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DESCRIPTION OF *APIUM GRAVEOLENS* (TUKHM KARAFS) IN UNANI SYSTEM OF MEDICINE AND WESTERN PERSPECTIVE -AN APPRAISAL

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ABSTRACT: *Apium graveolens* Linn. is an indigenous herb that belongs to the family of Apiaceae. In Unani System of Medicine, this plant is commonly known as Karafs, and it is used to treat numerous diseases (Sue mizaj Jigar, Zofe Isteha, Yarqan, Sudda Jigar, Wajaul mafasil, Simane mufrit, Sartan, Hisate Gurdah, Falij was Istirkha, Niqras, etc.). Various studies have revealed that Karafs plays a vital role in the prevention of cardiac problems, lowering serum glucose level and derangement occurs in the lipids, normalize the blood pressure and vigor the heart. There are some active chemical constituents documented such as apigenin, apiein, vitamins A and C which play antioxidant and immunomodulatory activity. The whole plant is used for medicinal purposes. This article demonstrates morphological features, Unani description, active chemical constituents, Unani formulations, scientific reports, and appraisal of the therapeutic properties of this precious medicinal herb.

INTRODUCTION: Karafs is a member of the Apiaceae family (Umbelliferae) and known as celery ^{1, 2}. There are four species which commonly used as medicinal purposes such as; *Apium graveolens*, *Apium rapaceum*, *Apium secalinum* and *Apium smallege* ³.

Celery is cultivated throughout the world since ancient times and many cultivars exist grown for the crisp leaf stalk, the fleshy root or the seeds ⁴. Celery is widely cultivated on temperate zones and native medicinal plant to Europe ⁵.

Taxonomical Classification:

Kingdom: Plantae

Order: Apiales

Family: Apiaceae

Genus: *Apium*

Species: *graveolens* ^{6, 7}.

Synonymous of Karafs: Arabic- Phitra saleyaun, Karafs; Ayurveda- Ajmuda; Bengali- Ajmod; English- Celery; Gujarati- Bodiajmuda; Hindi- Ajmud and Karafs; Kanada -Selerina; Latin- Salahri; Marathi- Ajmuda; Persian- Tukhme Karafs, Karsab; Romi- Batarakhiyun Folk Ajmuda; Sanskrit- Mayauri; Seriyani-Karafs; Sindhi- Diljan; Tamil Celery-keerai; Unani- Karafs; Urdu - Tukhme karafs, Ajmod ⁸.

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Mizaj (Temperament): Haar 1⁰ Yabis 1⁰, Haar 1⁰ Yabis 2⁰, Haar 2⁰ Yabis 20, Har 9, 10.

Afal (Actions): Muhallil, analgesic, emmenagogue, lithotriptic, diaphoretic, diauretic, abortifacient¹¹⁻¹⁵.

Istemalat (Therapeutic Uses): Gout, rheumatism, amenorrhea, Iba, inflammation, edema, renal stone, *Amraze Barid wa Amraze balghamin*^{16, 17}.

Muzarrat (Contraindicated): Epilepsy, pregnant mother, lactating mothers, peoples of hot temperament¹⁸.

Musleh (Corrective): Mastaghi and anisoon¹⁹.

Badal (Substitute): Ajwain, Ajwain Khurasani²⁰.

Miqdare Khoraak (Doses): Root of Karafs 5-7 masha, Tukhm^{12, 21}.



FIG. 1: PLANT



FIG. 2: FLOWERS



FIG. 3: SEEDS⁷

Chemical Constituents: *Apium graveolens* (celery) contained various chemical constituents such as; carbohydrates, flavonoids, alkaloids, steroids, glycosides, phenols, furocoumarins, volatile oils, sesquiterpene alcohols, fatty acids and a wide range of trace elements²². Isoimperatorin, isoquercitrin, linoleic acid, magnesium, p-cymene, phosphorus, guaiacol, silicon. Terpinene-4-ol, 3-N-butyl-phthalide, umbelliferone, Vitamin A, C, B, apiol, zinc. Volatile oil, containing dlimonene, with a-selinene, santalol, a and b eudesmol, dihydrocarvone. Phthalides, ligustilide, sedanolide, and sedanenolide. bergapten, isopimpinellin, apiumoside and celeroside, 3-butyl-4, 5-dihydrophthalide, coumarins (seselin, osthonol,

apigravin, celerin). The essential oil contains daltalimonene, various sesquiterpene. Celery is rich in betacarotene and folic acid^{5, 23-28}.

Murakkabat (Unani Formulations): Jawarish Zarooni Sada, Majoon-e-Dabeed-ul-Ward, Majoon-e-Jograj Gugal, Majoon-e-Nankhwah, Majoon-e-Buqrat, Majoon-e-Rewand, Banadiq-ul- Buzoor, Sufoof-e- Mohazzil, sikanjabeen bazoori moatadil^{29, 30}.

