

Anti-inflammatory Effects and Other Uses of Cyclamen Species: A Review

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ABSTRACT

Cyclamen was traditionally classified in the family Primulaceae, was reclassified in the subfamily Myrsinoideae within the family Primulaceae. The aqueous extract obtained from the *Cyclamen europaeum* root-tuber is rich in saponins. These substances are known for their surfactant activity, which means they are adsorbed through the nasal mucosa without being absorbed into the bloodstream. The action of cyclamen extract is local, and it is never absorbed into the bloodstream, so there are no known medication interactions associated with it. This product can be prescribed both as a monotherapy and, if needed, in combined therapy with other medications for treating rhinosinusitis. These include antibiotics, corticosteroids and antihistamines. If use of another nasal spray is required, waiting 2 hours between the two products is recommended. The surfactant action of the *cyclamen saponins* on the nasal mucosa reduces surface tension, facilitating humidification of the zone in addition to the secretion of mucin by goblet cells. This fluidifies the mucus accumulated in the nasal cavity, facilitating its elimination and thereby relieving congestion.

Keyword: *Cyclamen*, species, Anti-inflammatory, Bioactive compounds, Applications.

INTRODUCTION

Cyclamen is Medieval Latin, from earlier Latin *cyclamīnos*, because of the round tuber. In English, the species of the genus are commonly called by the genus name¹⁻⁹. Is a genus of 23 species of perennial flowering plants in the family Primulaceae¹⁰⁻²⁶. *Cyclamen* species are native to Europe and the Mediterranean Basin east to Iran, with one species in Somalia. They grow from tubers and are valued for their flowers with upswept petals and variably patterned leaves. Species: *Cyclamen africanum*, *Cyclamen abchasicum*, *Cyclamen alpinum*, *Cyclamen balearicum*, *Cyclamen cilicium*, *Cyclamen colchicum*, *Cyclamen confusum*, *Cyclamen coum*,

Cyclamen creticum, *Cyclamen cypricum*, *Cyclamen elegans*, *Cyclamen graecum*, *Cyclamen hederifolium*, *Cyclamen intaminatum*, *Cyclamen libanoticum*, *Cyclamen mirabile*, *Cyclamen parviflorum*, *Cyclamen persicum*, *Cyclamen pseudibericum*, *Cyclamen purpurascens*, *Cyclamen repandum*, *Cyclamen rhodium*, *Cyclamen rohlfsianum*, and *Cyclamen somalense*. In many languages²⁶⁻³⁴, *cyclamen* species are colloquially called by a name like the English sowbread, because they are said to be eaten by pigs: pain de porc in French, pan porcino in Italian, varkensbrood in Dutch, “pigs’ manjū” in Japanese. In addition, the saponins stimulate the sensitive receptors present in the nasal mucosa, inducing a nociceptive response transmitted by the trigeminal nerve³⁵⁻⁴². The nasal mucosa is entirely innervated by the trigeminal nerve, and therefore the cholinergic response generated in the nasal cavity is observed throughout the nasal mucosa, favouring opening of the ostium, increasing glandular secretions and increasing ciliar movement in the entire area⁴³⁻⁵⁰. The accumulated secretions in the sinuses are consequently drained through the nose, providing rapid symptomatic relief of nasal congestion⁵¹.

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Anti-inflammatory effects of cyclamen: Cyclamens are plants native to an area of southern Europe, northern Africa and western Asia bordering the Mediterranean sea. The Cyclamen genus comprises around 20 species, the most familiar being *purpurascens*, widely cultivated as a houseplant for its showy, dark green leaves flecked with silver, and nodding white, pink or red flowers with their familiar, reflexed petals⁵²⁻⁵⁵. In medieval times cyclamen retained its plethora of uses, but became used increasingly in the treatment of rheumatic and arthritic conditions. Recent research has focused on reported anti-inflammatory and antinociceptive effects of cyclamen extracts. The roots contain triterpene glycosides known as saponins and researchers at the University of Padua in Italy have found that extracts of the tubers of *Cyclamen repandum* show promising activity when tested on rats and mice⁵⁶⁻⁶⁰. The researchers have isolated and identified the various glycosides and have carried out further in vitro studies measuring the anti-inflammatory properties of cyclamen extracts. They concentrated particularly upon the activity of a newly isolated saponin called repandoside⁶¹⁻⁶³. Results showed that repandoside is one of several saponins that did indeed mediate the inflammatory response by influencing the behaviour of human macrophages. It is hoped that these compounds can be developed for future use in the treatment of inflammatory conditions⁶⁴.

CONCLUSION

Cyclamen, is widely used in the anti-inflammatory and antinociceptive effects. *Cyclamen* derived bioactive compounds used as source of antibiotic properties and pharmaceutical industries used for drug formulation.

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Ethical Clearance: In this review, all information were collected and completed analysis under the biological department of college of Science in Hillah city.

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