SHORT SUMMARY OF THE WORK DONE ON THE UGC MINOR RESEARCH PROJECT

Title of the Research Project	**:**	**Phytochemical Screening of different Indian Medicinal and Flowering Plants: Determination of active principles, evaluation of antiperoxidative and various protective potentials in vitro as well as their impact over fish physiology.**
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Summary of the Findings

B. monosperma, is a species of Butea native to tropical and sub-tropical parts of the Indian Subcontinent and Southeast Asia, ranging across India, Bangladesh, Nepal, SriLanka, Myanmar,Thailand, Laos, Cambodia, Vietnam, Malaysia, and western Indonesia. Common names include Palash, Dhak, Palah, Flame of the Forest, Bastard Teak, Parrot Tree, Keshu (Punjabi) and Kesudo (Gujarati). Taken in the present study for its pre evaluated protective role as hypoglycemic, antiarthritic agent etc.

N. oleander is an evergreen shrub or small tree in the dogbane family *Apocynaceae* and is planted throughout the tropical region of the world as garden and roadside trees. Taken in this study due to its Previously known cardiotonic, antibacterial, anticancer and anti platelet aggregation activities and also its depression in the central nervous system have been reported from these species

M. ferrea flowers, leaves, seeds and roots are used as herbal medicines in India, Malaysia, etc. and in Nag Champa incense sticks. In eastern state of Assam, India, its seeds were also used for lighting purpose in evening for day to day purpose (while mustard oil for religious and health and culinary purposes) before the introduction of kerosene by the Britishflowers.

B. monosperma, N. oleander and M. ferrea flower ethanolic extracts were prepared and all the extracts were assessed for their phytochemical composition, antioxidant, antiperoxidative, antibacterial and biomolecule protective potentials viz. in vitro Radical scavenging assay, cellular protection assay, Lipid peroxidation inhibitory assay, DNA damage protective, protein carbonyl inhibitory potential etc. These extracts also assessed at their in vivo levels on model fish H. fossilis. In vivo antioxidant and DNA protective potentials of flower extracts were carried out throughout the study. The results obtained showed enormous potentials of all three flower extracts at their in vitro as well as in vivo level. M. ferrea flower extracts showed the greatest potential of antioxidant ability and in vitro as well as in vivo protective roles. All these three flowers were selected for this study because of their pre observed medicinal importance in ayurveda and natural medicine practices. To reveal the molecular mechanism of their medicinal importance, we undertaken the study and design this study on animal model too.

Among all three flower extracts, M. ferra flower extract reflected greatest ability to defend against oxidative stress conditions and free radical induced molecular damage which is proved in obtained result.

The ability of antioxidant defense of B. monosperma and N. indicum was also significant and both these flowers can also be used as therapeutic system.

We found that flowers can reduce the oxidative stress conditions as they were previously used as ashes and extract to treat various ailments in ayurvedic and herbal medicine, so the attempts to be made for development of good therapeutic molecule may be undertaken to reduce the availability of safe therapeutic molecule. Such antioxidant systems can be used for treatment of various ailments in current days and used as combination with other mode of therapies like allopathic and Homeopathic medicine.

The obtained results concludes the future therapeutic use of these three and many other flowers which have medicinal abilities and in possible treatment of oxidative stress, debility, metabolic disorders and in organ dysfunction such as renal stone formation, liver dismetabolism etc.

The literature mentioned in ancient ayurveda and folk medicine, the use of plants and their extracts are accounted beneficial effects in treatment of many diseases as well as fatigue related to antioxidant disturbance called Durbalata in ayurveda physiology and now a days called oxidative stress. The Data of present study reflected enormous potential of radical reduction and antioxidant defence mechanism. So the Study concluded as an example to study more on flowers and medicinal plants and their use in natural, herbal and folk medicine to develop them as good therapeutics.

It is also suggested that the phyto extracts may be processed as nano particles to develop their pharmacological potentials.