Review of: "Acacia pycnantha gum exudates recognised as a traditional food in two countries may have economic potential"

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The abstract offers a comprehensive overview of *Acacia pycnantha* (AP), emphasizing its native habitat in the southern regions of Australia, particularly South Australia. It provides valuable insights into the gum exudation process from tree trunks and branches, especially during April, contributing to a better understanding of the harvesting procedures. The overall structure of the abstract is well-organized, presenting a clear and concise summary of crucial aspects related to AP and its economic potential. The inclusion of consumption standards and the call for additional research enhances the significance of this work within the contexts of both food and economic development i.e. [1][2].

The introduction delves into a detailed exploration of AP and its exudative gum, known as the golden wattle and recognized as Australia's floral emblem. By contextualizing AP alongside its global counterpart, Gum Arabic (GA), the introduction sets the stage for a comparative analysis, shedding light on the economic and health-related facets of these exudative gums. The distinctiveness between natural gum production in certain AP trees and the absence of a commercial industry for AP gum emerges as a notable point of discussion. This juxtaposition, coupled with the thriving multimillion-dollar GA industry, raises intriguing questions about the economic potential of AP gum and the factors influencing its under utilization.

The discussion on the chemical composition of AP and GA, emphasizing their similarities and the lack of fats or oils in both gums, enriches the comparative analysis. The mention of reported health benefits, particularly the gastro protective activity associated with GA, introduces a promising avenue for exploring similar properties in AP gum[3]. Skillfully integrating a socio-economic and ecological dimension, the introduction addresses the issue of Australian acacias' invasiveness in certain regions and their perceived limited or no commercial value. This broader perspective hints at the intricate interplay between economic considerations and environmental impact.

The materials and methods section offers a clear and detailed account of the procedures employed in the collection, processing, and utilization of AP gum. Specific details, such as the soft gum's weight (5-30g) and its direct edibility or preparation into smaller pieces for consumption or storage, enhance the reproducibility and clarity of the methodology. The acknowledgment of potential influences of seasonal conditions, rainfall, and location on gum production adds a valuable dimension to the understanding of AP gum harvesting.

The inclusion of information about the application to Food Standards Australia and New Zealand, resulting in the

recognition of AP gum as a traditional food with a recommended consumption limit, serves as pertinent context for the study. Considering the potential global implications of this recognition, especially for non-food uses like adhesives, draws attention to broader applications beyond the immediate focus.

In conclusion, the materials and methods section is meticulously crafted, providing a comprehensive and transparent account of the procedures employed in the study of AP gum. The attention to detail, clarity in presentation, and consideration of broader implications contribute to the overall strength of the methodology.

The results and discussion section effectively presents findings and engages in a thoughtful discussion regarding AP gum, comparing it to the widely recognized GA and addressing potential economic and practical implications. However, explicit connections between the quantitative data and subsequent economic and commercial considerations would enhance the clarity of the discussion. Elaborating on how the current yield per tree impacts the feasibility of commercial development or the potential for establishing demand would strengthen this aspect.

Insights into strategies or recommendations for overcoming challenges related to the high cost of labor and restrictions on harvesting AP gum from public land would add depth to the discussion. Furthermore, providing more examples or insights into non-food applications and the feasibility of entering such markets would strengthen this aspect of the discussion i.e. [4][5][6] [7][8].

In summary, while the results and discussion section provides valuable insights into the production, historical context, and economic considerations of AP gum, enhancing the explicit linkages between data and economic implications, exploring strategies to overcome challenges, and providing more depth to the discussion on non-food applications would contribute to a more robust and comprehensive analysis.

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