

## Chemistry of Spices

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# Chemistry of Spices

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# Contents

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<b>Contributors</b>	vii
<b>Preface</b>	ix
<b>1 Introduction</b> <i>V.A. Parthasarathy, B. Chempakam and T. John Zachariah</i>	1
<b>2 Black Pepper</b> <i>T. John Zachariah and V.A. Parthasarathy</i>	21
<b>3 Small Cardamom</b> <i>B. Chempakam and S. Sindhu</i>	41
<b>4 Large Cardamom</b> <i>B. Chempakam and S. Sindhu</i>	59
<b>5 Ginger</b> <i>T. John Zachariah</i>	70
<b>6 Turmeric</b> <i>B. Chempakam and V.A. Parthasarathy</i>	97
<b>7 Cinnamon and Cassia</b> <i>N.K. Leela</i>	124
<b>8 Clove</b> <i>N.K. Leela and V.P. Sapna</i>	146
<b>9 Nutmeg and Mace</b> <i>N.K. Leela</i>	165
<b>10 Coriander</b> <i>V.A. Parthasarathy and T. John Zachariah</i>	190
<b>11 Cumin</b> <i>Shamina Azeez</i>	211
<b>12 Fennel</b> <i>Shamina Azeez</i>	227

<b>13 Fenugreek</b>	242
<i>N.K. Leela and K.M. Shafeekh</i>	
<b>14 Paprika and Chilli</b>	260
<i>T. John Zachariah and P. Gobinath</i>	
<b>15 Vanilla</b>	287
<i>Shamina Azeez</i>	
<b>16 Ajowan</b>	312
<i>T. John Zachariah</i>	
<b>17 Star Anise</b>	319
<i>B. Chempakam and S. Balaji</i>	
<b>18 Aniseed</b>	331
<i>N.K. Leela and T.M. Vipin</i>	
<b>19 Garcinia</b>	342
<i>K.S. Krishnamurthy and V.P. Sapna</i>	
<b>20 Tamarind</b>	362
<i>K.S. Krishnamurthy, V.P. Sapna and V.A. Parthasarathy</i>	
<b>21 Parsley</b>	376
<i>Shamina Azeez and V.A. Parthasarathy</i>	
<b>22 Celery</b>	401
<i>K.S. Krishnamurthy</i>	
<b>23 Curry Leaf</b>	413
<i>V.A. Parthasarathy, T. John Zachariah and B. Chempakam</i>	
<b>24 Bay Leaf</b>	426
<i>V.A. Parthasarathy, T. John Zachariah and B. Chempakam</i>	
<b>Index</b>	435

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# Preface

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Spices are woven into the history of nations. The desire to possess and monopolize the spice trade has, in the past, compelled many a navigator to find new routes to spice-producing nations. In the late 13th century, Marco Polo's exploration of Asia established Venice as the most important trade port. Venice remained prosperous until about 1498. Portuguese explorer Vasco de Gama sailed around Africa's Cape of Good Hope to reach Calicut, India. He returned with pepper, cinnamon, ginger and jewels, and also deals for the Portuguese to continue trade with India.

Spices impart aroma, colour and taste to food preparations and sometimes mask undesirable odours. The volatile oils from spices give the aroma and the oleoresins impart the taste. There is a growing interest in the theoretical and practical aspects of the inner biosynthetic mechanisms of the active principles in spices, as well as in the relationship between the biological activity and the chemical structure of these secondary metabolites. The antioxidant properties of herbs and spices are of particular interest in view of the impact of oxidative modification of low-density lipoprotein cholesterol in the development of atherosclerosis. A range of bioactive compounds in herbs and spices has been studied for anticarcinogenic properties in animals, but the challenge lies in integrating this knowledge to ascertain whether these effects can be observed in humans, and within defined cuisines. Research on the structure activity relationships in spice components has become an exciting field since these compounds play a major role in the culinary, industrial and pharmacological fields.

Hence, we have attempted to compile all available information on the chemistry of spice crops such as black pepper, cardamom (small), cardamom (large), ginger, turmeric, cinnamon and cassia, clove, nutmeg and mace, coriander, cumin, fennel, fenugreek, paprika, vanilla, ajowan, star anise, aniseed, garcinia, tamarind, parsley, celery, curry leaf and bay leaf. To edit this book, we have used the current Indian expertise on spices and we have made every effort to collate all available information so that the book will be useful to researchers, industrialists and postgraduate students of agriculture, horticulture and phytochemistry. It will also be a very useful resource book for spice traders and processors. We are grateful to CABI for giving us the opportunity to edit this book and we are indebted to Ms Sarah Hulbert of CABI Head Office for her immense help in getting the book into final shape. She has answered an array of e-mails and strings of questions to help us in this venture and we thank her for her patience and assistance.

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