Seed flavonoids profile of Calligonum L. in Sothern Khorasan Provine, Iran

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Introduction

Calligonum L. (Calligoneae-Polygonaceae), with about 80 species in the world and 23 recorded species in Iran [1, 2]. It is a novel report and presents flavonoids profile of nine Calligonum species (C. bungei Boiss‹ C. comosum L.Her.‹C. crinitum Boiss.‹C. junecum Fisch et Mey. C. microcarpum Borszcz.‹ C. microcarpum Borszcz.‹ C. paletzkianum Litw., C. persicum Boiss & C. turkestanicum Korov.) from Sothern Khorasan Provine, Iran for understanding these compounds roles as biological active compounds present in plants used for food and medicine [3].

Calligonum junecum در استان خراسان جنوبی

Material and Method

All of samples were examined to practice flavonoid detection, isolation and identification by 2-dimensional paper chromatography (2-DPC), thin layer chromatography (TLC), UV spectroscopy and available references [4, 5]. Voucher specimens were prepared for reference as herbarium voucher that kept in Arak University Herbarium.

Results & Discussion

Results showed all of examined taxa contain flavones C and C-/O glycosides, kaempferol and quercetin. All of them exceptional C. mcrocarpum had aglycones. Flavonoid sulphates found in 5 species and hesperidin was just in C. Crinitum. Narangenin and morin were not found in any of the species.

Table 1: Collection information and fruits 2-DPC and TLC data of nine studied Calligonum taxa from Sothern Khorasan Provine, Iran

Voucher data	Taxon	Number of total flavonoids	Number of flavonoid sulphates	Number of flavonoid *C- and C -O-* glucosides	Number of Aglycones	Apeginin	Chrysin	Genistein	Hesperidin	Isorhamnetin	Kaempferol	Luteolin	Morin	Myricetin	Narengenin	Quercetin	Rhamnetin	Rutin	Tricin	Vitexin
1	*Calligonum bungeis*	5	0	4	1	-	+	-	-	-	-	-	-	+	-	+	-	-	-	-
2	*C. comosum*	8	2	5	1	-	+	+	-	-	+	-	-	+	-	+++	+	-	-	-
3	*C. crinitum*	13	0	9	4	+	+	+	+	+	++	+	-	+	-	+++	-	+	+	+
4	*C. junecum*	5	0	4	1	-	-	-	-	+	++	-	-	-	-	+++	+	+	-	+
5	*C. laristanicum*	5	1	3	1	+	-	-	-	+	++	-	-	+	-	+++	-	+	-	+
6	*C. microcarpum*	5	0	5	0	-	-	-	-	-	++	+	-	-	-	+++	+	+	+	+
7	*C. paletzkianum*	7	1	5	1	+	-	-	-	-	+	-	-	+	-	+++	-	-	-	-
8	*C. persicum*	6	1	4	1	-	-	-	-	-	++	-	-	-	-	+++	+	-	-	-
9	*C. turkestanicum*	7	3	3	1	-	-	+	-	-	++	+	-	+	-	+++	+	-	-	+

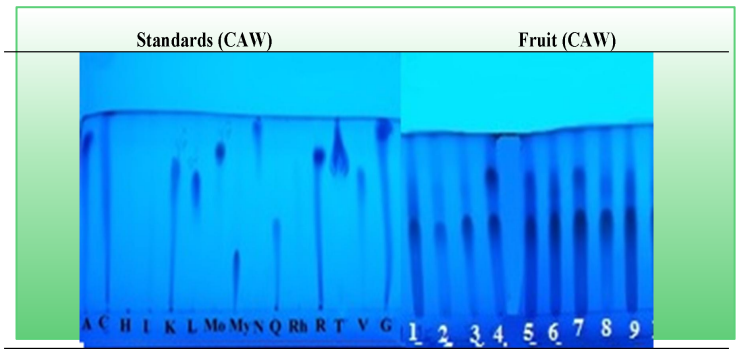

Figure 1: The display of flavonoids in the fruit of the studied taxa of *Calligonum* species by TLC method at UV 245nm in comparison with the used standards

Abbreviations:A: Apigenin, C: Chrysin, H: Hesperidin, G: Genistein, I: Isorhamnetin, K: Kaempferol, L: Luteulin, Mo: Morin, My: Myricetin, N: Naringenin, Q: Quercetin, Rh: Rhamnetin, R: Rutin, T; Tricin, V: Vitexin

Conclusion

This study showed that the number, type and variety of seed flavonoid compounds are valuable in the diagnosis and separation of taxa.

References

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