

Moringa: An emerging California's low desert crop

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Introduction

Moringa (*Moringa oleifera*) is also known as drumstick tree, moringa tree, miracle tree, horseradish tree, ben oil tree (Ben oil pressed from moringa), etc. Some suggest that the genus name Moringa may have been derived from Tamil word, murungai, meaning "twisted pod", referring to the fruit. Its origin may have been India. Moringa is praised for a long list of benefits (including human & livestock feed) & attracted attention all over the world. It is particularly advocated for its fast growth, drought-tolerance. Moringa is also known for its adaptation to hot & dry environments, and adaptability / tolerance to marginal lands. With concerns over potential Colorado River water limitations, moringa could potentially be a drought tolerant alternative in the low deserts of California to common livestock forages (especially alfalfa) and for human nutrition additive.

	Fodder Leaves	Fodder Stem	Fodder Leaves and Stem	Tree Leaves	Tree Stem	Tree Leaves and Stem
Dry Matter	7.8	8.9	7.6	8.6	8.6	9.2
Crude Protein	21.9	8.8	15.3	23.5	10.9	16.4
Crude Fiber	4.5	20	14.5	7.5	26.5	17.5
NDF	8	28	16	11	36	21
ADF	6	21	12	6	26	15

Nutritional qualities of Moringa (abbas, 2013)

Objectives

We planned to develop research and extension program for moringa production in the low desert of California for both human and livestock consumption. Trials were conducted to test Moringa's adaptability and productivity competitiveness to commonly grown forage crops. At this point, we wanted to inform how the potential interests of growers and show how popular moringa is becoming in the low desert of California



Upper & lower side of tripinnate leaf of Moringa oleifera

Approaches / methods

- We tested Moringa along other conventional forage crops of the low desert at UC Desert Research and Extension Center (DREC) to determine planting, adaptability, production methods and its potential as a forage crop in the low desert.
- Seeds were direct planted, although Moringa can be raised from either seeds or cuttings.
- On the extension side, growers' assessments were conducted to identify moringa growers of Imperial County, their production methods, current uses, and potential future uses.
- Community based workshops were held to extend current research-based information on moringa and facilitate discussions between existing and potential future producers of moringa.
- Farm visits and phone calls were conducted to see production systems and real-time uses of moringa for human consumption and as a livestock feed.

Findings & current status

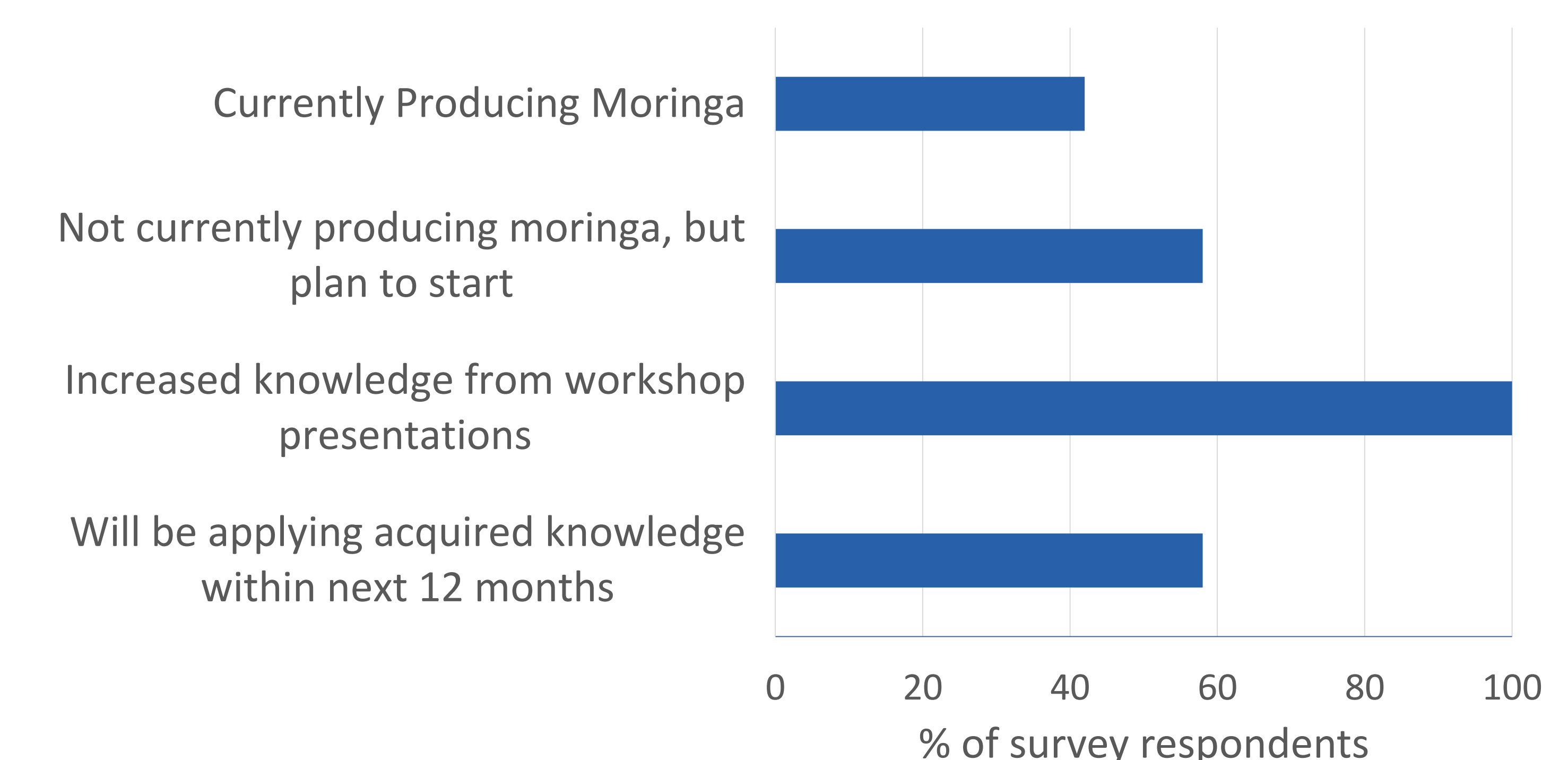
- Our trial with moringa was not successful. Moringa did not thrive / germinate at DREC. This might have been due to late season planting of the crop or viability of the seeds.
- Another proposal is underway to develop further research to identify specific production methods, biomass productivity and livestock nutritional quality.
- Although the trial at DREC was not successful, our survey of moringa production in the Imperial Valley showed that it is widely grown, mainly for human consumption and livestock feed
- Producers are using leaves, branches and seeds for livestock such as cattle, goats, and poultry.
- Producers are also using moringa for human consumption in fresh leaf, ground leaf powder, pellet forms & full seed forms.
- Most producers are small scale and relatively new to moringa production (within the last 5 years).



Moringa in Holtville, CA



Moringa can also be grown as a tree crop



Post-workshop survey responses

Summary

- Although, moringa did not thrive our trial at DREC, we observed excellent growth of moringa in various areas of the IV & Borrego spring (San Diego). These growth characteristics and productivity suggest that moringa is an emerging & potential alternative crop of the low desert
- In areas where moringa is grown, there were no visible insects, diseases, or weed problems.
- Post – workshop survey responses and in-person visits identify a large interest in future moringa production in the IV & elsewhere
- Further research is required to identify best growing practices for production as human & livestock feed.