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RESEARCH ARTICLES

Comparative Antioxidant potential of two drought resistant medicinal plants of Rajasthan: *Prosopis cineraria* and *Capparis decidua*

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Abstract
The aim of this study was to assess and compare the antioxidant potential and total phenolic content of ethanolic and aqueous extracts of the fruits of *Prosopis cineraria* and *Capparis decidua*. Free radical scavenging activity of the extracts in the concentration range 0.5–40.0 mg/cm^3 was determined by DPPH (2,2-diphenyl-1-picrylhydrazyl) assay using BHT as a standard. IC_{50} values for the ethanolic and aq. extracts of *P. cineraria* (7.026 ± 0.088 mg/cm^3 and 4.097 ± 0.033 mg/cm^3) were found to be significantly ($p \leq 0.05$) lower than the corresponding extracts of *C. decidua* (47.538 ± 0.040 mg/cm^3 and 14.066 ± 0.039 mg/cm^3). Total phenolic content for the aq. extract of *P. cineraria* (3.512 ± 0.013 mg GAE/g) was significantly ($p \leq 0.05$) higher than aq. extract of *C. decidua* (2.142 ± 0.032 mg GAE/g), whereas the ethanolic extracts of the two plants did not show any significant difference in their phenolic content. The FRAP value for the aq. extract of *P. cineraria* (17.951 ± 0.026 mg Fe(II) eqv/g) and *C. decidua* (21.343 ± 0.009 mg Fe(II) eqv/g) was significantly ($p \leq 0.05$) higher than their corresponding ethanolic extracts (2.742 ± 0.023 and 2.313 ± 0.020 mg Fe (II) eqv/g). The reducing capacity by ferrozine assay for the ethanolic and aq. extracts of *P. cineraria* (4.767 ± 0.4877 and 10.370 ± 0.005 mg AE/g) were significantly ($p \leq 0.05$) higher as compared to the ethanolic and aqueous extracts of *C. decidua* (0.160 ± 0.136 and 1.537 ± 0.046 mg AE/g).

Keywords Antioxidant · *Prosopis cineraria* · *Capparis decidua* · DPPH · FRAP

Introduction

Reactive oxygen species (ROS) like superoxides, hydroxyl radical and hydrogen peroxide are generated in the body as a result of various biochemical processes. An excessive accumulation of these ROS can lead to oxidative stress. There are evidences that oxidative stress can play a major role in pathogenesis of numerous diseases like diabetes (Sanders and Watkins 2003) cardiovascular and renal diseases.

Antioxidants inhibit or delay the action of these ROS and prevent the body from oxidative stress. Today there is increasing need for research into natural antioxidants since the alternatively available synthetic ones are known to show carcinogenicity and toxicity to livers (Grice 1986; Wichi 1988) and other ill effects.

Prosopis cineraria is a small evergreen drought resistant tree, belonging to the Leguminosae family and is mainly found in the hot and dry deserts of Arabia, Rajasthan, Haryana, Punjab, Gujarat and Western Uttar Pradesh regions in India (Malik et al. 2013). It is the state tree of Rajasthan and due to its holistic usefulness as food and medicine it is also attributed as "wonder tree" and "king of the desert" (Malik et al. 2013). Overall, the tree is known to possess antibacterial, antifungal, anticonvulsant, antihyperglycemic, analgesic, antihelmuthic, anti-cancer, antidepressant, apoptotic and antioxidant activity (Khandelwal et al. 2015; Pareek et al. 2015).

The pods of *Prosopis* are locally known as "sangri". Although the pods are ripened during June to August, they are dried, stored and consumed as a part of numerous Rajasthani dishes throughout the year. The pods are rich in carbohydrates, proteins, fiber and have low fat content making it beneficial for obesity management (Rani et al. 2013) and also provide a remedy for numerous diseases (Chogem et al. 2007).

