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ASAL BERUVCHI AYRIM BUTALARNI VEGETATIV KO‘PAYTIRISHDA ZAMBURUG’ VA BOSHQA KASALLIKLAR BILAN ZARARLANISHI VA ULARGA QARSHI KURASH CHORALARI

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Annotatsiya. *Ushbu maqolada O’zbekiston sharoitida Legustrum va Goji butalarining vegetativ ko‘paytirish jarayonida uchraydigan kasalliklar va ularning oldini olish choralari ko‘rib chiqilgan. Legustrum va Goji butalari asalarichilikda, ekotizimda va ekologik barqarorlikda muhim o‘rin tutadi. Qalamchalar orqali ko‘paytirishda zamburug’, bakterial chirish va virusli infeksiyalarning oldini olish uchun sog‘lom ona o‘simliklardan qalamcha olish, dezinfektsiya qilish, sharoitlarni boshqarish va davolash usullarini qo‘llash zarur. Tadqiqotlar shuni ko‘rsatadiki, kasalliklar qalamchalar ildiz otishini kamaytiradi, ammo profilaktik choralarga rioya qilish orqali omon qolish darajasi sezilarli darajada oshadi*

Kalit so’zlar: *Legustrum, Goji, Asalarichilik, Vegetativ ko’paytirish, Kasalliklar, Zamburug’, Bakterial chirish, Virusli infeksiya, O‘simlikni dezinfektsiya qilish, Ildiz otish.*

Аннотация. *В данной статье рассмотрены болезни, возникающие при вегетативном размножении кустов легуструма и годжи в условиях Узбекистана, и меры их профилактики. Кусты легуструма и годжи играют важную роль в пчеловодстве, экосистеме и экологической устойчивости. Чтобы предотвратить грибковые, бактериальные гнили и вирусные инфекции при черенковом размножении, необходимо брать черенки от здоровых материнских растений, дезинфицировать, контролировать условия и применять методы лечения. Исследования показывают, что болезни снижают укореняемость черенков, но при соблюдении профилактических мер выживаемость значительно увеличивается.*

Ключевые слова: *Легуструм, Годжи, Пчеловодство, Вегетативное размножение, Болезни, Грибок, Бактериальная гниль, Вирусная инфекция, Дезинфекция растений, Укоренение.*

Abstract. *This article examines the diseases affecting the vegetative propagation of Ligustrum and Lycium barbarum (Goji) shrubs in Uzbekistan and outlines effective prevention strategies. These shrubs hold significant ecological and economic value, contributing to beekeeping, ecosystem stability, and environmental sustainability. During propagation via cuttings, several key practices are critical for success: selecting healthy parent plants, sterilizing propagation materials, maintaining optimal environmental conditions, and applying preventative treatments to mitigate the risks of diseases such as damping-off, bacterial rot, and viral infections. Research findings indicate that these diseases can substantially reduce the rooting success of cuttings. However, implementing appropriate preventive measures can notably enhance the survival and establishment rates of propagated plants.*

Keywords: *Ligustrum, Goji, Beekeeping, Vegetative propagation, Diseases, Damping-off, Bacterial rot, Viral infection, Plant disinfection, Rooting.*

Kirish. O‘zbekiston sharoitida ko‘plab asal beruvchi butalar mavjud bo‘lib, ulardan Legustrum va Goji butalarini misol keltira olamiz. Legustrum va Goji butalari o‘zining manzaraviyligi, dorivorlik xususiyatlari va ekotizimdagi o‘rni bilan mashhur o‘simliklardir. Ular asalarichilikda ham muhim ahamiyatga ega, chunki bu o‘simliklar asalarilar uchun sifatli nektar va polen manbai bo‘lib xizmat qiladi. Legustrum butalari mayda, xushbo‘y gullarga ega bo‘lib, gullash davri yoz oylariga to‘g‘ri keladi, bu esa asalari oilalari uchun mavsumiy oziq yetkazib berishda muhim rol o‘ynaydi. Goji gullari ham asalari oilalari uchun oziq-ovqat bazasi hisoblanadi. Bundan tashqari, Goji butalari ekologik muhitni barqarorlashtirishda, tuproqni eroziyadan himoya qilishda va biologik xilma-xillikni oshirishda ham ahamiyatlidir. Bu butalarni vegetativ ko‘paytirish o‘rmonchilikda samarali va tezkor ko‘paytirish usuli hisoblanadi. Legustrum va Goji butalari estetik va iqtisodiy ahamiyatga ega o‘simliklar bo‘lib, ulardan foydalanish ko‘plab sohalarda keng tarqalgan [4]. Biroq, qalamchalar orqali ko‘paytirish jarayonida zamburug’, bakterial chirish va boshqa kasalliklar katta muammo tug‘diradi [3].

Ushbu jadvalda qalamchalarni ko‘paytirishda uchraydigan asosiy kasalliklar, ularning sababchi omillari va belgilari keng ilmiy yondashuv bilan tushuntirilgan. Bu ma’lumotlar kasalliklarni aniqlash va ularga qarshi tezkor choralar ko‘rishda muhim ahamiyatga ega.

