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O'ZBEKISTONDA O'STIRILGAN ODDIY ARPABODIYON (PIMPINELLA ANISUM L.) MEVASI EFIR MOYI TARKIBINI O'RGANISH

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Annotatsiya

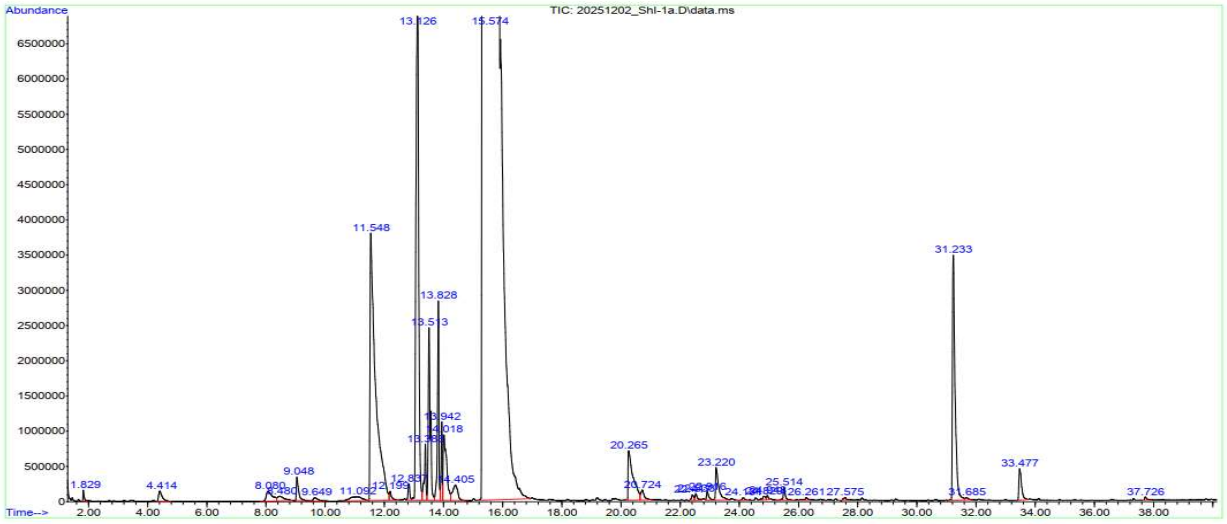
Arpabodiyon mevasidan distillyatsiya usuli orqali efir moyi ajratib olinib, uning miqdori 3,2% ni tashkil etdi. Gaz xromatografiyasi-mass spektrometriya usuli bilan o'simlik mevasi efir moyi tarkibida anetol (86,20%), estragol (3,71%), γ-himaxalen (3,48%) kabi birikmalar yuqori bo'lgan 15 xil moddalar identifikatsiya qilindi.

How to Cite

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Kirish. Efir moylari insoniyatga qadimdan ma'lum bo'lib, o'simlikning turiga qarab ularning tarkibi turlicha bo'ladi va 200 dan ortiq birikmalarni o'z ichiga olishi mumkin. Oxirgi yillarda ularning qo'llanilishi turli soxalarni qamrab olmoqda. Masalan, ular farmatsevtikada dori vositasi tarkibida va dori vositasi sifatida, aromoterapiyada davolovchi vosita sifatida, oziq-ovqat sanoatida mahsulotlarga hid va ta'm beruvchi vosita sifatida, kimyo sanoatida sintezda keng foydalaniladi [1]. O'tkazilgan tadqiqotlarga ko'ra, ular mikroblarga, yallig'lanishga qarshi, antioksidant va boshqa shu kabi faolliklarni namoyon qilishi isbotlangan [2,3]. Efir moyini ko'p miqdorda saqlovchi, istiqbolli o'simliklardan biri oddiy arpabodiyon (Pimpinella anisum L.) hisoblanadi. O'simlik soyabonguldoshlar (Apiaceae) oilasiga mansub bir yillik o't bo'lib, dunyoning ko'pgina mintaqalarida (Turkiya, Italiya, Misr, Meksika va hokazo) keng tarqalgan. Mevasi 6% gacha efir moyi saqlaydi va xilma-xil biologik faol moddalar guruhiga boy hisoblanadi. Masalan unda flavonodlar (apigenin, rutin, kversetin) [4], gidroksidolchin kislotalari (xlorogen, ferul kislotalari) [5], polisaxaridlar [6,7], yog' kislotalari (palmitin, linol, petrozelin va boshqa kislotalar) aniqlangan [8,9]. Mevasi surgi, efir moyi esa balg'am ko'chiruvchi sifatida dori vositalari tarkibiga kiradi. Shuni ta'kidlash joizki, o'simlik mevasi ko'pgina farmakopeya maqolalarida, me'yoriy hujjatlarda uchraydi va efir moyi bo'yicha standartlanadi. Shu sababli, uning efir moyi tarkibini o'rganish muhim ahamiyat kasb etadi va ishning maqsadi bo'ldi.

