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“Filling gaps and removing traps  
for sustainable resource management”

## Ethnobotany of Wild Plants and Crop Wild Relatives in the Walnut-Fruit Forests of Kyrgyzstan

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### Abstract

The walnut fruit-forests, situated in the mountains in the southwest of the Kyrgyz Republic, are of unique importance for global biodiversity and refuge of genetic resources such as walnut, apples, pears, plums, and several other species. Simultaneously, local people derive from these forests significant economic and ecological benefits. However, extensive grazing, the intensive collection of firewood, nuts, and fruits have caused significant damage to these ecosystems. The traditional botanical knowledge on useful plant species remains underdocumented and ethnobotanical research should contribute to preservation and transmission of this threatened knowledge on younger generations. This research was undertaken to assess the relative importance of various species for local populations as well as purpose and frequency of their use. Data collection was carried out via the free listing method and semi-structured interviews with 146 informants from five different study sites (Arslanbob, Toskool-Ata, Kyzyl-Unkur, Salam-Alik, Kara-Alma), between July and September 2018. A total number of 88 plant species from 37 botanical families were documented. The plant species reported provide food (39), medicine (51), fuelwood (28), material (14), and animal feed. The data collected included plant vernacular names, plant part used, particular uses, gathering sites and level of commercialisation. The most frequently documented families included Rosaceae, Asteraceae, Lamiaceae, and Polygonaceae. The ethnobotanical data were further analysed through quantitative indices, i.e. use reports, relative frequency of citation, use value, and cultural value. According to Use reports, the most representative species were *Juglans regia*, *Malus niedzwetzkyana*, *Malus sieversii*, *Prunus divaricata*, *Crataegus* spp., *Acer semenovii*, and *Acer turkestanica*. The results showed that walnuts, apples, and mushrooms were important sources of income for the communities studied.

**Keywords:** Biodiversity, forest, traditional knowledge, useful plants