



Anti-Bacterial Properties of Nigella Sativa

- Anjali Ranjan • Shruti Verma • Anjali Priya
- Shahla Yasmin

Received : November 2019

Accepted : March 2020

Corresponding Author : Shahla Yasmin

Abstract : An alarming increase in bacterial strains resistant to existing antimicrobial agents demands renewed efforts to find agents effective against these resistant bacteria. Synergistic combinations of various antimicrobial agents have been introduced as an extra successful strategy to overcome this problem. This study was undertaken to evaluate the antimicrobial property of *Nigella sativa* (Kalonji) essential oil on bacteria isolated from skin and its synergistic effects with ciprofloxacin (CF) and ofloxacin (OF). A total of fourteen (14) bacteria were isolated from skin and were characterized on the basis of Gram's staining and biochemical tests and then tested for their sensitivity to Kalonji oil alone and in combination with ciprofloxacin (CF) and ofloxacin (OF). The oil showed

pronounced antimicrobial activity which was more for Gram positive (+ve) bacteria than Gram negative (-ve) bacteria. A bigger clear zone of inhibition was observed upto 71.98 ± 0.02 and 69.49 ± 0.05 when the oil was combined with ciprofloxacin (CF) and ofloxacin (OF), respectively. The result indicated that *Nigella sativa* oil has inhibitory effect on bacteria. The study provides new insights about synergistic antimicrobial activity. Thus, we can conclude that this essential oil can be used as a bio-control agent to treat bacterial infections apart from its usual traditional uses.

Keywords: *Nigella sativa*; antibacterial activity; synergistic activity; ciprofloxacin; ofloxacin.

Anjali Ranjan

B.Sc. III year, Zoology (Hons.), Session: 2017-2020,
Patna Women's College, Patna University, Patna,
Bihar, India

Shruti Verma

B.Sc. III year, Zoology (Hons.), Session: 2017-2020,
Patna Women's College, Patna University, Patna,
Bihar, India

Anjali Priya

B.Sc. III year, Zoology (Hons.), Session: 2017-2020,
Patna Women's College, Patna University, Patna,
Bihar, India

Shahla Yasmin

Head, Department of Zoology, Patna Women's College,
Bailey Road, Patna-800 001, Bihar, India
E-mail : shahla_apex@yahoo.co.in

Introduction:

Many developed as well as developing countries are facing problems related to infectious diseases that cause mortality and morbidity (Lewis and Ausubel 2006). In human body bacteria are found on both inner and outer surfaces especially on the skin and mucous membranes. Most of these bacteria are harmless, many of them are beneficial and a few are even necessary. However, there are some bacteria which are categorized as pathogens, which are able to colonize, invade and damage the host and cause illness (Baceiro et al., 2013). Treatment by antibiotics is one of the approaches of modern medicine to treat diseases caused by pathogene. The "Golden Era" of antibiotics from 1930s to 1960s gave rise to many antibiotics