26-laboratoriya mashg`uloti.

Mavzu: Magnoliyatoifalar bo‘limi. Ra’nodoshlar oilasi

Mashg`ulotning maqsadi: Magnoliyatoifalar bo‘limi. Ra’nodoshlar oilasi vakillarining tuzilishi bilan tanishish.

Kerakli jihozlar: Namatak, olma, o‘rik, qulupnay, g‘ozpanja turkumlarining gerbariy namunalari yoki tirik obyekti, o‘simliklar aniqlagichi, lupa, preparoval nina, turlarning rasmlari (ko‘rgazma yoki slaydlar).

Nazariy ma`lumot: Yuksak o‘simliklar orasida magnoliyatoifalar ko‘plab turlarga ega bo‘lib, yerdagi tarqalishi va tur soni jihatidan eng ko‘p tarqalgan o‘simliklar hisoblanadi. Ushbu bo‘limda ko‘plab oilalarning vakillari o‘rganilib, amaliy mashg‘ulotlarda ularning morfologik xususiyatlari tahlil qilinadi va aniqlagich yordamida tur turlari aniqlanadi.

San’at va Estetika bilan integratsiya:

Magnoliyatoifalar, ayniqsa gulbarglari yirik va ko‘zni qamashtiruvchi bo‘lgan ra’nodoshlar (masalan, olcha, shaftoli, olma, nok, gilos) o‘zining estetik go‘zalligi bilan qadimdan rassomlar, haykaltaroshlar, naqshchilar va miniatyurachilar tomonidan ilhom manbai bo‘lib xizmat qilib kelgan. Sharq miniatyura san’atida gilos va olcha gullari nafislik timsoli sifatida ishlatilgan.

Renessans davrida G‘arbiy Yevropa san’atida magnoliya va gulxandli mevali o‘simliklar natürmortlarda hayot va go‘zallik ramzi sifatida tasvirlangan. Bugungi zamonaviy landshaft dizaynida ham ra’nodoshlar gulli bog‘lar tashkil etishda asosiy estetik komponent hisoblanadi.

Kimyo bilan integratsiya:

Ra’nodoshlar o tarkibida ko‘plab kimyoviy faol moddalar mavjud bo‘lib, ular ichida flavonoidlar, organik kislotalar, taninlar va efir moylari alohida ahamiyatga ega.

Masalan:

- Olma (Malus domestica) va nok (Pyrus communis) tarkibida katexin va kversetin kabi flavonoidlar mavjud bo‘lib, antioksidant xususiyatga ega.
- Shaftoli (Prunus persica) va o‘rik (Prunus armeniaca) dan olingan efir moylar parfyumeriya va oziq-ovqat sanoatida ishlatiladi.
- Ayrim ra’nodosh mevalar (masalan, olxo‘ri) fermentatsiya orqali vinolik kislota va sirka kislotasi ishlab chiqarishda ishlatiladi.

Amaliy mashg‘ulotlar doirasida o‘simliklarning morfologik tahlili quyidagi reja asosida amalga oshiriladi:

1. O‘simlikning yashash sharoiti, g‘arbariy etiketkalaridagi ma'lumotlar yoki morfologik xususiyatlar yig‘indisi asosida hayotiy shakllari.
2. Ildiz tizimining turi, ildiz tugunagi, ildizmevasi, hajmi va shakli.
3. Yer osti poyasining turi (agar mavjud bo‘lsa).
4. Yer usti poyasining morfologik xususiyatlari: fazoda joylashishi, shoxlanishi yoki shoxlanmaganligi, shoxlanish turi, ko‘ndalang kesim shakli, tuklar yoki tikanlar bilan qoplanganligi.
5. Barglarning joylashishi, shakli, tomirlanish turi, barg yaprog‘ining uchi, asosi va chekkasining qirqilishi, tukli yoki tuksizligi, barg g‘ilofchasining mavjudligi.
6. O‘simlikning gullash vaqti, gullari va to‘p gulli o‘simliklar, gullarning joylashishi, simmetriya va gul qismlarining holati.
7. Gulning jinsi va uning tuzilishi, changchili va urug‘chili gullar mavjudligi, changchilarning soni, o‘lchami, urug‘ning tuzilishi va meva hosil qilishi.
8. Gul formulasini aniqlash va diagramma chizish.
9. Meva tiplarini aniqlash.
10. O‘simlikning xo‘jalik ahamiyatini aniqlash.

