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Assessment of protective antioxidant mechanisms in some ethno medicinally important wild edible fruits of Odisha, India

Uday Chand Basak

Regional Plant Resource Centre, India

Abstract

Fruits and vegetables have now been documented as nutraceuticals or functional foods useful for health and medical benefits including prevention and treatment of diseases. With the background of ethno medicinal evidences and the view to utilize the wild fruit resources of Odisha, India as functional food enriched with antioxidants, 4 wild edible fruits were studied for *in vitro* radical scavenging activity and antioxidant enzymes such as Peroxidase, Catalase and Superoxide dismutase (SOD) following standard methods. It was found that the fruit with highest DPPH scavenging activity is *Antidesma ghaesembilla* (1020.6 AEAC mg/100g dwt) and the lowest recorded in *Morinda tinctoria* (235 AEAC mg/100g dwt). The highest FRAP value was recorded in *Antidesma ghaesembilla* (2114 µM AEAC/g dwt) and the fruit with lowest FRAP value was *Careya arborea* (538 µM AEAC/g dwt) *Antidesma ghaesembilla* showed the highest Peroxidase value of 1.12 OD/min/g tissue wt while the lowest was found in *Morinda tinctoria* (0.054 OD/min/g tissue wt). Catalase was found in high amounts in *Antidesma ghaesembilla* (5.4×10^4 IEU/ g fresh tissue), the lowest value was observed in *Dillenia pentagyna* (1.2×10^4 IEU/ g fresh tissue). Similarly for superoxide dismutase (SOD), the highest value was recorded in *Morinda tinctoria* (4.43 Δ OD/min/mg protein) and lowest in *Careya arborea* (1.12 Δ OD/min/mg protein). Current research reveals that these wild edible fruits, especially *Antidesma ghaesembilla* are rich source of antioxidants and can further be subjected to identification of individual compounds responsible for such high antioxidant activity.

Biography

Uday Chand Basak has completed his Ph.D from Utkal University, Odisha, India and continuing research work in the field of plant physiology and biochemistry as Scientist in Regional Plant Resource Centre, a premier R&D Institute of Forest and Environment Department, Govt. of Odisha. He has published more than 45 papers in reputed journals.