YAPON BEHISI – *CHAENOMELES JAPONICA* (THUNB.) LINDL. EX SPACH NING TARQALISH AREALLARI VA BIOEKOLOGIK XUSUSIYATLARI

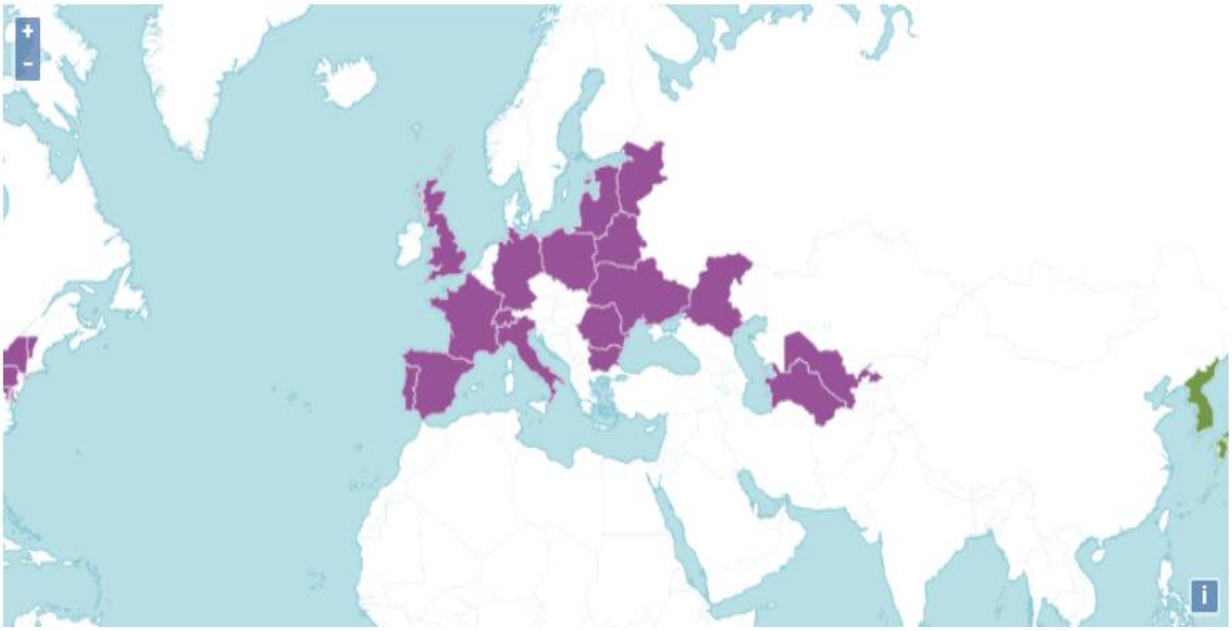
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Annotatsiya. *Ushbu maqolada Yapon behisi – Chaenomeles japonica (Thunb.) Lindl. ex Spach ning tarqalish areallari va bioekologik xususiyatlari bo‘yicha ma’lumotlar keltirilgan. Chaenomeles japonica ning tabiiy tarqalish hududlari / vatani – Janubiy Koreya, Yaponiya (Xonsyu, Kyushu). Ushbu tur dunyoning ko‘plab mamlakatlarida introduksiya qilingan istiqbolli o‘simlikdir. Yapon behisining yillik global ishlab chiqarilishi 0,7 million tonnani tashkil etadi. Oxirgi yillarda yapon behisi mevasi hosildorligi oshganiga qaramay, hosilni yig‘ishning turli yillaridagi kimyoviy tarkibining o‘zgarishi to‘g‘risidagi ma’lumotlar hali ham cheklangan. Yapon behi urug‘idagi yog‘ miqdori va uning turli yillarda yig‘ib olingan mevalardan olingan profili (turli xil abiotik omillar kombinatsiyasining ta'siri) hali o‘rganilmagan. Shu sababli, ilmiy tadqiqot ishlarimizda turli yillardagi yapon behisi navining urug‘ moylari tarkibidagi yog‘ miqdori va sifatiga turli tuproq-iqlim omillarining ta'sirini aniqlash ishlarini olib borilmoqda.*

Kalit so‘zlar: *Chaenomeles japonica, tarqalish areallari, bioekologik xususiyatlari, foydalanish istiqbollari.*

Yapon behisi – *Chaenomeles japonica* (Thunb.) Lindl. ex Spach Rosaceae oilasiga mansub, hayotiy shakliga ko‘ra buta bo‘lib, asosan mo‘'tadil biomlarda o‘sadi. Turning tabiiy tarqalish hududlari / vatani – Janubiy Koreya, Yaponiya (Xonsyu, Kyushu). Ushbu tur dunyoning ko‘plab mamlakatlarida introduksiya qilingan (POWO, 2024) istiqbolli o‘simlikdir **(1-rasm).**