O‘rganilgan o‘simlikning barcha tuzilish qismlari, shu jumladan mevasi, bargi va boshqa organlari albomga chiziladi. Keyingi vazifa o‘simlik turini aniqlash bo‘lib, o‘simlik aniqlagichlaridan foydalaniladi. Avvalo oilasi aniqlanadi, so‘ngra turkum va turi aniqlanadi.

Qabila: Rosales – Ranogulnamolar

Oila: Rosaceae – Ranoguldoshlar

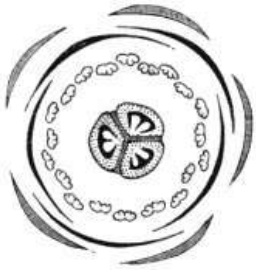
Tur: Rosa canina – itburun namatak, Malus domestica – uy

olmasi, Armeniaca vulgaris – oddiy o‘rik, Fragaria virginiana –

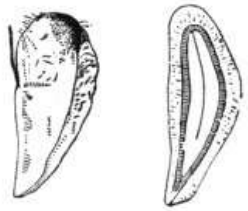
virgin qulupnayi, Potentilla reptans – o‘rmalovchi g‘ozpanja.

Bu oila 100 ga yaqin turkumga mansub bo‘lib, 3000 dan ortiq turlarni o‘z ichiga oladi. O‘zbekistonda esa 11 turkumga tegishli 96 turi o‘sadi. Ushbu o‘simliklar yer yuzida keng tarqalgan o‘tlar, yarimbuta, buta va daraxt shaklida bo‘lib, barglari navbat bilan joylashgan, oddiy yoki murakkab, yonbargchali bo‘lishi mumkin. Ularning gullari aktinomorfik, ikki jinsli va murakkab gulqo‘rg‘onli bo‘ladi. Gulqo‘rg‘onning bo‘laklari 5 tadan iborat, gultojbarglari tutashmagan va

changchilari ko‘p. Urg‘ochi o‘simliklar bitta yoki bir nechta mevabargdan hosil bo‘ladi. Tugunchasi ustki, yarim ostki yoki ostki bo‘lishi mumkin. Mevalarining turi xilma-xil bo‘lib, chin meva, soxta meva, bargak, yong‘oqcha, pista, rezavor, to‘pmeva va boshqa shakllarda uchraydi.

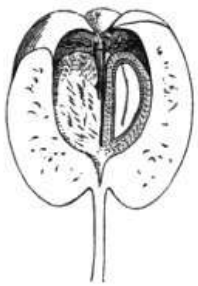


Sorbus.
Diagram.



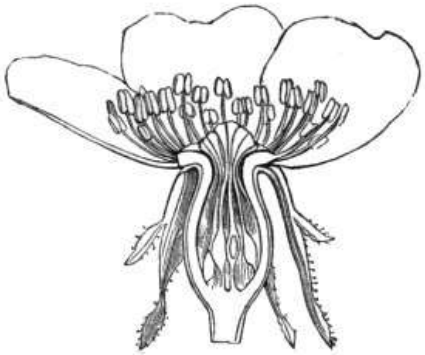
Cotoneaster.
Carpel, ripe and cut vertically (mag.).

Cotoneaster.
Fruit.

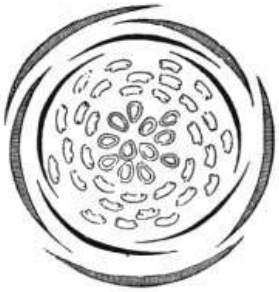


Cotoneaster.
Fruit cut vertically (mag.).

Sweetbriar. (*Rosa rubiginosa.*)



Rose. Flower cut vertically (mag.).



Rose.
Diagram.

Rose.
Young carpel (mag.).

