

*Abstract*

# Exploring the Nutritional Profile and Bioactive Potential of Australian Grown Saltbush (*Atriplex* sp.)<sup>†</sup>

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**Abstract:** Plant foods play a vital role in human nutrition due to their diverse range of macro- and micro-nutrients, fibre and phytochemicals. However, more than 90% of the plant-food demand is satisfied by less than 0.1% of the edible plant species available. Moreover, none of the highly consumed ‘food-plants’ can survive without freshwater irrigation. As the world’s population rises and food sources become limited, alternative avenues for satisfying the world’s food demand are necessary. This persistent situation urges the domestication of wild terrestrial salt tolerant (halophytes) edible plants, of which saltbush (SB) was found to have a long history of use as animal feed and soil erosion control, while very little scientific information is available on its nutritional profile and dietary relevance. Therefore, the present study assessed the nutrient and phytochemical composition of Australian grown oldman SB (*Atriplex nummularia*) leaves to better understand its nutritional ‘value’ and potential bioactivity. The proximate results showed that SB leaves were rich in protein ( $20.1 \pm 0.18$  g/100 g DW), fibre ( $41.5 \pm 0.20$  g/100 g DW) and minerals (particularly Ca ( $1.44 \pm 0.03$  g/100 g DW), Na ( $4.13 \pm 0.02$  g/100 g DW), Mg ( $0.90 \pm 0.01$  g/100 g DW), and Fe ( $11.68 \pm 0.35$  mg/100 g DW). These initial findings provide important nutritional information to a very promising plant source that could be used alone or synergetic with other foods (e.g., alternative protein and/or fiber source, potential salt substitute). However, further studies need to be carried out to determine the complete nutritional profile of oldman SB leaves, the bioaccessibility/bioavailability of its main nutrients and phytochemicals as well as consumer acceptance in order to develop SB based food products.

**Keywords:** aaltbush; australian grown; nutritional profile; bioactive potential

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