



HEMLOCK WATER DROP WORT-A REVIEW

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ABSTRACT

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Water hemlock belongs to the family Apiaceae (Umbelliferae). The genus *Cicuta* includes the species spotted water hemlock (*C. maculata*), Western water hemlock (*C. douglasii*), and northern water hemlock also known as European water hemlock (*C. virosa*), *C. bolanderi*, *C. bulbifera*, *C. californica*, *C. curtissii*, *C. mackenziana*, *C. occidentalis*, and *C. vagans*. The active toxic compound in water hemlock is cicutoxin. The hemlock water dropwort (*Oenanthe crocata*) belongs to the family Apiaceae (Umbelliferae), genus *Oenanthe*. It is native to Europe but has been introduced to some parts of the United States. It lacks the chambered root of the *Cicuta* spp. and produces oenanthotoxin, a constitutional isomer (a compound that has the same molecular formula but a different structural formula) of cicutoxin.

INTRODUCTION

Hemlock water dropwort (*OENANTHE CROCATA*) (Refer to figure no-1) stands as an exceptionally toxic plant, ranking among the most poisonous within the carrot family⁽¹⁾. Indigenous to Europe, North Africa, and Western Asia, this perilous flora thrives in various wet environments⁽²⁾. Every part of the plant, encompassing seeds, roots, flowers, fruits, stems, and leaves, harbors deadly alkaloid chemicals⁽³⁾. Growing to a height of 2 to 10 feet, it blooms with petite white flowers arranged in umbrella-shaped clusters during July (Refer to figure no-2)⁽⁴⁾. Despite its seemingly delicate, parsley-like leaves, it poses a significant threat. Throughout history, the lethal nature of hemlock has been well-acknowledged, with socrates standing out as the most renowned victim in 329 B.C⁽⁵⁾. Native Americans also employed hemlock juice to poison

arrowheads. In regions like oregon, the presence of poisonous plants such as water hemlock and poison hemlock poses a serious risk to both humans and livestock, leading to fatalities due to their toxic properties⁽⁶⁾. Despite their innocent parsley-like appearance, these hazardous plants have resulted in numerous instances of livestock poisoning, affecting the nervous system and prompting warnings from entities such as the millom coastguard⁽⁷⁾.

Identification and habitat: winter proves to be an opportune season for distinguishing this plant, given the potential for confusion with other species⁽⁸⁾. Special caution is advised when harvesting watercress or picress in spring, as they frequently intertwine with hemlock water dropwort flower.⁽⁹⁾ (Refer to figure no-3).



Fig. 1: Hemlock water dropwort (OENANTHE CROCATA)



Fig. 2: Distance between stem and flower

Aliases: recognized by various names such as deadly hemlock, poison parsley, california fern, and spotted hemlock ⁽¹⁰⁾, this uniformly poisonous plant contains a highly unsaturated higher alcohol that induces convulsions and respiratory failure, ultimately leading to death ⁽¹¹⁾. Hemlock water dropwort stands out as one of the deadliest plants, causing a distressingly swift demise within three hours, leaving victims with a notable smile ⁽¹²⁾(Refer to figure no4).

Symptoms: Mere contact can result in dermatitis, while ingestion leads to symptoms like nausea, vomiting, elevated temperature, muscular weakness, coma, central nervous system depression, and respiratory distress ⁽¹³⁾. Severe cases may manifest bradycardia, hypotension, paralysis, renal failure, and rhabdomyolysis.

Treatment: No specific antidote exists for hemlock poisoning ⁽¹⁴⁾. Management focuses on addressing symptom severity, with airway securing and ventilation necessary for cases involving difficulty breathing ⁽¹⁵⁾. Attempts at gastrointestinal decontamination are made, and antiseizure medication may be administered to manage seizures. Intravenous fluids are used to prevent dehydration and restore nutrient balance ⁽¹⁶⁾.

Uses: Hemlock water dropwort plant is used for :

- Pimples
- Rasher
- Painful menstruation
- Headache (Migraine)
- Worms in the Intestine



Fig 3: Hemlock water dropwort flow



Fig 4: Smile death grin hemlock water dropwort

(a. Stem b. Roots c. Leaves d. Flower)

Fig 5: HEMLOCK WATER DROPWORT





Fig 6: Fruit of the hemlock water dropwort

Fig 7: Close-up of the flower



Cicuta spp. Are biennial plants with a consistent morphology, reaching a maximum height of 2.5 meters⁽¹⁷⁾. The branching, erect stem (Refer to figure no-5(A)) is smooth and hollow, often exhibiting purple stripes or mottling, particularly in *c. Maculata*⁽¹⁸⁾. The tuberous root (Refer to figure no-5(B)) emits a reddish-brown, raw parsnip-scented, yellowish oily liquid. Compound leaves (Refer to figure no-5(C)), 30-90 cm in length, are alternately arranged, lanceolate, and serrate⁽¹⁹⁾. In spring or early summer, small green or white flowers (Refer to figure no-5(D)) cluster in an umbrella-shaped umbel, measuring 5-10 cm across. The plant produces small, cylindrical fruits (4-6 mm) (Refer to figure no-6) and primarily spreads through numerous small seeds⁽²⁰⁾.

Traditional medicinal value: Summarily, the uses and traditional plant-based remedies hold proven medicinal value, offering effective and safe alternatives⁽²¹⁾. While modern medicine undoubtedly provides diverse solutions, these natural remedies present a holistic approach to health and wellness, addressing physical⁽²²⁾, mental, and emotional well-being⁽²³⁾. The traditional medicinal practices linked with plants and herbs underscore the importance of nature and its ability to provide remedies for a wide range of health conditions. By integrating these

natural remedies into our lives⁽²⁴⁾, we can tap into the healing power of nature and respect the age-old wisdom that plants offer, revolutionizing healthcare for overall wellness⁽²⁵⁾. Integrating traditional medicinal practices with scientific advancements can foster a comprehensive approach to healthcare, benefiting individuals and communities worldwide⁽²⁶⁾.

Conclusion on hemlock water dropwort: In conclusion, comprehending the characteristics and habitat of hemlock water dropwort (Refer to figure no-7) is crucial for the conservation and management of wetland ecosystems⁽²⁷⁾. The plant's toxicity acts as a warning to humans and livestock, underscoring the importance of education and awareness to prevent accidental ingestion⁽²⁸⁾. Through the preservation and restoration of wetland habitats, we can secure the survival of this plant species and the diverse organisms it supports⁽²⁹⁾. Conservation efforts should emphasize the significance of wetlands and the role hemlock water dropwort plays within these delicate ecosystems⁽³⁰⁾.

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