Morphological characterization of \textit{in-situ} variability in kair (\textit{Capparis decidua}) and its management for biodiversity conservation in Thar desert

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Kair [\textit{Capparis decidua} (Forsk.)] is one of the important indigenous multipurpose shrub of hot arid ecosystem with the ability to survive in various habitats unattended and unprotected. Besides many socio-economic and ecological benefits, it has a number of medicinal properties as the plants have significant pharmacological activities like hypercholesterolemic, anti-inflammatory and analgesic, antidiabetic, antimicrobial, antiplaque, antihypertensive, antihelmintic and purgative activities. CAZRI, RRS Jaisalmer have 1000 ha rangeland in which density of kair shrubs are more than 15 besides \textit{Zizyphus}, \textit{Acacia} and \textit{Prosopis} species. In natural population, rich genetic diversity with wide range of variability is available for plant types, bearing habit, fruit size, colour of fruits, spiny habit, plant spread and compactness of canopy, flower colour, time of flowering and fruiting, etc. In general two distinct plant types of kair occur, tree form having more than 5 m height whereas majority occurred as bushes. It appears that plant attains tree form when it grows from seed and remains undisturbed. On the other hand, plants that get exposed to biotic interference may tend to produce more shoots and also propagates through root suckers. There are lot of variation exists for spine length (2-5 mm) but plants with very less rudimentary spines and sometimes spineless also found in nature. Kair flowers throughout the year; February – March (\textit{Ambe Bahar}), July – August (\textit{Mrig Bahar}) and October – November (\textit{Hast Bahar}) but profuse flowering occurs only in \textit{Ambe Bahar} which gives quality fruits in ample quantity. A wide diversity in flower colour can be seen from light red to scarlet red but plants with yellow flowers also exist in the natural stands of rangeland. There are very wide range in tender fruit yield per plant under natural stands (100 g to more than 5.0 kg) as it depends on biotic factors and grazing pressure under rangeland conditions. A wide range of variability was observed during summer 2010 for fruit diameter (10.33 – 19.71 mm), fruit weight (0.77 – 5.24 mg) and number of seeds per fruit (3 – 27). The range for the test weight was 2.08 – 3.15 g. \textit{In situ} protection of ecosystems and \textit{ex-situ} conservation of genetic resources can help in using biological resources sustainably. Looking to the medicinal importance and ecological adaptation to harsh climatic conditions in Thar desert CAZRI, RRS, Jaisalmer started work on kair. Planting material (seeds/root suckers/cuttings) from different habitats are being collected and maintained for conservation of biodiversity in kair block of the station.