import va eksportini mamlakatlar o'rtasida jadallashuvi natijasida, turli o'simlik urug'lari va ko'chatlarining bir davlatdan boshqa bir davlatga olib o'tilishida b'azi hollarda o'simlik ko'chatlari va urug'lari bilan birgalikda turli kasalliklar chaqiruvchi parazitlar ham kirib kelmoqda. Ushbu fitopatogen viruslar bog'dorchilik va dehqonchilik sohalariga shu jumladan hosildorlikning keskin pasayishiga olib keladi. Bu esa har bir mamlakatning iqtisodiyotiga jiddiy ta'sir qiladi. Ushbu kassallik qo'zg'atuvchilardan biri gilos (LCHV) virusidir.

O'RGANISH OBEKTI VA METODLARI. Gilos (*Prunim avium*) o'simligi vitamininga va menerallarga boyligi va imunitetni ko'tarish xususiyati barchaga ma'lumdir. Shuning uchun ham gilos yetishtirish jahonning bir qator rivojlangan mamlakatlarida, shu jumladan bizning mamlakatimizda ham yaxshi yo'lga qo'yilgan. Gilos yetishtirish dunyo miqyosida yiliga 2,3 million tonnaga yetgan. Osiyo (43%), Yevropa (37%) va Amerika (18%) gilos yetishtiradi [1]. Hozirgi kunda gilos ekspotri boshqa meva ekspoti singari respublikamizda muhim ahamiyat kasb etmoqda. Bu esa bog'dorchilikda sifatli va mo'l hosil olishni talab etadi. Mevalarning sifatiga va hosildorlikka salbiy tasir qiluvchi omillardan biri o'simlik viruslaridir. Fitopatogen viruslar gilos (*Prunus avium*) o'simligida ham turli darajadagi kasalliklarni keltirib chiqaradi. Gilos o'simligida kasallik keltirib chiqaruvchi viruslarning 20 ga yaqin turi fanga ma'lum bo'lib, ushbu viruslarga misol qilib, Little cherry virusi (LCHV), cherry mottle leaf virusi (CHMLV), straw berry latent rasp virus (SLRV), prunus nekrotik ringspot virusi (PNRSV) va boshqa viruslarni misol qilish mumkin [2]. Gilos (*Prunus avium*) o'simligida kasallik keltirib chiqaruvchi fitoviruslardan biri little cherry virusi (LCHV) dir. Birinchi marta 1938 yilda Kanadaning Kootenay vodiysida kasallangan gilos daraxtlarida aniqlangan. Shu yili little cherry virusi Kanadadajuda katta epidemiyaga sabab bo'lgan. Buning natijasida yirik gilos bog'laridagi gilos daraxtlari yalpisiga olib tashlangan.

Little cherry virus (LCHV) *Closteroviridae* oilasiga mansub virus bo'lib, ikki turi mavjud. Bu viruslar little cherry virus -1 (LChV-1) va Little cherry virus -2 (LChV-2). Little cherry virus -2 *Ampelovirus* avlodiga mansub bo'lsa, little cherry virus-1 *Velarivirus* avlodiga mansubdir [8]. Little cherry virus-1 gilos daraxtlaridan tashqari olxo'ri, bodom va shaftoli daraxtlarida ham qayd etilgan [8]

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Little cherry virus-1 bilan kasallangan o'simliklarning hosildorligi pasayadi. Ba'zi hollarda hosildorlik 12-65% gacha pasayishi kuzatiladi [3].

Little cherry virusi (LCHV) ning ikki turi keltirib chiqaradigan kasallik kachil olcha kasalligi deb yuritiladi. WSU/OSU Extension (Molnar, 2021) tomonidan o'tkazilgan so'nggi so'rovga ko'ra, 2015 va 2020 yillar oralig'ida Kichkina olcha kasalligi tufayli 974 gektar shirin gilosga teng 238 856 dan ortiq daraxt olib tashlangan. Kesilgan daraxtlar sanoat daromadini 2020 yilda taxminan 30 million dollarga va 2015 va 2020 yillar orasida 65 million dollarga kamaytirdi. Qayta tiklashning yetti yillik davrida yo'qotilgan daromadlar va ishlab chiqaruvchilarning o'rnatish xarajatlari taxminan 115 milion dollarni tashkil etadi. Bundan ko'rinib turibdiki, gilos viruslari gilos yetishtiruvchi mamlakatlar iqtisodiyotiga jiddiy salbiy ta'sir ko'rsatadi.

