# Effectiveness of Using Curcumin and Bee Honey for the Treatment of Allergic Diseases: A Systematic Review of RCT's

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Allergic diseases pose significant challenges to global health and quality of life. Due to the side effects of conventional treatments, there is growing interest in natural alternatives like curcumin (turmeric) and bee honey, known for their anti-inflammatory and immunomodulatory properties. These compounds reduce cytokines and allergic responses, showing promise as complementary options for managing allergies. This systematic review evaluates the effectiveness of using turmeric and bee honey in treating allergic diseases including allergic rhinitis, asthma, allergic urticaria and eczema (atopic dermatitis) through analysing randomized controlled trials (RCTs) published between 2015 till 11th march 2025. Following PRISMA 2020 guidelines, a literature search was conducted in PubMed, PubMed Central, Cochrane Library, and Google Scholar using MeSH terms (Turmeric, Bee Honey, Asthma, Allergic rhinitis, Atopic dermatitis, Urticaria) and Boolean operators (AND/OR), to identify relevant studies. Two independent reviewers screened the articles. Inclusion criteria: RCTs evaluating the efficacy of turmeric and bee honey in treating allergic conditions. Non – English articles, animal trials and incomplete studies were excluded. Outcomes assessed: symptom score improvement and/or FEV1 improvement in asthma, and reductions in inflammatory markers and improvement in symptoms in allergic rhinitis. Data was extracted by spreadsheets and quantitative synthesis. Study quality was evaluated using the Cochrane Risk of Bias 2 tool. 426 records were screened. Five RCTs met inclusion criteria: three involved adults and two involved children. Curcumin significantly improved asthma control in children by reducing nighttime symptoms ($p < 0.05$) without improving FEV1, while in adults, it significantly increased FEV1 ($p < 0.05$) without improving symptom control. In allergic rhinitis, curcumin significantly reduced IL-4 and TNF-α levels, reduced nasal airflow resistance, and alleviated nasal symptoms score ($p < 0.05$). Compound honey syrup significantly improved asthma control in both groups, enhancing ACT scores in adults and ACQ scores in children ($p < 0.05$). Both interventions were well-tolerated with minimal side effects across age groups. The evidence indicates that curcumin and bee honey are effective, safe complementary treatments for asthma and allergic rhinitis. However, their effectiveness in other allergic conditions like atopic dermatitis and allergic urticaria, or their combined use, remains unexplored. Further large-scale, high-quality RCTs are needed to confirm long-term benefits and establish standardized dosing protocols.

**Keywords**: Turmeric, bee honey, asthma, allergic rhinitis, atopic dermatitis, urticaria.