Capparis decidua commonly known as "kair" belongs to the Capparidaceae family and grows either as tree or shrub

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Narrative Strategies of Decolonisation: Autoethnography in Mamang Dai's *The Legends of Pensam*

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Abstract
According to John Quintero, "The decolonisation agenda championed by the United Nations is not based exclusively on independence. It is the exercise of the human right of self-determination, rather than independence per se, that the United Nations has continued to push for." Situated within ontologies of the human right of self-determination, this paper will focus on an analysis of *The Legends of Pensam* by Mamang Dai, a writer hailing from the Adi tribe of Arunachal Pradesh, to explore the strategies of decolonisation by which she revitalizes her tribe's cultural enunciations. The project of decolonisation is predicated on the understanding that colonialism has not only displaced communities but also brought about an erasure of their epistemologies. Consequently, one of its major agenda is to recuperate displaced epistemic positions of such communities. In the context of Northeast India, the history of colonial rule and governance has had long lasting political repercussions which has resulted not only in a culture of impunity and secessionist violence but has also led to the reductive homogeneous construction of the Northeast as conflict ridden. In the contemporary context, the polyethnic, socio-cultural fabric of the Northeast borderlands foregrounds it as an evolving post-colonial geopolitical imaginary. In the light of this, the objective of this paper is to arrive at the ramifications of employing autoethnography as a narrative regime by which Mamang Dai reaffirms the Adi community's epistemic agency and reclaims the human right towards a cultural self-determination.

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ENHANCED PRODUCTION OF LACCASE BY MICROPARTICLE INDUCED CULTIVATION OF BASIDIOMYCETES AND EVALUATION OF ITS EFFICIENCY AS DEINKING AGENT

View Abstract

pdf

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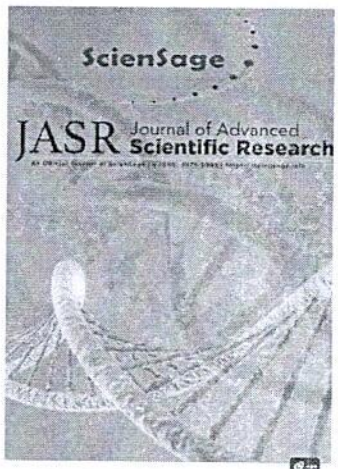
Abstract

Recycling paper is worthy alternative to cut down the dependence on trees thereby preventing the hazards like deforestation. Deinking is an important step in the recycling process which involves the removal of ink particles from fiber surface and decolorization of the dislodged ink. Enzymes such as laccases may prove eco-friendly cost effective alternatives to the conventional chemicals methods used for the recycling process. However, the commercial application of this enzyme is limited by insufficient production and less stability. Hence, in this study, the laccase produced by basidiomycetes species, P. ostreatus was evaluated for its potential as a deinking agent. P. ostreatus was able to grow on many cheap substrates and when grown in the medium containing sawdust showed significant laccase production. Addition of 5g/L of Al_2O_3



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Role of Stress and Sex Hormones on Emotional Memory

Binita Vedak, Divya Sinha, Hemalatha Ramachandran

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The number of women suffering from disorders related to the menstrual cycle like PMS is ever increasing, around 80% of women experience some form of physical and/or emotional discomfort during their luteal phase. Unfortunately, all the cases aren't reported and thus the diagnosis of PMS becomes difficult and its mechanism is still under study. Female reproductive hormones play a significant role in pathways that help in encoding, consolidation and recollection of memory, and this is possible due to interaction of these hormones with their receptors in various areas of the brain. Alongside to this is the role of stress hormones like cortisol, which hold significant value in influencing aspects of cognition, particularly memory related to emotional events, by binding to specific receptors on the amygdala. PMS is a gender specific stress and thus can be used to understand the correlation between hormones, stress and their combined effect on aspects of emotional memory. The review focuses on understanding this correlation and highlighting the role of CBT in relieving the symptoms of stress related disorders.

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Effect of Valproic Acid on Morphology and Behavior of *Hydra viridissima* Possibility of using *Hydra* for Screening Neuromodulators

Sheryl Alphonso [1], Pavan Pandit [1], Hemlatha Ramachandran [1], Anuttama Kulkarni [2]

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Nervous system of *Hydra* responds to mechanical, chemical, light and temperature stimuli, despite lack of organizational complexities like ganglion or sense organs. Nerve net of *Hydra* shows remarkable similarities with vertebrates at cellular and molecular level. Chemical and electrical synapses of *Hydra* modulate array of behavioral responses exhibited by *Hydra*. We have assayed toxicity and tested effect of Valproic Acid (VPA), an anti-epileptic drug on *Hydra*. We have performed whole animal toxicity testing, cytological staining using toluidine blue and assayed feeding behavior post VPA treatment. We conclude mild toxicity and loss of cell organization pattern in tentacles of *Hydra* upon prolonged VPA exposure. Our results indicate the possibility of using invertebrates like *Hydra* for screening of chemical modulators of molecular pathways.