TADQIQOT NATIJALARI. Gilos (*Prunus avium*)ning little cherry virusi (LCHV) va uning kasallik belgilari. Gilos o'simligida ushbu kasallik bir necha yil davomida rivojlanadi.

- 1-2 yosh: kichik mevalar bitta shox bilan cheklanishi mumkin, meva rangi normal rivojlanishi mumkin yoki alohida rangsiz mevalar kuzatilishi mumkin.
- 2-3 yil: tizimli infeksiyalangan daraxt, ko'p yoki barcha shoxlarda kichik meva kuzatiladi va och rangli mevalar rivojlanishi aniqlanadi.
- 4+ yil: navga bog'liq, ammo meva hosildorligining keskin pasayishi bilan tavsiflanadi. Ta'mga ega bo'lmagan normal va kichik o'lchamdagi mevalarni keltirib chiqaradi [5].

Asosiy alomatlar yig'im-terim paytigaca uncha sezilmaydi. Hosil pishganda mevalarning rangi och qizg'ish yoki pushti rangli bo'lib qolishi kuzatiladi. Virus mevalarning sifatiga ham jiddiy ta'sir qiladi. Virus bilan kasallangan gilos mevalarida asosan fruktoza miqdori keskin pasayadi, bununig natijasida mevalar ta'msiz chuchmal yoki achchiq ta'mli bo'lib qoladi. Mevalarning shakli kichik va uchli bo'lishi kuzatiladi (1-rasm).



A.



B.

1-rasm. Virus bilan kasallangan o'simlik (A) va sog'lom o'simlik mavasi (B) [5].

Little cherry virusi bilan kasallangan gilos daraxtlari bir oz kuchsizlanadi, ammo daraxtning umumiy xolatiga sezilarli ta'sir qilmaydi. Gilosning ba'zi navlarida meva shakli va rangi keyinchalik qaytishi mumkin, lekin meva ta'mi hech qachon tiklanmaydi. Little cherry virusi-1 ta'sirida gilos barglarida erta kuzda qizg'ish rang rivojlanadi.

Little cherry-2 virusi asosan little cherry 1 virusidan deyarli farq qilmaydi. Meva rangining och rangda bo'lishi, mava ta'minihg o'zgarishi, meva shaklining kichiklashishi kabi belgilar kuzatiladi. Little cherry 2 virusining simptomlarini daraxtning barcha to'qimalarida yil bo'yi aniqlash mumkin. Gilos barglarida qizg'ish dog'larni yil davomida kuzatish mumkin [5]. Ba'zi gilos navlarida barglarda kasallik belgilari namoyon bo'ladi. Barglarning biroz chekka burilishidan va barg yuzalarining qizarishi belgilar kuzatiladi.

Little cherry virusi (LCHV) bilan kasallangan gilos o'simliklarining hammasida ham kasallik belgilari kuzatilmasa ham barcha mevalar sifatsiz bo'ladi.

Kichik olcha kasalligi gilosdan tashqari olxo'ri, shaftoli kabi bir qancha tosh mevali o'simliklarda ham uchraydi. Kasallik belgilari odatda shaftoli va olxo'rida sarg'ayib ketgan jingalak barglar va barglardagi o'q tomirlardagi teshiklari, shuningdek mayda deformatsiyalangan mevalar bilan bilan namoyon bo'ladi.

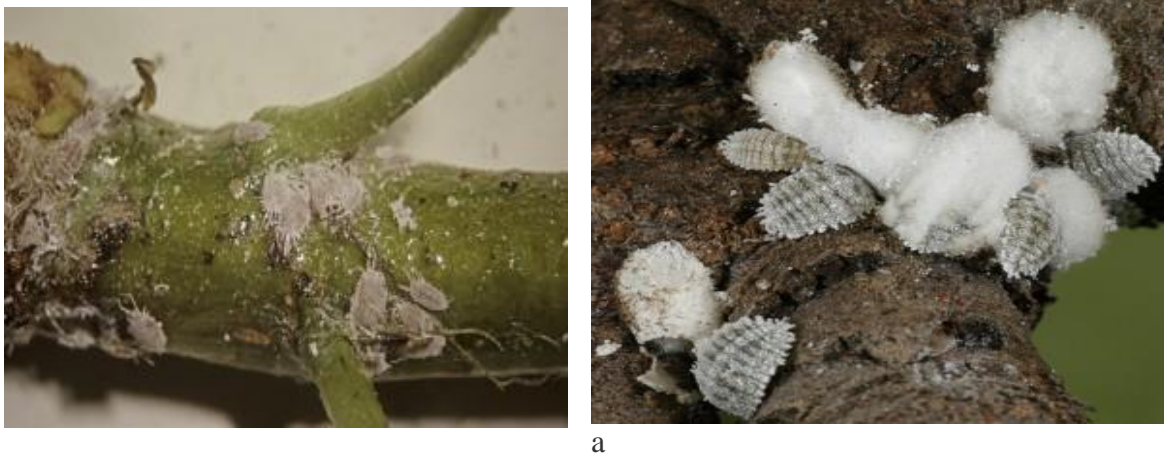
Foydalanilgan adabiyotlar ro'yxati.

