

Project title: Nutritional and quality evaluation of selected wild edible plants as a source of functional food

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• Overview of project : The project aimed to assess the nutritional, and biochemical composition as well as bioefficacy of selected wild edible fruits, including *Rhus parviflora*, *Rubus ellipticus*, *Rubus niveus*, *Ficus palmata*, and *Coriaria nepalensis* from Uttarakhand. Wild fruits, increasingly recognized for their nutraceutical value, are potential sources of bioactive compounds for functional foods. While commercial fruits' nutritional and bioactive profiles are extensively studied, there's a dearth of comprehensive investigation on wild edible fruits. Proximate analysis revealed substantial nutrients viz: carbohydrate, protein fat, fiber and vitamin C, and quantification of bioactive polyphenols demonstrated positive correlations with antioxidant activity. The significant polyphenolic content suggests these fruits as valuable natural antioxidant sources, emphasizing their potential for nutritional enhancement and functional food development.

Objectives :

1. Proximate and nutrient analyses of selected wild edible for assessing their nutritional significance.
2. Phytochemical analysis of selected species for estimation of total polyphenolics, flavonoid, anthocyanin and ascorbic acid content.
3. Assessment of antioxidant activity of fruits by different assay methods.
4. Correlation studies of nutrient and bioactive composition and antioxidant capacity.

Significant findings / outcome : The study unveiled the physicochemical and nutritional values of Uttarakhand's *Rhus parviflora*, *Rubus ellipticus*, *Rubus niveus*, *Ficus palmata*, and *Coriaria nepalensis* fruits. Qualitative screening identified their diverse bioactive compounds, aiding botanical identification and quality control. Optimal extraction solvents were identified for maximum yield of phytochemicals. Extractive values indicated their nutritional and therapeutic potential. Evaluation of phenolic, flavonoid, anthocyanin, and ascorbic acid content suggested varying but significant amounts of these phytochemicals across species. Antioxidant activities of the fruits extracts correlated with their total phenolic content which emphasized their potential as natural antioxidants for nutritional and therapeutic applications

Conclusion: The study elucidated the diverse bioactive compounds and nutritional values in Uttarakhand's wild grown *Rhus parviflora*, *Rubus ellipticus*, *Rubus niveus*, *Ficus palmata*, and *Coriaria nepalensis* fruits. Identification of optimal extraction solvents and correlation of antioxidant activity with total phenolic content highlight potential of these fruits as valuable natural sources for functional foods, emphasizing their significance in nutrition and health.

- **Extension aspect / Practical utility of the findings :** The findings offer income opportunities for NTFPs collectors, SHGs, farmers, tribals, and NGOs through the collection and primary value addition of wild edible fruits. Entrepreneurs can utilize the results for processing these fruits into dietary supplements or functional foods. The nutritional knowledge may promote the use of wild fruits as nutritious supplements, aiding health. Brochures and awareness campaigns can disseminate findings amongst stake holders. The outcome of study may encourage SFDs towards conservation and plantation of these fruit plant species

Any 01 or 02 Images /Graphics (jpeg/png) of the research project
(note : a single image / graphics can be designed to communicate the overall message of the research finding)



Rhus parviflora



Rubus ellipticus



Rubus niveus



Coriaria nepalensis



Ficus palmata