Scientific Reports:

Hepatoprotective Activity: It is reported that *Karafs* (celery) leaves exhibit hepatoprotective effect on APAP induced toxicity in a freshwater fish, *Pangasius sutchi*³¹. Another study reported

that methanolic extracts of *A. graveolens* showed hepatoprotective activity when compared with standard drug silymarin³². It is also reported that methanolic extract of Tukhme Karafs showed hepatoprotective activity in rats against paracetamol-induced hepatotoxicity³³.

Hypolipidemic Activity: It is reported that ethanolic extract of *Apium graveolens* revealed hypolipidemic effects in adult male albino rats³⁴. Leaves of *Karafs* showed a hypolipidemic effect in diabetic rats³⁵. Another study revealed that ethanolic extract of *Apium graveolens* (celery seeds) showed antidyslipidemic activity against ritonavir induced dyslipidemia in mice³⁶. Dianat *et al.*, reported that Celery leaf extract reduces systolic BP, cholesterol, triglyceride, LDL, and VLDL in an animal model of fructose-induced hypertension³⁷.

Antioxidant Activity: One study revealed that n-butanol extract of celery (*Apium graveolens*) seeds ameliorating the lipid peroxidation and antioxidant status in streptozotocin-induced diabetic rats³⁸. Sameh *et al.*, reported that methanol and acetone extracts of *Apium graveolens* have shown antioxidant activity³⁹.

Anti-Depressant Activity: Desu *et al.*, reported that methanolic extract of *Apium graveolens* seeds possessed significant antidepressant activity in animal models at the dose of 200 mg /Kg when compared with standard drug Imipramine at the dose of 20 mg/kg⁴⁰.

Spermatogenesis Activity: It is reported that aqueous extract of celery (*Apium graveolens* L.) leaves showed spermatogenesis activity male rats at the dose of 100 and 200 mg/Kg body weight for 30 days⁴¹.

Anti-hyperuricemic Activity: It is reported that Bekh Karafs (*Apium graveolens*) showed anti-hyperuricemic activity at the dose of 10 gm once a day for 45 days in human subjects when compared with standard drug allopurinol 100 mg thrice a day for 45 days. It was found that the test drug showed more significant⁴².

CONCLUSION: *Apium graveolens* has an extensive range of medicinal uses and can be used either as mufrad or murakkab to treat a different

disease. There are various chemical constituents have been reported currently. Their pharmacological actions are still unknown today. Unani Scholars described its uses by their clinical knowledge. To explore the hidden benefits by research, this type of review will be advantageous for the correlation between Unani literature and western perspective.

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REFERENCES:

1. Norman GB and Max W: Herbal drug and phyto-pharmaceuticals, A Handbook for practice on a scientific basis with reference to German Commissioner. Second edition. Boca Raton: Medpharm Scientific Publishers. 2001: 81-82
2. Yarnell E: Botanical medicines for the urinary tract. World J Urol 2002; 20(5): 285-93.
3. Fazal SS and Singla RK: Review on the pharmacognostical & pharmacological characterization of *Apium graveolens* Linn. Indo Global Journal of Pharmaceutical Sciences 2012; 2(1): 36-42.
4. <https://gobotany.newenglandwild.org/species/apium/graveolens/>. Cited on 22-08-2015.
5. Kooti W, Akbari SA, Samani MA, Ghadery H and Larky DA: A review on a medicinal plant of *Apium graveolens*. Advanced Herbal Medicine 2014; 1(1): 48-59.
6. <https://en.wikipedia.org/wiki/Celery>. Cited on 26-08-2015.
7. Hussain MT, Ahmed G, Jahan N and Adiba M: Unani description of Tukhme Karafs (Seeds of *Apium graveolens* Linn) and its scientific reports. International Research Journal of Biological Sciences 2013; 2(11): 88-93.
8. Gauri M, Ali SA and Khan MS: Review of *Apium graveolens* (Karafs) special reference to Unani Medicine International Archives of Integrated Medicine 2015; 2(1): 131-136.
9. Maghribi ASBI: Kitab Al Fatah and Fi Al Tadavi. Urdu Translation. NCPD Printers Delhi, 2007: 128.
10. Baitar I: Al Jamiul Mufradat Al Advia wa Aghzia. CCRUM. New Delhi, Vol. 2, 2006 ;(4):140-144.
11. Kritikar KR and Basu BD: Indian Medicinal Plants. 2nd edition. Dehradun. International Book Distributors, Vol. 1, 2008: 1668-70.
12. Ghani N: Khazainul Advia. New Delhi Idara Kitb Us Dhifa 2010; 206-08.
13. Lawrence RC, Felson DT, Helmick CG, Arnold LM, Choi H and Deyo RA: Estimates of the prevalence of arthritis and other rheumatic conditions in the United States. Par-2, Arthritis Rheum 2008; 58: 22-26.
14. Rhazi AMBZ: Al Havi fit Tib. CCRUM. Vol. 10, 1999: 10, 101, 110,111.
15. Anonymous I A wealth of India. CSIR. Vol. 10, 2003: 320-325.
16. Ebadi M: Pharmacodynamic Basis of Herbal Medicine. 7 summits. Taylor and Francis, Edition 2nd, 2007: 89.