Infektsiyalangan shaftolida barglarning sarg'ayishi kuzatiladi. Bu asosan o'rim-yig'imdan taxminan ikki oy oldin paydo bo'la boshlaydi va asta-sekin yomonlashadi, o'rim-yig'im mavsumi o'tgandan so'ng barglarda teshiklar paydo bo'lishni boshlaydi [9].



2- rasm. Shaftolida kichk olcha kasalligining belgilari (a) meaning kichiklashishi (b) barglar shaklining o'zgarish va nekrotik dog'larning hosil bo'lishi [7].

Little cherry virusi (LCHV) asosan payvandlash, o'simliklarga umumiy ishlov bersh va o'simlik shirabitlari orqali yuqishi aniqlangan. Olma *mevaxo'ri* (*Phenacoccus aceris*) va uzum *shirasi* (*Pseudococcus maritimus*) LChV-2 ning asosiy vektorlari hisoblanadi. Ushbu hasharotlar gilos o'simligida parazitlik qiladi va LChV-2 vrusini tarqatadi.



7-rasm. Little cherry virusining tarqatuvchilari a)Uzum shirasi (*Pseudococcus maritimus*) b)Olma mevaxo'ri (*Phenacoccus aceris*) [7]

Little cherry virus-1 uchun hasharotlar vektori ma'lum emas. O'simlik shira –bitlariga qarshi samarali kurash olib borilgan hududlarda o'simliklarda virusli kasalliklar chalinish birmuncha kam aniqlangan. Infektsiyalangan o'simlik kurtaklari yoki ildizpoyani payvand qilish ham kasallikni tarqalishiga sababchi bo'ladi, shuningdek, tabiiy ildizpoyalar orqali ham virus yuqishi mumkin. O'simlik shiralarga qarshi kurashilagan maydonlardagi o'simliklarda virusga chalinish holatlari kam kuzatilgan. Little cherry virusiga qarshi turli yollar qo'llanib ko'rilgan, ammo kop ilmiy tadqiqotlar shuni ko'rsatadiki, ushbu virusga qarshi kurashishning yagona yo'li bu virus bilan kasallangan o'simliklarni olib tashlashdir. Gilos daraxtlari olib tashlangandan so'ng ildizlari ham olinishi lozim, aks holda boshqa sog'lom o'simliklarga ildiz orqali ham yuqishi mumkin.

Xulosa: Umuman olganda, ushbu olib borilgan tadqiqot natijasi va virus zararining juda yuqoriligini e'tiborga olgan holda shuni aytish mumkinki, fitoviruslar o'simliklarning o'sib rivojlanishiga va hosildorligiga jiddiy zarar yetkazadi.

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Gilos viruslari ham gilos yetishtirish va gilos eksportiga katta salbiy ta'sir ko'rsatadi. Shunig uchun gilos viruslarini aniqlash, biologiyasini o'rganish va yuqish vektorlarini anqlash zarur. Gilos viruslari tarqalagan xududlarda monitoring ishlarini olib borish va kasallangan daraxtlarni olib tashlash kerak bo'ladi.