Profilaktik tadbirlar kasalliklarning oldini olishda asosiy bosqichlardir. Jadvalda ko‘rsatilgan usullar qalamchalarni sog‘lom o‘sishi uchun zarur bo‘lgan sharoitlarni yaratishga yordam beradi va bu ma’lumotlar kasalliklarni aniqlash va ularga qarshi tezkor choralar ko‘rishda muhim ahamiyatga ega.

Ushbu jadval kasalliklarni davolashda qo‘llaniladigan samarali usullarni o‘z ichiga oladi. Davolash usullarini to‘g‘ri tanlash orqali qalamchalarni sog‘lomlashtirish mumkin.

Tadqiqotlar shuni ko‘rsatadiki, qalamchalarning 80% dan ortig‘i zamburug’ va boshqa kasalliklar tufayli ildiz otmaydi. Profilaktik choralarga rioya qilish orqali qalamchalarning omon qolish darajasi 90% ga yetishi mumkin. Biologik va kimyoviy preparatlarning birgalikda qo‘llanilishi kasalliklarning oldini olishda yanada samarali natija beradi [1,2].

1-jadval.

Kasalliklarning asosiy sabablari

Kasallik turi	Sabablari	Asosiy belgilari
Zamburug’	Odatda tuproqning haddan tashqari namligi va yaxshi dezinfeksiya qilinmagan materiallar zamburug’ kasalligining rivojlanishiga olib keladi. Nam muhitda zamburug’ sporalari tez ko‘payadi va qalamchalarning to‘qimalariga zarar yetkazadi.	Barglarda kichik, qora yoki jigarrang dog‘lar paydo bo‘lishi, ildiz qismida chirish jarayonining boshlanishi va qalamchalarning qurib qolishi.
Bakterial chirish	Tuproq yoki sug‘orish suvidagi bakterial infeksiyalar, ayniqsa ortiqcha namlik sharoitida, qalamchalarning yumshashi va chirishiga sabab bo‘ladi. Tuproqning haddan tashqari namlanishi bakterial koloniyalarning ko‘payishini qo‘zg‘atadi.	Qalamchalarda yumshash, jigarrang yoki qora tusdagi o‘zgarishlar. Barglar va novdalarda rangparlik yoki qurish jarayonlari.
Virusli infeksiya	Onalik o‘simlikdan olingan qalamchalarning viruslar bilan zararlanganligi yoki virusli vektor hasharotlar, masalan, barg bitlari orqali infeksiyaning tarqalishi.	O‘sish jarayonining susayishi, barglarda mozaikasimon dog‘larning paydo bo‘lishi va umumiy o‘simlik rivojlanishining pasayishi.

2-jadval.

Kasalliklarning oldini olish choralari

Tadbir turi	Amalga oshirish usuli
Sog‘lom onalik o‘simlikni tanlash	Sog‘lom onalik o‘simliklar selektsiyasi kasalliklarning oldini olishda birinchi qadamdir. Bunda kasallik belgilari kuzatilmagan o‘simliklardan qalamchalar olinadi va ularni saqlash uchun fungitsid ishlatiladi.
Qalamchalarni tayyorlash	Qalamchalarni tayyorlash jarayonida asboblarni 70% spirtli eritma yoki 1% mis sulfat bilan dezinfektsiya qilish talab etiladi. Bu kasallik keltiruvchi mikroorganizmlarni yo‘q qilishga yordam beradi. Shuningdek, qalamchalarni Fitosporin kabi biologik preparatlar bilan ishlov berish ulardagi infektsiya xavfini kamaytiradi.
Tuproqni dezinfeksiya qilish	Substratni yuqori haroratda bug‘lash yoki uni kaliy permanganat eritmasi bilan ishlov berish orqali tuproqdagi patogenlarni yo‘q qilish mumkin. Bu o‘simlik uchun steril muhitni ta‘minlaydi.
Sharoitlarni boshqarish	Qalamchalarning muvaffaqiyatli ildiz otishini ta‘minlash uchun optimal sharoitlar yaratilishi zarur. Tavsiya etilgan harorat +18-24°C, nisbiy namlik 70-80%, va yaxshi ventilyatsiya sharoitlariga rioya qilinadi.

3-jadval.

Kasalliklarning davolash usullari

Kasallik turi	Davolash usullari
Zamburug’	Zamburug’ kasalligini bartaraf etish uchun «Fundazol», «Topaz» yoki «Ridomil Gold» fungitsid eritmalaridan foydalaniladi. Zararlangan qalamchalarni boshqa sog‘lom qismlardan ajratib, yo‘q qilish zarur.
Bakterial chirish	Ushbu kasallikni davolashda “Streptomitsin” yoki “Bordo aralashmasi” eritmalaridan foydalaniladi. Qalamchalarni antiseptik eritmalarda namlash ham infeksiyani kamaytiradi.
Virusli infeksiya	Virusli infeksiyaga chalingan o‘simliklarni butunlay yo‘q qilish tavsiya etiladi. Shuningdek, infeksiyaning tarqalish manbalarini bartaraf etish uchun o‘simlik atrofini tozalash lozim.