Ishni bajarish tartibi:

1. Ra‘nodoshlar oilasiga mansub o‘simliklarning g‘erbarilari yoki tirik namunalaridan ularning hayotiy shakllari va vegetativ organlarining tuzilishini o‘rganing.
2. Lupa yordamida barg va poyaning tuzilishini tekshirib chiqing.
3. Barglar va poyadagi o‘ziga xos xususiyatlarni aniqlang.
4. Generativ organlarni g‘erbariy namunalari yoki tirik obyektlar yordamida o‘rganing.

5. Gullarga oid tadqiqotlar olib borishda, gulning joylashish shakllariga (yassi, botiq, qavariq) diqqat qaratib, gipantiy bor yoki yo‘qligini aniqlang.
6. Gulni bo‘yiga kesib, uning tugunchasining ustki yoki ostki ekanligini o‘rganing.
7. Mevani tekshirib, uning gulning qanday bo‘laklardan hosil bo‘lganini va meva hamda urug‘larning tarqalishiga moslashuvini aniqlang.
8. O‘rganilgan o‘simliklarning morfologik tahlilini yakunlab, har birining gul tuzilish formulalarini yozing va diagrammalarini chizing. Oilaning ayrim turlarini aniqlagich yordamida aniqlang.

3. Sanoat bilan integratsiya:

Ra’nodosh mevali o‘simliklar qishloq xo‘jaligi va oziq-ovqat sanoatida katta ahamiyatga ega:

- Sharbat, murabbo, quritilgan mevalar ishlab chiqarish.
- Efiroli va parfyumeriya sanoatida shaftoli, gilos, o‘rik ekstraktlaridan foydalaniladi.
- Yog‘li urug‘laridan kosmetika sanoatida ishlatiladigan moylar olinadi.
- Yog‘ochsimon o‘simliklar (masalan, olcha va nok) mebelsozlikda dekorativ yog‘och sifatida ishlatiladi.

4. Farmatsevtika va tibbiyot bilan integratsiya:

Ra’nodosh o‘simliklar qadimdan xalq tabobati va zamonaviy farmatsevtikada ishlatilgan. Ayrim turlari rasmiy dori vositalarining tarkibiga kiradi:

- Gilos po‘stlog‘i (Prunus serotina) — yengil tinchlantiruvchi va yo‘talni kamaytiruvchi sifatida ishlatiladi.

- Olcha va nok po‘stlog‘idan tayyorlangan qaynatmalar siydik haydovchi va yallig‘lanishga qarshi vosita sifatida xalq tabobatida qo‘llaniladi.
- Magnoliya bargi va po‘stlog‘ida alkaloid va lignanlar mavjud bo‘lib, ularning ekstrakti depressiyaga qarshi va immunitetni kuchaytiruvchi preparatlar ishlab chiqarishda ishlatiladi.

Shuningdek, bu o‘simliklar tarkibidagi fenolik birikmalar saraton hujayralariga qarshi faollikka ega ekanligi zamonaviy tadqiqotlarda ko‘rsatib berilgan.

[1]

Questions and Answers

1. The Rose family contains approximately:

A.100 genera and 3000 species

B.200 genera and 4000 species

C.60 genera and 15000 species

D.175 genera and 2500 genera

Explanation

The Rose family is a large plant family that contains approximately 100 genera and 3000 species. This means that within the Rose family, there are around 100 different groups or categories of plants, and within those groups, there are a total of 3000 different species or types of plants. This indicates the diversity and variety that can be found within the Rose family, making it a significant and extensive plant family.

Rate this question:

2. The key use for Cragaegus laviegata is:

A.As an anti-inflammatory & alterative herb particularly for use in gout

B.As a gallbladder stimulant

C.As a cardiac tonic/trophorestorative

D.As a male tonic, used to increase virility

Explanation

Cragaegus laviegata is used as a cardiac tonic/trophorestorative. This means that it is used to support and strengthen the heart and cardiovascular system. It may help to

[1] Esanov H.Q. Botanikadan amaliy mashg‘ulotlar. O`quv qo`llanma. Buxoro. 2020-yil.202 bet.

improve heart function, regulate blood pressure, and promote overall cardiovascular health.