Adabiyotlar ro'yxati

1. Sattorov M., Sheveleva A. A., Fayziev V., Chirkov S. (2020). First report of Plum pox virus on plum in Uzbekistan. Plant Disease, Published Online:1 Jul 2020 <https://doi.org/10.1094/PDIS-03-20-0456-PDN>
2. Amindjonova G. K., Fayziev V. B. Gilos (*Prunus avium*) o'simligini kasallantiruvchi viruslar va ularni qisqacha tavsifi. Academic Research in Educational Sciences VOLUME 2 | ISSUE 12 | 2021 ISSN: 2181-1385 Scientific Journal Impact Factor (SJIF) 2021: 5.723 Directory Indexing of International Research Journals-CiteFactor 2020-21: 0.89 DOI: 10.24412/2181-1385-2021-12-26-32 2021 йил 27-32 б.
3. Amindjonova G. K., Fayziev V. B. Гилос вируслари ва уларга қарши кураш чоралари. “Yangi O'zbekistonda pedagogik ta'lim innovatsion klasterini rivojlantirish istiqbollari” mavzusidagi xalqaro ilmiy-amaliy anjuman materiallari. 20-21 may. 2022. 2-qism. Chirchiq. 141-143 b.
4. Field Guide to Sweet Cherry Diseases in Washington. By Kenneth C. Eastwell, Gary A. Grove, Dennis A. Johnson, Gaylord I. Mink, Ralph S. Byther, Ronald P. Covey, Jr., and Robert Parker.
5. Ceroska N, Moravec T, Plchovec H, Hoffmeisterova H, Folwarezna J, Dedic P.(2010) Production of polyclonal antibodies to Potato Virus X using recombinant coat protein. J. Phytopathology Vol.158, pp. 66-68.
6. Subcommittee on Plant Health Diagnostics (2018). National Diagnostic Protocol for Cherry leaf roll virus (cherry and walnut strains) NDP10 V2. (Eds. Subcommittee on Plant Health Diagnostics) Authors Rodoni B, Mackie J and Constable F; Reviewer Thomas J, Veerakone S. ISBN-13: 978-0-6481143.
7. *Written by: Scott Harper, WSU Plant Pathology; Andrea Bixby Brosi, Betsy Beers, WSU Entomology; Tianna DuPont, WSU Extension. Updated May 2019. Updated April 2020. Updated June 2020.*
8. Deikmann M., Putter C.A.J. Stone Fruits. FAO/IPGRI Technical Guidelines for the Safe Movement of Germplasm. No. 16 b- 35 2.
9. Woo E.N. Y. & G. R. G.Clover & M. N. Pearson First report of Cherry leaf roll virus (CLRV) in *Malus domestica* Australasian Plant Dis. Notes (2012) 7:151–156 DOI 10.1007/s13314-012-0072-8 b-4 3.
10. Gall Le O. Cheravirus and Sadwavirus: Two unassigned genera of plant positivesense singlestranded RNA viruses formerly considered atypical members of the genus Nepovirus (family Comoviridae)/Gall Le O., H. Sanfacon, M. Ikegami, T. Iwanami, T. Jones, A. Karasev, K. Lehto, J. Wellink, T. Wetzell, N. Yoshikawa//Arch. Virol. – 2007. – Vol. 152. – P. 1767–1774
11. X Phytoplasma and little cherry virus scouting and sampling guide. *Compiled and edited by Tianna DuPont, WSU Extension; Scott Harper, WSU Plant Pathology; Bernardita Sallato, WSU Extension; Ashley Thompson, OSU Extension Edition 1. Copyright © 2020 Washington State University. First printing June 2020*
12. *Prunus* (Stonefruit) Post-Entry Quarantine Testing Manual. New Zealand Government. Growing and Protecting New Zealand. 2006 may.
13. Hansen, A.J. and L. Green. 1985. Canindex I, a superior indicator cultivar for little cherry disease. Plant Dis. 69:11-12
14. Smith, I.M., D.G. McNamara, P.R. Scott and K.M. Harris (eds.) 1992. Quarantine pests for Europe. Data sheets on quarantine pests for the European Communities and for the European and Mediterranean Plant Protection Organization. CAB International, Wallingford, UK, and European and Mediterranean Plant Protection Organization, Paris, France
15. Desvignes, J.C., R. Boye, D. Cornaggia and N. Grasseau. 1990. Maladies Virus des Arbres Fruitières (Maladies à virus, à Mycoplasmes et à Viroïdes). Centre Technique Interprofessionnel des Fruits et Légumes (CTIFL), Paris, France

