Chapter 3
Ethnobotanical, Pharmacological, and Therapeutic Importance of Basil Seeds Along With Their Role in the Biogenic Synthesis of Important Chemical Substances

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ABSTRACT

The plant world is a significant source of remedies for various illnesses, with 80% of developing nations using herbal medicine. Research is focused on the discovery of safer and more effective medicinal drugs, particularly in the screening of herbs for pharmacological activity and phytochemical ingredients. Ocimum basilicum, a common plant known for its beauty and medicinal properties, is a key focus. Its

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leaves are used as expectorants, demulcents, emmenagogues, and exhilarants, and its leaves are often aromatic, fragrant, and antibacterial. Basil seeds are also used as a plant seedling growth agent and an edible film that decomposes naturally. This study on basil seeds' chemical composition, nutritional value, and medicinal properties will help identify research gaps and provide an overview for future opportunities.

INTRODUCTION

Plants and their parts have long been recognized for the bioactive components that provide their medicinal benefits (Agarwal, Bora, Agarwal, Kumar, & Choudhary, 2015; Jain, Agarwal, Pandey, & Jain, 2011; Shrestha, Sapkota, Baidya, & Basnet, 2016). *Ocimum basilicum*, also referred to as an edible herb that is frequently eaten because of its distinct flavor and scent. It is a hot herb of the Labiatae family that grows annually. The Greek word "Basileus," which means "Royal" or "King," is the source of the term basil, which is sometimes referred to as the "King of the herbs" because of its many use in the culinary, pharmaceutical, and cosmetics sectors (Bilal et al., 2012).

Uses for this plant date back thousands of years. Leaves add a unique taste and aroma to food; they can also be used to make liqueurs, beverages, vinegars, teas, and cheese. The essential oils that are extracted from the aerial parts of plants are used in the culinary, cosmetic, and medical fields (Khaliq, Tita, & Sand, 2017; Saif, Hanif, Rehman, & Riaz, 2020). Food items are flavored using extracts from Ocimum basilicum essential oils. It may be used as a decorative, culinary, and kitchen herb (Gulcin, Elmastas, & Hassan)

The seeds are crushed or whole and added to baked items for technical reasons, in addition to being widely used in beverages and ice cream. This provides a source of nutritious fiber. Furthermore, the seeds are added to fruit-based drinks to enhance both their look and performance (Hajmohammadi, Pirouzifard, Shahedi, & Alizadeh, 2016; Naji-Tabasi & Razavi, 2017; Rezapour, Ghiassi Tarzi, & Movahed, 2016). The substantial dietary fiber content of the seeds makes them a very promising functional ingredient.

It's claimed to be a great source of fibrous material, with outstanding nutritional value (Mathews, Singhal, & Kulkarni, 1993). Its chemical makeup constitutes lipids, raw protein, raw fiber, ash, and moisture. Furthermore, it has 60.8% carbohydrates (Abbas, 2010). The sample's carbohydrates comprise a mixture made up of 35.1% lignin, 9.9% hemicellulose, and 8% cellulose (Southgate, 1976). Despite the evidence in the literature showing that eating basil seeds has substantial health advantages, including anticancer, antibacterial, antidiabetic, and nutritional value, they are not commonly utilized as food (Gajendiran, Thangaraman, Thangamani, Ravi, &