

Research Group Innovation Project SRCA-204:

Antimicrobial and phytochemical studies on some Indian spices against multi drug resistant human pathogens

Project Investigators: Dr. Varsha Mehra, Dr. Manisha Khatri, Dr. Rekha Mehrotra

Students: Manasvi Gupta, Palak Parashar, Monika Mittal, Nomita Gupta, Chhavi Sharma, Neha Chaudhary, Manisha Bansal, Dilraj Kaur, Jayanti Jha and Bhawna Mann

The project started with 10 undergraduate students from **Biomedical Science Department** and **Instrumentation Department** of **Shaheed Rajguru College of Applied Sciences for Women**. All the students worked very hard for the successful execution of the project. We selected three spices most commonly used in Indian cuisines namely Cardamom (*Elletaria cardamomum*), Clove (*Syzygium aromaticum*) and Black Pepper (*Piper nigrum*) for their antibacterial potential. Aqueous and Organic extracts of seeds were prepared and their phytochemicals were determined qualitatively as well as quantitatively. Antibacterial activity was assessed using agar diffusion assay, minimum inhibitory concentration and the effects were compared with some standard antibiotics. Furthermore these spices were checked for their antibacterial efficacy, when used in combination. Our preliminary results provided a basis for the use of these spices as antimicrobial agents as well as aqueous extracts showed good inhibitory activity in combination, which supported their use together in traditional food preparations. Recently our efforts culminated in a research paper accepted in the **Journal of Pharmacy Research** (for August issue). The research paper entitled “**Antibacterial potential of *Elletaria cardamomum*, *Syzygium aromaticum* and *Piper nigrum*, their synergistic effects and phytochemical determination**” highlights the results obtained so far.

Spices are considered as rich source of bio-active antimicrobial compounds and are indispensable components of Indian cuisines since ancient times. They have been used by people around the world to enhance the flavor and aroma of our foods, in food preservation and in treatment of clinical ailments. There are so many studies regarding antimicrobial potential of different spices, but very few studies have been carried out in a systematic manner. This view led us to carry out a research study in which we can isolate the phytochemicals from spices and check their antimicrobial activity. By funding and structural support in the form of innovation project **SRCA-204**, entitled **Antimicrobial and phytochemical studies on some Indian spices against multi drug resistant human pathogens**”, **Shaheed Rajguru College of Applied Sciences for Women**, and **Delhi University** gave us a chance to scientifically prove the antimicrobial effectiveness of spices.