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16. Knapp E., A. da Câmara Machado, H. Pühringer, Q. Wang, V. Hanzer, H. Weiss, B. Weiss, H. Katinger and M. Laimer da Câmara Machado. 1995. Localization of fruit tree viruses by immuno tissue printing in infected shoots of *Malus* and *Prunus* sp. *J. Virol. Meth.* 55:157-173
17. Axmatovich J. R. In vitro rearing of trichogramma (Hymenoptera: Trichogrammatidae) //European science review. – 2016. – №. 9-10. – С. 11-13.
18. Jumaev R. A. et al. The technology of rearing Braconidae in vitro in biolaboratory //European Science Review. – 2017. – №. 3-4. – С. 3-5.
19. Жумаев Р. А. Массовое размножение трихограммы на яйцах хлопковой совки в условиях биологической лаборатории и ее применение в агробиоценозах //Халқаро илмий-амалий конференция “Ўзбекистон мева-сабзавот маҳсулотларининг устунлиги” мақолалар тўплами. Тошкент. – 2016. – С. 193-196.
20. Жумаев Р. А. Значение представителей семейства BRACONIDAE в регулировании численности совок в агробиоценозах //ЎзМУ Хабарлари. – 2017. – Т. 3. – №. 1.
21. Жумаев Р. А. РАЗМНОЖЕНИЯ ИН ВИТРО ВАСОН НАВЕТОР SAY И BRACON GREENI ASHMEAD //Актуальные проблемы современной науки. – 2017. – №. 3. – С. 215-218.
22. Axmatovich J. R. In Vitro Rearing of Parasitoids (Hymenoptera: Trichogrammatidae and Braconidae) //Texas Journal of Agriculture and Biological Sciences. – 2022. – Т. 4. – С. 33-37.
23. Suleymanov B. A., Jumaev R. A., Abduvosiqova L. A. Lepidoptera Found In Cabbage Agrobiocenosis The Dominant Types Of Representatives Of The Category Are Bioecology //The American Journal of Agriculture and Biomedical Engineering. – 2021. – Т. 3. – №. 06. – С. 125-134.
24. Жумаев Р. А., Кимсанбаев Х. Х. ТЕХНОЛОГИЯ РАЗМНОЖЕНИЯ ВАСОН НАВЕТОР SAY МЕТОДОМ IN VITRO В БИОЛАБОРАТОРИИ //Актуальные вопросы современной науки. – 2017. – №. 2. – С. 50-54.
25. Jumaev R., Rakhimova A. Analysis of scientific research on reproduction of species of Trichograms in Biolaboratory //The American Journal of Agriculture and Biomedical Engineering. – 2020. – Т. 2. – №. 08. – С. 148-152.
26. Jumaev R., Rustamov A. Representatives of Lepidoptera groups in the biocenosis of Uzbekistan and their effective parasite-entomophage types //IOP Conference Series: Earth and Environmental Science. – IOP Publishing, 2022. – Т. 1068. – №. 1. – С. 012026.
27. Рустамов А., Расул Ж. ВЛИЯНИЕ НЕКОТОРЫХ ВИДОВ ИНСЕКТИДОВ НА ЭНТОМОФАГА LYSIPHLEBUS FABARUM, ПРИМЕНЯЕМЫХ ПРОТИВ ТЛЕЙ И ХЛОПКОВОЙ СОВКИ //Universum: химия и биология. – 2022. – №. 6-1 (96). – С. 50-53.
28. Kimsanbaev X. X., Jumaev R. A., Abduvosiqova L. A. Determination Of Effective Parasite-Entomofag Species In The Management Of The Number Of Family Representatives In Pieridae //The American Journal of Agriculture and Biomedical Engineering. – 2021. – Т. 3. – №. 06. – С. 135-143.
29. Lebedeva N. et al. Revision of stoneflies (insecta: plecoptera) fauna in Uzbekistan //E3S Web of Conferences. – EDP Sciences, 2021. – Т. 258. – С. 08030.
30. Jumaev R. et al. Representatives of Lepidoptera groups occurred in forestry and agricultural crops and their effective entomophage types //E3S Web of Conferences. – EDP Sciences, 2021. – Т. 244. – С. 02020.
31. Kimsanboev K. et al. Euzophera Punicella Mooze (Lepidoptera) bioecology and development of host entomophagic equilibrium in biocenosis //E3S Web of Conferences. – EDP Sciences, 2021. – Т. 244. – С. 01003
32. То'райева Г. Ethnography of the peoples of Central Asia in the late XIX and early XX centuries on the example of Russian oriental studies //ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz). – 2020. – Т. 6. – №. 2.
33. ТУРАЕВА Г. Ш., ДЖУРАЕВ Х. Ф. АВТОМАТИЧЕСКОЕ СИСТЕМЫ УПРАВЛЕНИЯ ПРОЦЕССА ЗАМЕСА ТЕСТА НА ОСНОВЕ ИКС //Будущее науки-2015. – 2015. – С. 329-332.
34. Nuralievna S. N., Islamovna Z. N., Rakhimovna K. D. Prediction of Premature Outflow of amniotic fluid in Preterm pregnancy //International Journal of Psychosocial Rehabilitation. – 2020. – Т. 24. – №. 5. – С. 5675-5685.