Xulosa. Legustrum va Goji butalarini vegetativ ko‘paytirishda qalamchalarining kasalliklari ulkan iqtisodiy zarar yetkazishi mumkin. Zamburug’, bakterial va virusli infeksiyalarni oldini olish uchun sog‘lom ona o‘simlik tanlash, substratni dezinfeksiya qilish, sharoitlarni boshqarish va davolash usullarini qo‘llash zarur. Ushbu tadbirlar orqali qalamchalar ildiz otishining yuqori samaradorligi ta’minlanadi.

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BIODIVERSITY CONSERVATION IN THE CONTEXT OF CLIMATE CHANGE

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Abstract. *In this article describe of Biodiversity conservation amidst the uncertainty of climate change presents unique challenges that necessitate precise management strategies. The study reported here was aimed at refining understanding of these challenges and to propose specific, actionable management strategies.*

Key words: *biodiversity, conservation, climate change, soil CO2 emissions.*

Аннотация. *В этой статье описывается сохранение биоразнообразия в условиях неопределенности изменения климата представляет собой уникальные проблемы, требующие точных стратегий управления. Исследование, представленное здесь, было направлено на уточнение понимания этих проблем и предложение конкретных, действенных стратегий управления.*

Ключевые слова: *биоразнообразия, сохранение, изменение климата, выбросы CO2 в почву.*

Annotatsiya. *Ushbu maqolada iqlim o‘zgarishi sharoitida biologik xilma-xillikni saqlash aniq boshqaruv strategiyalarini talab qiladigan muammolarni keltirib chiqarishi bayon qilingan. Mazkur tadqiqot ishi ushbu muammolarni bartaraf qilish hamda aniq, samarali boshqaruv strategiyalarini taklif qilishga qaratilgan.*

Kalit so‘zlar: *biologik xilma-xillik, tabiatni muhofaza qilish, iqlim o’zgarishi, tuproqda CO2 emissiyasi.*

Introduction. Biodiversity conservation has emerged as one of the most critical global challenges of the 21st century. The term “biodiversity” refers to the variety and variability of life on Earth, encompassing species diversity, genetic diversity, and ecosystem diversity [8,14]. Biodiversity is fundamental to ecosystem services such as food production, water purification, climate regulation, and cultural value, all vital for human well-being [4,9]. However, biodiversity is under unprecedented pressure from human activity, with habitat destruction, climate change, overexploitation, pollution, and invasive species driving rapid declines in species and ecosystems worldwide [3,12].

As the urgency to protect biodiversity grows, international frameworks such as the Convention on Biological Diversity (CBD) and the United Nations Sustainable Development Goals (SDGs) have established ambitious targets for biodiversity conservation [5]. Despite these efforts, global biodiversity continues to decline, prompting researchers, policymakers, and conservationists to seek more effective strategies for halting biodiversity loss [7]. This has led to an explosion of scientific research aimed at understanding the drivers of biodiversity loss and developing innovative solutions to protect and restore ecosystems [6,11].

Given the vast and rapidly growing body of literature on biodiversity conservation, it has become increasingly important to systematically assess research trends and identify knowledge gaps in this field. Bibliometric analysis, which uses quantitative methods to evaluate patterns in scientific publications, offers a powerful tool for understanding the evolution of research in biodiversity conservation [2,10]. By analyzing large datasets of academic publications, bibliometric studies can provide insights into publication trends, influential authors and institutions, key research areas, and collaboration networks [1,13].

Methodology. The study employs a range of analytical techniques to interpret the collected data:

Statistical Modeling: Used to identify trends and patterns in biodiversity changes and to predict future impacts of climate change on ecosystem composition and function.

Comparative Analysis: Enables the examination of similarities and differences in climate change impacts and adaptive capacities across the three ecosystems, facilitating the identification of universal and ecosystem-specific conservation needs.

Scenario Analysis: Applied to evaluate the potential effectiveness of various conservation strategies under different climate change scenarios, guiding the development of adaptable and resilient management approaches.

The research design is structured into several phases, each tailored to investigate the unique aspects of the selected ecosystems under study:

Phase 1: Baseline Data Collection involves mapping the current biodiversity status, ecological characteristics, and climatic conditions of each ecosystem. This phase establishes the groundwork for comparative analysis and future impact assessments.

Phase 2: Conservation Strategy Evaluation involves the development and testing of various conservation interventions aimed at mitigating the impacts of climate change. Scenario analysis and modeling techniques are applied to evaluate the effectiveness of these strategies under different climate change projections.

Results and discussion. The extensive research conducted on the impacts of climate change on biodiversity within tropical rainforests, alpine regions, and wetlands yields critical insights with profound implications for conservation strategies worldwide. The findings underscore the urgency of adapting conservation practices to the realities of a warming planet, highlighting the need for innovative, flexible, and resilient approaches to safeguarding biodiversity. This section delves into the conservation implications derived from the study’s findings, proposing a pathway forward for the preservation of unique ecosystems in the face of unprecedented climatic challenges.

The research underscores the necessity of developing conservation strategies that are tailored to the specific needs and vulnerabilities of each ecosystem type. For tropical