17. Fundukiyan LJ: The gale Encyclopedia of Alternative Medicine. Drake RD, Farmington Hills Edition 3rd, 2009: 1282.
18. Duke JA: Hand Book of Medicinal Herbs. CRC Press LLC 2002: 170-172.
19. Abdul Hakeem HM: Bustanul Mufradat. Idara Kitab Us Shifa 2000;58
20. Kabiruddin M: Makhzanul mufradat. Idara Kitab Us Shifa 2010; 325.
21. Tariq HNA: Tajul muffridat. New Delhi: Idara Kitab us Shifa 2010: 433-33, 707-08.
22. Snafi AE: The Pharmacology of *Apium graveolens* - A review. International Journal for Pharmaceutical Research Scholars. 2014; 1(1):671-677.
23. http://www.globinmed.com/index.php?option=com_content&view=article&id=79116:apium-graveolens-l&catid=703: a. Cited on 22-08-2015.
24. Asif HM, Akram M, Usmanghani KN, Shah PA, Uzair M, Ramzan M, Shah SM and Rehman R: Monograph of *Apium graveolens* Linn. Journal of Medicinal Plants Research 2011; 5(8): 1494-1496.
25. Zhou K, Wu B, Zhuang Y, Ding L, Liu Z and Qiu F: Chemical constituents of fresh celery. Zhongguo Zhong Yao Za Zhi 2009; 34(12): 1512-1515.
26. <http://ir.cftri.com/5584/>. Studies on chemical and technological aspects of celery (*Apium graveolens*. Linn) seeds.
27. Monograph of *Apium graveolens* Linn. Journal of Medicinal Plants Research 2011; 5(8): 1494-1496.
28. Khare CP: Indian medicinal plants: London: Springer Science Pub; 2008.
29. The Unani Pharmacopoeia of India. Ministry of Health & Family Welfare, Government of India Department of AYUSH Edition 1st, Part 2, Vol. 1 & 2, 2009: 23,25,71,85.
30. The Unani Pharmacopoeia of India: Ministry of Health & Family Welfare, Government of India Department of AYUSH, Edition 1st, Part 2, Vol 2, 2010: 104, 119.
31. Shivashri C, Rajarajeshwari T and Rajasekar P: Hepatoprotective action of celery (*Apium graveolens*) leaves in acetaminophen fed freshwater fish (*Pangasius sutchi*). Fish Physiol Biochem 2013; 39 (5): 1057-69.
32. Ahmed B, Alam T, Varshney M and Khan SA: Hepatoprotective activity of two plants belonging to the Apiaceae and the Euphorbiaceae family, Journal of Experimental Zoology Part A, Ecological Genetics and Physiology 2001; 307(A): 199 -206.
33. Singh A and Handa SS: Hepatoprotective activity of *Apium graveolens* and *Hygrophila auriculata* against paracetamol and thioacetamide intoxication in rats. Journal of Ethnopharmacology.1995; 49: 119-126.
34. Mansi K, Abushoffa AM, Disi A and Aburjai T: Hypo-lipidemic effects of seed extract of celery (*Apium graveolens*) in rats. Pharmacognosy Magazine 2009; 5(20): 301-305.
35. Harvi VD and Doss DVA: Anti-lipidemic effect of *Apium graveolens* and cymbopogan flexuosus in diabetic rats. International Journal of Current Research 2012; 4(5): 11-12.
36. Ahmed QS and Sayedda K: Effect of Celery (*Apium graveolens*) seeds extract on protease inhibitor (ritonavir) induced dyslipidemia. NJIRM 2012; 3(1): 52-56.
37. Dianat M, Veisi A, Ahangarpour A and Moghaddam HF: The effect of hydro-alcoholic celery (*Apium graveolens*) leaf extract on cardiovascular parameters and lipid profile in an animal model of hypertension induced by fructose. Avicenna J Phytomed 2015; 5 (3): 203-209.
38. Al-Sa'aidi JAA, Alrodhan MNA and Ismael AK: Antioxidant activity of *n*-butanol extracts of celery (*Apium graveolens*) seed in the streptozotocin-induced diabetic male. Research in Pharmaceutical Biotechnology 2012; 4(2): 24-29.
39. Sameh B, Ibtissem B, Mahmoud A, Boukef K, Boughattas NA: Antioxidant activity of *Apium graveolens* extracts. Journal of Biologically Active Products from Nature 2011; 1(5-6): 340-343.
40. Desu BSR and Sivaramakrishna K: anti-depressant activity of methanolic extracts of *Apium graveolens* seeds. International Journal of Research in Pharmacy and Chemistry 2012; 2(4): 1124-1127.
41. Hardani A, Afzalzadeh MR, Amirzargar A, Mansouri E and Meamar Z: Effects of aqueous extract of celery (*Apium graveolens* L.) leaves on spermatogenesis in healthy male rats. Avicenna J Phytomed 2015; 5(2): 111-12.
42. Hasan N: Efficacy of Bekh Karafs (*Apium graveolens*) in Hyperuricemia a randomized single-blind standard control study. Dissertation 2013.

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