Rate this question:

3. Which of the following trees is a member of the Rosaceae family?

A.Walnut B.Almond C.Oak D.Horse-chestnut

Explanation

Almond is a member of the Rosaceae family because it belongs to the genus Prunus, which is part of the Rosaceae family. The Rosaceae family includes many fruit-bearing trees and shrubs, such as apples, pears, and cherries. Almond trees produce nuts that are commonly consumed and are also considered a part of the Rosaceae family due to their botanical classification.

Rate this question:

4. The leaves of members of the Rosaceae family are usually:

A.Opposite B.Alternate with stipules C.Alternate without stipules D.Decussate

Explanation

The leaves of members of the Rosaceae family are usually alternate with stipules. This means that the leaves are arranged in a staggered pattern along the stem, with each leaf emerging from a different point on the stem. Stipules are small, leaf-like structures that are often found at the base of the leaf stalk. This arrangement is common in many plants and allows for efficient use of space and sunlight.

Rate this question:

5. Which of the following contains the description of flowers which is most often true for members of the Rosaceae family?

A.Either a single flowers, or a racemose inflorescence, sometimes with a large number of flowers.

B.Each "disk flower" has 5 tiny petals fused together, plus 5 stamens fused around a pistil with antennae-like stigmas

C.The nodding flowers have 5 sepals and 5 petals, with the lower petal being larger than the side and top petal pairs. The 5 stamens alternate with the petals

D. Usually either a large flower with 5 petals or clusters of tiny flowers with five petals

Explanation

Members of the Rosaceae family usually have either a large flower with 5 petals or clusters of tiny flowers with five petals. This means that the flowers in this family can vary in size, with some having a single large flower and others having multiple small flowers. In both cases, the flowers have five petals, which is a common characteristic of the Rosaceae family.

Rate this question:

Members of the Rosaceae family can contain vitamins?

A.True B. False

Explanation

Many members of the Rosaceae family contain vitmains, particularly C, B, K and E.

Rate this question:

7. Coumarin is a glycoside found in some members of the Rosaceae family. Can you select from the selection below an action associated with Coumarins?

A.Analgaesic B.Phyto-estrogenic C. Hepatoprotective D.Anti-microbial

Explanation

Coumarins have been found to possess antimicrobial properties, meaning they have the ability to inhibit the growth or kill microorganisms such as bacteria, fungi, and viruses. This makes them useful in the treatment and prevention of microbial infections.

Rate this question:.

Tannins are a common constituent of many member of the Rosaceae family. Can you select any comments that you feel are true in relation to this: Please tick ALL that apply.

A.Tannins give rise to an astringent feeling in the mounth

B.Tannins form a stable foam if shaken in water

C.Having a slowing effect on the heart

D.Can reduce bleeding from small wounds

E.Increase photosensitivity

F.Have an irritant laxative quality

G.Protect inflamed mucous membranes

D. Can reduce bleeding from small wounds

G. Protect inflamed mucous membranes

Explanation

Tannins give rise to an astringent feeling in the mouth because they have a drying and puckering effect on the tissues. They can reduce bleeding from small wounds due to their ability to constrict blood vessels and promote clotting. Tannins also have the ability to protect inflamed mucous membranes by forming a protective barrier and reducing inflammation.

Rate this question:

9. Which of the following actions are applicable to Agrimonia eupatoria (Agrimony). Please tick ALL that apply

A.Astringent B.Narcotic C.Nervine D.Anti-inflammatory E. Emmenagogue

F.Demulcent G. Anti-parasitic

Explanation

Agrimonia eupatoria (Agrimony) is a herb that possesses medicinal properties. It is known for its astringent properties, which means it can constrict or tighten tissues and reduce inflammation. It also has anti-inflammatory properties, helping to reduce inflammation in the body. Additionally, it has emmenagogue properties, which means it can stimulate or regulate menstrual flow. Therefore, the applicable actions for Agrimonia eupatoria are astringent, anti-inflammatory, and emmenagogue.