Tadqiqot natijalari. O'tkazilgan tadqiqot natijalariga ko'ra, arpabodiyon mevasi efir moyi miqdori 3,2% ni tashkil etdi. Uning tarkibida 15 ta birikma aniqlandi va ular seskviterpenlar (δ-elemen, (Z)-β-farnezen, α-kupren, germakren D, α-zingiberen, β-bisabolen), seskviterpenoidlar (α-ylangen, γ-himaxalen), bisiklik monoterpenlar (4-karen), fenilpropanoidlar (estragol, anetol), aromatik aldegidlar (p-arpabodiyon aldegidi), aromatik ketonlar (4-metoksifenilaseton), trisiklik seskviterpen spirtlari (izospatulenol), fenollarning murakkab efirlari (tellungianin G) guruhlariga kiritildi. Identifikatsiya qilingan birikmalar orasida anetol (86,20%), estragol (3,71%) va γ-himaxalen (3,48%) lar dominant bo'ldi (1-rasm, 1-jadval).



1-rasm. Arpabodiyon mevasi efir moyi aralashmasining xromatogrammasi

1-jadval. Arpabodiyon mevasining efir moyi tarkibi

№	Birikma nomi	RI*	RT**	Moddaning tasnifi	Miqdori, %
1	δ-elemen	1420	8,083	Seskviterpen	0,15
2	α-ylangen	1435	8,477	Seskviterpenoid	0,08
3	4-karen	1457	9,045	Bitsiklik monoterpenlar	0,14
4	Estragol	1552	11,551	Fenilpropanoidlar	3,71
5	(Z)-β-farnezen	1601	12,840	Seskviterpen	0,07
6	γ-himaxalen	1612	13,127	Seskviterpenoid	3,48
7	α-kupren	1622	13,388	Seskviterpen	0,23
8	Germakren D	1627	13,515	Seskviterpen	0,90
9	α-zingiberen	1638	13,829	Seskviterpen	0,65
10	β-bisabolen	1643	13,943	Seskviterpen	0,42
11	Anetol	1705	15,573	Fenilpropanoidlar	86,20
12	p-arpabodiyon aldegidi	1896	20,264	Aromatik aldegid	0,63
13	4-metoksifenilaseton	2009	22,917	Aromatik ketonlar	0,05
14	Izospatulenol	2127	25,516	Trisiklik seskviterpen spirtlari	0,06
15	Tellungianin G	2523	33,407	Fenollarning murakkab efirlari	0,21
Σ					**97,98**

*Kovach indeksi, **ushlanish vaqti

Tajriba qism. Xomashyo sifatida arpabodiyonning Toshkent viloyatida 2024-yilda tayyorlangan mevasi olindi. Efir moyini arpabodiyon mevasidan ajratib olish uchun, 50 g uning maydalangan mevasi tubi dumaloq 2 l li kolbaga solindi. 500 ml tozalangan suv quyilib, klevenjer apparatiga ulab, 3 soat davomida ekstraksiya qilindi. So'ng efir moyi suvdan n-geksan bilan ajratib olinib, natriy sulfati yordamida quritildi va 4 ºC haroratda germetik berkitilgan flakonda muzlatkichda tahlilgacha saqlandi. Arpabodiyon mevasi efir moyi tarkibini o'rganish gaz xromatografiyasi mass-spektrometriyasi (GX-MS) usuli bilan olib borildi [10,11].

Xulosa. O'tkazilgan tadqiqot natijalari shuni ko'rsatdiki, arpabodiyon mevasi efir moyi miqdori 3,2% ni tashkil etdi. Uning tarkibida esa 8 xil moddalar guruhiga mansub 15 xil birikma aniqlandi. Aniqlangan birikmalar orasida fenilpropanoidlar (estragol, anetol) va seskviterpenoidlar (α-ylangen, γ-himaxalen) dominantlik qildi. 1% gacha bo'lgan miqdorda δ-elemen, (Z)-β-farnezen, α-kupren, germakren D, α-zingiberen, β-bisabolen, 4-karen, p-arpabodiyon aldegidi, 4-metoksifenilaseton, izospatulenol, tellungianin G lar aniqlandi.

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