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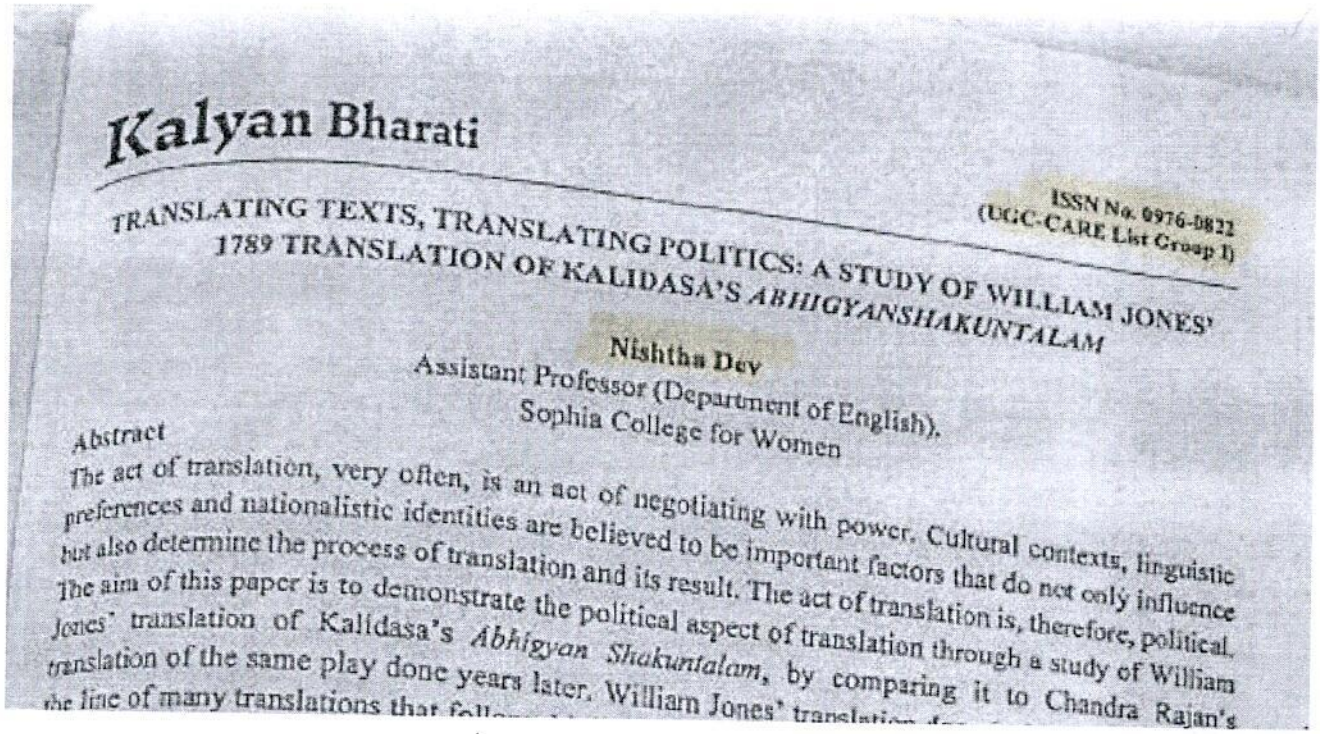

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TRANSLATING TEXTS, TRANSLATING POLITICS: A STUDY OF WILLIAM JONES' 1789 TRANSLATION OF KALIDASA'S *ABHIGYANSHAKUNTALAM*

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Abstract

The act of translation, very often, is an act of negotiating with power. Cultural contexts, linguistic preferences and nationalistic identities are believed to be important factors that do not only influence but also determine the process of translation and its result. The act of translation is, therefore, political. The aim of this paper is to demonstrate the political aspect of translation through a study of William Jones' translation of Kalidasa's *Abhigyan Shakuntalam*, by comparing it to Chandra Rajan's translation of the same play done years later. William Jones' translation [illegible] the line of many translations that follow[illegible]