

# Chamomile

Medicinal, Biochemical,  
and Agricultural Aspects

# Traditional Herbal Medicines for Modern Times

Each volume in this series provides academia, health sciences, and the herbal medicines industry with in-depth coverage of the herbal remedies for infectious diseases, certain medical conditions, or the plant medicines of a particular country.

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Traditional Herbal Medicines for Modern Times

# Chamomile

Medicinal, Biochemical,  
and Agricultural Aspects

Moumita Das



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# Series Preface

Chamomile, *Matricaria recutita* L., is considered to have originated in the Near East and south and east Europe. It is found almost all over Europe, in Western Siberia, Asia Minor, the Caucasus Mountains, Iran, Afghanistan, and India and cultivated in many of these countries and introduced for this purpose into North and South America, Australia, and New Zealand. This information and the medicinal uses are reviewed.

In the Unani system of medicine, chamomile (called Babuna) has been used since ancient times. Today, throughout the world the flowers are used in the form of a simple tea (tisane) as a gentle medicine for colicky babies and for adults with mild upset stomach or symptoms of mild stress. Extracts of the flowers and also the essential oil distilled from them provide other formulations that extend the range of medicinal benefits through antioxidant, anti-inflammatory, antifungal, and antibacterial activities. Several studies have indicated that chamomile has potential anticancer activity. Other uses are in cosmetics and as a flavoring agent in foods, beverages, bakery products, ice cream, and tobacco.

On the basis of the composition of the essential oil isolated from the flowers, there are now chemical types documented all over the world. Dr. Moumita Das has researched this volume in relation to her native country, India. She describes the chemical nature of the essential oils available from, and their distribution in, the leaves, stems, and roots. Of course, as a single plant it is very small and is usually cultivated in many countries by two sowings of seed in spring and autumn.

Dr. Das has concentrated on the genetic makeup of her Indian chamomile and also described the breeding that has been carried out for the development of high yielding varieties. The associated tissue culture methods and biotechnology required to generate the desired varieties are given in this book.

For temperate crops such as chamomile, India makes use of its Himalayan range providing lower slopes with an appropriate climate. Intercropping is often used throughout the country, to the benefit of two crops growing in proximity, and this too is sometimes applied to chamomile. Dr. Das includes cultivation and agronomic practices, such as layout of the field, choice of fertilizers, irrigation, harvesting and storage, and postharvest technology, for essential oil extraction. The selection of suitable cultivars for India has been researched by her and breeding programs have also been developed to maximize the crop's benefit to the Indian population.

Relevant inventions, classified according to usage, conclude this book.

Throughout the manuscript, Dr. Das has commented on the latest data and in doing so has supplied 1165 references.

I must thank Dr. Das for showing such admirable persistence and determination to complete her very good book on time.

**Roland Hardman**  
*Series Editor*





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# Preface

Chamomile is a fascinating plant. It has been used as a medicinal plant since time immemorial in Europe and the countries of the Middle East. The traditional systems of medicine in these countries list chamomile as a very important plant and the spectrum of disease conditions in which it is used is simply mind-boggling. In the American, Australian, and Asian countries, the use of chamomile is comparatively recent, but growing. Apart from its medicinal properties, chamomile has aromatic properties and is extensively used in flavoring and perfumery. There is, without a doubt, a growing demand for this plant. In this scenario, it is only appropriate that there should be an updated ready reference for the researchers, cultivators, and entrepreneurs who wish to work with chamomile.

The genesis of this work lies in my doctoral work. I was working on the breeding of chamomile for my PhD and I had included a short monograph of this plant in my thesis in 1999. My interest in chamomile sustained for more than a decade after that, and I thought of transforming that monograph into a book, with the hope that it would be useful to its readers. In this book, I have made an attempt to collate the advances in the research on chamomile that have been carried out by innumerable botanists, taxonomists, chemists, biotechnologists, plant breeders, and other associated researchers. The contents of this book include the various uses of chamomile; botanical, chemical, biotechnological, and cultivation aspects; and patents and products of chamomile. This information, I hope, will be of interest to the readers.



---

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