1-rasm. *Chaenomeles japonica* ning (yashil rangda) tabiiy tarqalgan va (binafsha rangda) introduktsiya qilingan areallari (POWO, 2024)



2-rasm. *Chaenomeles japonica* ning mevasining ko‘rinishi
(T.X. Makhkamov olgan sur’at)

Chaenomeles japonica asosan sharbatlar (Ros va boshq., 2004), murabbo (Wojdyło va boshq., 2008) va qiyomlar kabi oziq-ovqat va ichimliklar ishlab chiqarish uchun yetishtiriladigan mevali ekindir (Seglina va boshqalar, 2009). O‘zbekiston sharoitida Yapon behisi asosan bog‘ va parklarda manzarali buta sifatida ekib kelinadi (3-rasm).



3-rasm. *Chaenomeles japonica* ning gullash davridagi ko‘rinishi
(Sh. G‘ulomkhadjaeva olgan sur’at)

O‘zbekiston sharoitida *Chaenomeles japonica* ning mevalari va urug‘lari morfologiyasi (G‘ulomkhadjaeva, 2023), undan Toshkent shahrini ko‘kamlardarishda foydalanish (G‘ulomkhadjaeva, 2022) bo ‘yicha ilmiy tadqiqot ishlari olib borilgan.

Yapon behisining yillik global ishlab chiqarilishi 0,7 million tonnani tashkil etadi (FAOSTAT, 2019), shuning uchun turning plantatsiyalarini tashkil etish ishlarida urug‘dan foydalanish iqtisodiy va ekologik nuqtai nazardan muhimdir. Yog‘ ishlab chiqarish uchun yapon behisining urug‘idan hosil bo‘lgan qo‘shimcha mahsulotlarning tarkibi muqobil foydalanish uchun kalit hisoblanadi. Yapon behisi urug‘idan olingan yog‘ bir to‘yinmagan (C18:1 ning 30-40%) va ko‘p to‘yinmagan (C18:2 ning 40-50%) yog‘ kislotalarining qimmatli manbai ekanligi aniqlangan (Urbanavičiūtė va boshq., 2019), a-tokoferol (Mišina va boshq., 2020), karotenoidlar, skualen va b-sitosterollar (Górnaś va Rudzińska, 2016). Meva sanoati tomonidan ishlab chiqarilgan qo‘shimcha mahsulotlardan (urug‘lar va yadrolar) neftni qayta ishlash uchun potentsial foydalanish atrof-muhit, sog‘liq va iqtisodiy jihatdan foydali ta'sir ko‘rsatadi (Górnaś va Rudzińska, 2016). Noan'anaviy o‘simlik moylari bioaktiv birikmalarning qimmatli manbai bo‘lib, ularning tarkibi o‘simlik turlari va navlari kabi ko‘plab omillarga bog‘liq (Górnaś va boshq., 2019). Urug‘larning yetuklik bosqichi (Mišina va boshq., 2020), abiotik omillar, quritish shart-sharoitlari, moy olishdan oldin urug‘larga issiqlik bilan ishlov berish va moy olish usuli va

uning parametrlari (Rękas va boshq., 2018). Oxirgi yillarda yapon behisi mevasi hosildorligi oshganiga qaramay, hosilni yig‘ishning turli yillaridagi kimyoviy tarkibining o‘zgarishi to‘g‘risidagi ma’lumotlar hali ham cheklangan. Yapon behisi urug‘idagi yog‘ miqdori va uning turli yillarda yig‘ib olingan mevalardan olingan profili (turli xil abiotik omillar kombinatsiyasining ta'siri) hali o‘rganilmagan. Shu sababli, ilmiy tadqiqot ishlarimizda turli yillardagi yapon behisining urug‘ moylari tarkibidagi yog‘ miqdori va sifatiga turli tuproq-iqlim omillarining ta'sirini aniqlash ishlarini olib bormoqdamiz.

Yapon behisi – *Chaenomeles japonica* hozirda Shimoliy Yevropa uchun potentsial mevali ekin sifatida qaralmoqda. Yangi hosilni muvaffaqiyatli joriy etish uchun tez va arzon ko‘paytirish usullari muhim hisoblanadi. *Chaenomeles japonica* ni generativ ko‘paytirish oson, lekin ushbu turning navlari urug‘lar orqali haqiqiy nasl bermaydi. Navlarni o‘z xususiyatlarini saqlab qolish uchun vegetativ tarzda ko‘paytirish kerak (Rumpunen 2002). *Chaenomeles japonica* ni yillik yashil (yumshoq, yog‘ochlashmagan) novdalaridan qalamchalar tayyorlab ko‘paytirilishi mumkin (Kviklys & Rumpunen 1996), qattiq yog‘ochlashgan novdalaridan ko‘paytirish esa nisbatan samarasiz xisoblanadi (Ratomskyte 1990). Shu bilan birga tuplarni bo‘lish yo‘li bilan ham ko‘paytirish mumkin, lekin ushbu usuldan foydalangan holda keng miqyosda plantatsiyalarni hosil qilish iqtisodiy jihatdan samarali hisoblanmaydi. *Chaenomeles japonica* ni mikroklonal ko‘paytirishda mikrokesimlarning ildiz otishi qiyin kechadi (Panavas 1994) va in vitro sharoitida ko‘payish darajasi Rosaceae oilasi ichidagi boshqa turlarning ko‘payish tezligiga nisbatan past hisoblanadi (Norton va Boe 1982).

