

Fruit production in the mountain oasis Balad Seet in northern Oman

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Introduction

Little is known about the agricultural sustainability of the millennia old mountain oases in northern Oman. This study tries to partly fill this gap by reporting details of fruit production from one of the oases.

Material and Methods

The oasis Balad Seet (23.19° N, 57.39° E, 950-1020 m asl.) is located in a small valley of the Al-Hajar mountain range and surrounded by limestone cliffs up to 1200 m. GIS-based field research on orchards was conducted to investigate the structure and fruit tree diversity in orchards. Information about local knowledge and management of the orchards was gathered through farmer interviews.

Table. 1: Number of fruit species found in the oasis Balad Seet.

Fruit Species	Number of Individuals	Family	Local Name in Arabic
<i>Phoenix dactylifera</i> L.	2690	Palmae	Nakheel
<i>Citrus aurantiifolia</i> (L.) Swingle	325	Rutaceae	Laymun
<i>Citrus limettioides</i> L.	28	Rutaceae	Safardjal
<i>Citrus aurantium</i> L.	8	Rutaceae	Narinj
<i>Musa x paradisiaca</i> L.	219	Musaceae	Mous
<i>Vitis vinifera</i> L.	51	Vitaceae	Einab
<i>Punica granatum</i> L.	40	Punicaceae	Roman
<i>Ficus carica</i> L.	39	Moraceae	Tin
<i>Carica papaya</i> L.	20	Caricaceae	Fifai
<i>Prunus persica</i> L.	19	Rosaceae	Choch
<i>Morus nigra</i> L.	18	Moraceae	Forsad
<i>Mangifera indica</i> L.	15	Anacardiaceae	Ambe
<i>Psidium guajava</i> L.	5	Myrtaceae	Komathra
<i>Manilkara zapota</i> (L.) van Royen	1	Sapotaceae	Shiko

Results and Conclusion

Overall 15 fruit species and six under-utilized fruit species from 14 families were identified. A total of 2690 date palms (*Phoenix dactylifera* L.) comprising 16 varieties covered 8.8 ha of man-made terraced land. The palm groves are typical agroforestry systems in which date palms are interplanted with fruit plants such as banana (*Musa x paradisiaca* L.), lime (*Citrus aurantiifolia* [L.] Swingle), papaya (*Carica papaya* L.) and annual crops. The multilayered vegetation structure offers advantages in reducing soil erosion and allows the efficient use of water, nutrients, light and space.

In palm groves intensities of inputs such as manure, mineral fertilizers and irrigation water far exceeded outputs of harvests products for N, P and K. The surpluses were 303 kg N, 38 kg P and 173 kg K (ha yr⁻¹). Yields of the 1560 fruit bearing palms strongly depend on the variety and differed from 10 to 100 kg (palm yr⁻¹). High quality irrigation water, the elaborately built soil structure of the orchard terraces and adequate drainage are the main factors explaining the lack of salinization in this hyper-arid environment.

The data show that fruit production with a total of 3478 plants (395 plants ha⁻¹) is an important component of the oasis agriculture. However, specific horticultural know-how such as clone selection, pruning and grafting seems to be missing. All fruits are consumed by the households within the oasis and none are sold outside. In recent years the number of lime trees in the oasis declined by approximately 75% due to the rapid spread of the witches broom disease (*Crinipellis perniciosus* [Stahel] Singer).

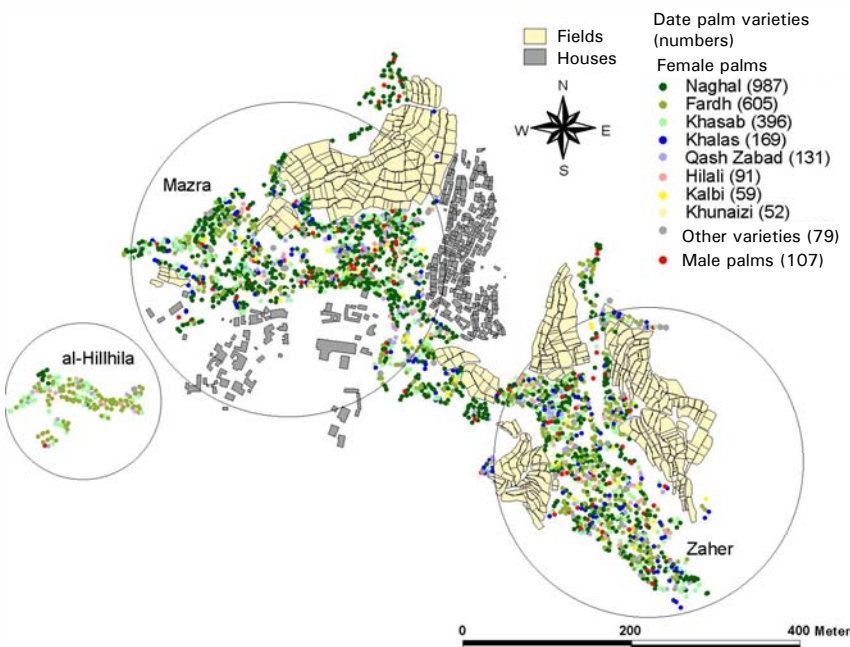


Figure 1: Distribution of the main date palm varieties in the oasis Balad Seet.

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