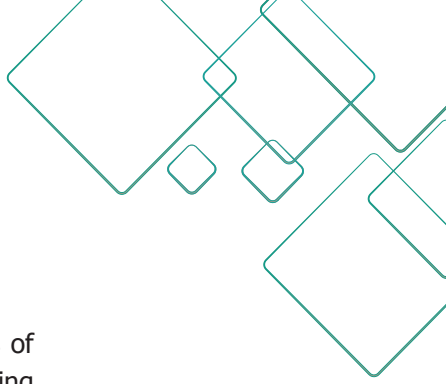




Research Relevance and Potential Impact

Though *Cyperus conglomeratus* is often found the only plant to colonize tops and slopes of shifting sand dunes in the UAE, only little is known about the physiological features enabling this plant to sustain growth on these extremely hot, dry and nutrient-poor sites. The present study is the first to provide experimental evidence for a greater ability of *C. conglomeratus* compared with cultivated C4 grasses to exploit mineral nutrient resources on sandy soils of the UAE. The role that specific root traits may play in this context is discussed. These findings lay the foundation for future exploitation of wild plant genetic resources in agriculture. Once physiological mechanisms behind desired plant traits are understood, the way to utilizing such information through plant breeding or gene transfer is paved.

Apart from novel insights into the nutritional physiology of *C. conglomeratus*, the present study also provides the first data on the yield potential of this plant when grown in agricultural production systems of the UAE. Wild plants native to hostile environments often maintain rather slow growth rates even when environmental conditions become more favorable. However, *C. conglomeratus* translated a moderate input of fertilizer and irrigation water into biomass production greater than that of Sudan grass, which is commonly grown in the UAE as an animal feed. Based on these findings, future research should exploit opportunities for the use of *C. conglomeratus* in animal fodder or biofuel production systems.

Relevant Publications

N/P

Career Aspirations

Through my PhD studies I broadened my knowledge, gained research experience, and was introduced into the international scientific community. What I have learned will enable me to pursue agricultural research of high quality in the future, and to obtain results that will contribute to the development of the agricultural sector of my Country. Since I believe that agricultural research and education is of particular relevance to food security and future development of the UAE, I hope to work on research and teaching in this field. This could be at a University, or another public or private institution involved in research and education.