FOYDALANILGAN ADABIYOTLAR

1. Гуламходжаева, Ш. (2023). использование айвы японской в озеленении города Ташкент. Евразийский журнал медицинских и естественных наук, 3(5), 11-13.
2. Fakhritdinovna, G. S., & Nuralievich, T. M. (2022). Morphology Of Fruits And Seeds Of Chaenomeles Species. Texas Journal of Agriculture and Biological Sciences, 6, 29-32.
3. POWO.https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:77105966-1
4. Ros J.M., Laencina J., Hellın P., Jordan M.J., Vila R., Rumpunen K. Characterization of juice in fruits of different Chaenomeles species // LWT-Food Sci. Technol., 37 (2004), pp. 301-307.
5. Wojdyło, A., Oszmiański, J., & Bober, I. (2008). The effect of addition of chokeberry, flowering quince fruits and rhubarb juice to strawberry jams on their polyphenol content, antioxidant activity and colour. European Food Research and Technology, 227(4), 1043-1051.
6. Seglina, D., Krasnova, I., Heidemane, G., & Ruisa, S. (2009). Influence of drying technology on the quality of dried candied Chaenomeles japonica during storage. Latvian Journal of Agronomy/Agronomija Vestis, (12).
7. Faostat, F. A. O. (2013). Statistical Database. 2019. FAO, Rome.
8. Urbanavičiūtė, I., Rubinskiene, M., & Viškelis, P. (2019). The fatty acid composition and quality of oils from post-industrial waste of quince Chaenomeles japonica. Chemistry & Biodiversity, 16(9), e1900352.
9. Mišina, I., Sipeniece, E., Rudzińska, M., Grygier, A., Radzimirska-Graczyk, M., Kaufmane, E., ... & Górnaś, P. (2020). Associations between oil yield and profile of fatty acids, sterols, squalene, carotenoids, and tocopherols in seed oil of selected Japanese quince genotypes during fruit development. European Journal of Lipid Science and Technology, 122(4), 1900386.

10. Górnaś, P., & Rudzińska, M. (2016). Seeds recovered from industry by-products of nine fruit species with a high potential utility as a source of unconventional oil for biodiesel and cosmetic and pharmaceutical sectors. Industrial Crops and Products, 83, 329-338.
11. Górnaś, P., Rudzińska, M., Grygier, A., & Lācis, G. (2019). Diversity of oil yield, fatty acids, tocopherols, tocotrienols, and sterols in the seeds of 19 interspecific grapes crosses. Journal of the Science of Food and Agriculture, 99(5), 2078-2087.
12. Rękas, A., Wroniak, M., Siger, A., & Ścibisz, I. (2017). Chemical composition and resistance to oxidation of high-oleic rapeseed oil pressed from microwave pre-treated intact and de-hulled seeds. Grasas y Aceites, 68(4), e225-e225.
13. Rumpunen K. 2002. Chaenomeles: potential new fruit crop for northern Europe. In: Janick J. & Whipkey A. (Eds.) Trends in new crops and new uses. ASHA Press, Alexandria, VA, USA 385–392.
14. Kviklys D., Rumpunen K. 1996. Preliminary investigation on propagation of Chaenomeles spp. by softwood cuttings. Report 1992–1994, Balsgård – Department of Horticultural Plant Breeding, Swedish University of Agricultural Sciences 183–186.
15. Ratomskyte G. 1990. Svarainis (Chaenomeles). Retesnieji sodo augalai. Vilnius 41–47. (In Lithuanian).
16. Panavas T. 1994. Optimization of the growth medium for the micropropagation of Japanese quince (Chaenomeles japonica Thunb.). Biologija 3: 44–49.
17. Norton M.E., Boe A.A. 1982. In vitro propagation of ornamental Rosaceous plants. HortScience 17: 190–191.
18. Гуламходжаева, Ш. Ф. (2023). СОЗДАНИЕ ПРОТИВОЭРОЗИОННЫХ НАСАЖДЕНИЙ ИЗ ОРЕХА ГРЕЦКОГО В БРИЧМУЛЛИНСКОМ ЛЕСНОМ ХОЗЯЙСТВЕ ТАШКЕНТСКОЙ ОБЛАСТИ. Science and innovation, 2(Special Issue 11), 15-21.