

tabiiy gazni o'z ichiga olgan omborlarning normal ishlashini buzilishiga olib kelishi mumkin.

### **Foydalanilgan adabiyotlar ro'yxati**

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### **BIOTEXNOLOGIK OB'YEKT XLORELLANI MUQOBIL ENERGIYA MANBASII SIFATIDA FOYDALANISH**

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Hozirgi paytda ko'k-yashil suvo'ti xlorellani chuqur o'rganilishining sabablaridan biri, inson ehtiyoji uchun zarur bo'lgan fotosintetik komponentlarga sistematik ravishda asosiy vositadir. Qishloq xo'jaligida suvo'tining suspenziyasi qo'shimcha sifatida cho'chqa, baliq, qushlarning ozuqasiga qo'shiladi va oqova suvlarini tozalashda foydalaniladi. Bir qator mamlakatlarda oziq – ovqat mahsulotlarini biologik qimmatini oshirish maqsadida ham qo'llaniladi. Xlorella, suvo'tlari spirulin va lyutsernlarga nisbatan 5 marta ko'p ko'k - yashil pigment xlorofill saqlaydi. Fotosintez jarayonida suvo'ti 12 % gacha yorug'lik energiyasidan foydalansa, quruqlik o'simliklarida esa 1-2 % tashkil qiladi [1].

Ko'k-yashil suvo'ti xlorellani biomassasi farmakologiyada ham keng ishlatiladi [2]. Masalan, tolasimon modda, ichak hujayra devorlari tuzilishiga ta'sir ko'rsatadi, natijada interferonni ishlab chiqarilishi tezlashib, rakga qarshi faolligi ortadi. Hujayra devorlarini mustahkamligini ta'minlab, har xil toksik ta'sirlarga chidamliligini kuchaytiradi, bakteretsid xususiyatga ega bo'lganligi uchun zaharli moddalar ta'sirini neytrallaydi, u kamqonli bemorlarni davolashda samarali vositadir, organizm kislorod bilan to'yintirilganda xlorofill o'z navbatida gemoglobinga aylanadi [3].

Ko'k-yashil suvo'ti xlorella vulgaris (Chlorilla) - planetamizda uzaq yashaydigan, noyob tuzilishga ega bir hujayrali ko'k-yashil suvo'tidir.

Ko'k-yashil suvo'ti xlorella yuqori konsentratsiyali biologik faol moddalarga boyligi va oddiy texnologik yo'l bilan ko'p miqdorda biomassa olish mumkin bo'lganligi uchun unga qiziqish juda katta. Xlorella biomassadan lipidlarni ajratish uchun biomassani dastlab issiq suvda qayta ishlash orqali amalga oshirildi. Organik eritmalar ta'sirida, masalan etanol, xloroform va xloroformning etanol bilan aralashmasi 1:2 nisbatda foydalaniladi.

Shu asosda quyidagi lipidli birikmalarning ekstraksiyalari amalga oshirildi: glikolipidlar va fosfolipidlar 50,02 dan 56,20 % gacha, xlorofill va diatsilglitserollar 31,4 dan 39,8 % gacha, - triatsilglitserol 1,7 dan 6,4 % gacha, erkin yog' kislotalari 2,1 dan 5,8 % gacha, uglevod va karotinoidlar 0,4 dan 2,2 % miqdorgacha bo'ladi. Ekstraksiya tugagandan keyin qismlarga ajratildi, masalan, filtrlash yordami bilan biomassa tarkibidagi lipidli birikmalar ajratib olindi. Xlorella biomassasidan ajratib olingan lipidlar bioyoqilg'i ishlab chiqarish uchun potentsial manbalari hisoblanadi. Mikro suv o'tlardan bioyoqilg'i ishlab chiqarish bir qator biotexnologik, ekologik va iqtisodiy muammolarni bartaraf etishning potentsiali barqarordir.

### Adabiyotlar

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## TECHNOLOGY OF MEDICINAL DRINK PREPARATION FROM THE SAFFRON PLANT

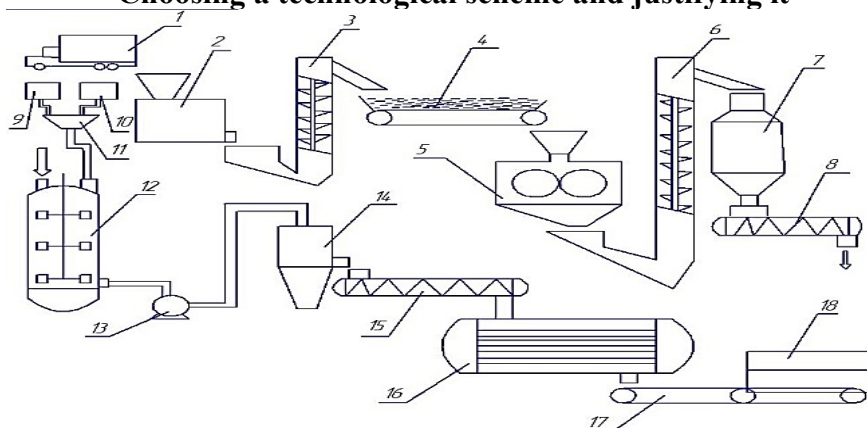
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Plant saffron in July-August. Light, sandy soil is the best soil for growing saffron. Before planting saffron, the land is thoroughly plowed and fertilized. The saffron plant is planted at a depth of 10-12 cm. It is recommended to plant this plant in rows. The distance between rows is 15-20 cm, and the distance between plants is 10-15 cm. After the saffron plant is planted, watering several times will give good results. They should be cleaned of weeds and soften the ground between the rows. In this way, many saffron plants are grown and prepared [1, 2].

The technology of preparation of medicinal tincture from ready-grown saffron plant is described in the following order.

### Choosing a technological scheme and justifying it



Picture 1. Technological line for making medicinal tincture from saffron flower pollen.

**The record of the technological scheme.** The raw materials of the saffron plant, which were brought in by the transportation techniques, are first sorted in the hopper (1) and finely ground in the grinder (2), then crushed in the stekatel device (3) and the free-flowing juice is separated, then together with the residue kept in a nickel bath (4) for two hours, during which the process of dressing with antiseptic agents is suspended. After the process is completed, the mass of petals (5) is squeezed well in a press device, the juice is completely extracted, the remaining mass (6) is filtered through a second large stekatel in a filter (7) and boiled in a pipe device (8) with an internal boiling layer. (12) is transferred to a stirred tank device. After boiling (13), it is transferred to the