

Indigenous herbal medicines in controlling blood sugar

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Introduction & Aim: Indigenous herbal medicinal plants were in use in the Nepalese community long before synthetic medicine even came into existence. Still, in the most part of Nepal, herbal medicines are considered the first option as the preventive as well as a curative measure for different diseases, despite lacking the scientific evidence. In addition, Ayurveda also highlighted the use of medicinal plants for different health purposes e.g. *Gymnema sylvestre* (diabetes being the major ones). This research aims to highlight the importance of different indigenous herbal medicines in controlling blood sugar and bring the best out of them.

Methodology: Collection of indigenous medicinal plants, shade drying and moisture content determination of 18 plant samples followed by 90% methanolic extraction and subsequent evaporation using rotary vacuum evaporator. *In vitro* α -amylase and α -glucosidase inhibition activity were performed taking acarbose as a standard drug and laboratory protocols were strictly maintained. Percentage inhibition was calculated in triplicate manner and data indicates mean \pm standard error of three independent experiments and 50% inhibitory concentration (IC₅₀) values were then subsequently calculated for both α -amylase and α -glucosidase inhibition assay using software Prism 5 volume 5.0.

Results: IC₅₀ value on α -amylase inhibitory activity calculated suggested that, *Trigonella foenum*, *Asparagus officinalis*, *Ocimum basilicum*, *Calendula officinalis*, *Cannabis sativa* showed comparatively high potential whereas comparatively efficient α -glucosidase potency was found to be of *Asparagus officinalis*, *Hordeum vulgare*, *Cannabis sativa*, *Ocimum basilicum* and *Calendula officinalis*. Also, result from *Syzygium cumini* (seed), and *Terminalia arjuna* were found inconclusive and rest of the sample showed medium to very little anti-diabetic potency.

Conclusion: Most of these herbal medicines showed dose-dependent anti-diabetic potency and also highlights the role of indigenous medicinal plants in preventing/controlling blood sugar. Further research is crucial in achieving the foresighted milestone.

Biography

Dirghayu K C has completed his Bachelor's degree in Food Technology from College of Applied Food and Dairy Technology and Master's degree in Nutrition and Dietetics from the same college. He was working as a Quality Control Executive in different food processing industries before joining Nepal Health Research Council (NHRC). He is currently affiliated with NHRC as Nutrition Research Officer and taking active participation on its research and training conducted.

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