Ethnobotanical Study of Medicinal Plants Commonly Used by Bedouins in the Badia Region of Jordan

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Approximately 363 species of vascular plants belonging to 263 genera and 86 families, and which comprise about 20% of the total flora of Jordan, are considered medicinal plants. Oran and Al-Eisawi, (1999).

*Anchusa strigosa*
Some of these plant species are mentioned in ethnobotanical studies and publications targeting different ecosystems in Jordan. (Al-Qura’n, 2005; Aburajai et al., 2007; Al-Qura’n, 2007; Hudaib et al., 2008, Takruri et al., 2008; Nawash, 2010).
Why Document Traditional Knowledge (TK) about Medicinal Plants?

Documenting TK is very important:

• due to the crucial health and economic part of biodiversity that the medicinal plants signify

• to conserve the medicinal and aromatic flora of Jordan for future generations

• to ensure Jordan’s sovereign rights over its genetic resources and their uses by first documenting them.
Study Objectives

1. Document the old generation’s traditional knowledge of the Badia region in using wild plants to treat health problems
2. Identify the key plant species used
3. Calculate the Use Value (UV) of the plant species and the Informant Consensus Factor (ICF) by category of health disorders
Interviewees

• The data was collected by interviewing 80 participants, of which 92% were over 50 years old and 21% were women.

• The women’s interviews were very important as women are considered to be experts on local medicinal plants.
Data Analysis

All citations were categorized into 10 ailments, namely:

Dental pain, gastrointestinal disorders, jaundice, renal problems (including kidney stones), general pain, respiratory disorders, wound healing, diabetes, skin problems and cancer.
Data Analysis

• The Informant Consensus Factor (ICF) was calculated to show the homogeneity of the information collected and the degree of overall agreement on the treatment of specific health disorders category.

• $ICF = \frac{n_{ur} - n_t}{n_{ur} - 1}$

• Where, $n_{ur}$ is the number of use citations in each category, and $n_t$ is the number of species used.
Data Analysis

• The use value (UV) was calculated to demonstrate the relative importance of the species known locally, Gazzaneo *et al.* (2005), as follows:

• $UV = \frac{\sum U}{n}$

• Where UV is the number of citations per species, and n is the number of informants.
Results
• A total of 34 plant species were mentioned to treat 10 general ailments by 80 interviewees.

• Four plant species are not native to Jordan.

*Bongardia chrysogonum*  
*Teucrium capitatum*

*Clove*  
*Ginger*
Informant Consensus Factor (ICF) for 10 Categorized Ailments Mentioned by the Informants

<table>
<thead>
<tr>
<th>Ailment category</th>
<th>No. of use citations</th>
<th>No. of species</th>
<th>% of all species</th>
<th>ICF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental pain</td>
<td>35</td>
<td>2</td>
<td>3.6</td>
<td>0.97</td>
</tr>
<tr>
<td>Gastrointestinal disorders</td>
<td>299</td>
<td>16</td>
<td>28.6</td>
<td>0.95</td>
</tr>
<tr>
<td>Jaundice</td>
<td>21</td>
<td>4</td>
<td>7.1</td>
<td>0.85</td>
</tr>
<tr>
<td>Renal problems</td>
<td>13</td>
<td>3</td>
<td>5.4</td>
<td>0.83</td>
</tr>
<tr>
<td>General pain</td>
<td>27</td>
<td>15</td>
<td>26.1</td>
<td>0.77</td>
</tr>
<tr>
<td>Respiratory disorders</td>
<td>18</td>
<td>5</td>
<td>8.9</td>
<td>0.76</td>
</tr>
<tr>
<td>Wound healing</td>
<td>11</td>
<td>5</td>
<td>8.9</td>
<td>0.6</td>
</tr>
<tr>
<td>Diabetes</td>
<td>1</td>
<td>1</td>
<td>1.8</td>
<td>0</td>
</tr>
<tr>
<td>Skin problems</td>
<td>5</td>
<td>5</td>
<td>8.9</td>
<td>0</td>
</tr>
<tr>
<td>Cancer</td>
<td>2</td>
<td>2</td>
<td>3.6</td>
<td>0</td>
</tr>
</tbody>
</table>
Use Value (UV) of Plant Species with Medicinal Value Mentioned by Local Bedouins
Use Value (UV) of Plant Species with Medicinal Value Mentioned by Local Bedouins

Plant species

Artemisia herba-alba  Achilles fragrantissima  Achillea santolina  Durosis anethifolia  Artemisia judaica  Teucrium capitatum  Matricaria aurea  Thymus bovei  Allium sativum  Paronychia argentea  Ecbaleium elaterium

Use Value
Use Value (UV) of Plant Species with Medicinal Value Mentioned by Local Bedouins

<table>
<thead>
<tr>
<th>Plant species</th>
<th>Use Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artemisia herba-alba</td>
<td>1.000</td>
</tr>
<tr>
<td>Achillea fragrantissima</td>
<td>0.900</td>
</tr>
<tr>
<td>Achillea santolina</td>
<td>0.800</td>
</tr>
<tr>
<td>Drosia anethifolia</td>
<td>0.700</td>
</tr>
<tr>
<td>Artemisia judaica</td>
<td>0.600</td>
</tr>
<tr>
<td>Teucrium capitatum</td>
<td>0.500</td>
</tr>
<tr>
<td>Matricaria aurea</td>
<td>0.400</td>
</tr>
<tr>
<td>Thymbus bovei</td>
<td>0.300</td>
</tr>
<tr>
<td>Allium sativum</td>
<td>0.200</td>
</tr>
<tr>
<td>Paronychia argentea</td>
<td>0.100</td>
</tr>
<tr>
<td>Ecbalium elaterium</td>
<td>0.000</td>
</tr>
</tbody>
</table>
Use Value (UV) of Plant Species with Medicinal Value Mentioned by Local Bedouins
Use Value (UV) of Plant Species with Medicinal Value Mentioned by Local Bedouins

Plant species

- Artemisia herba-alba
- Achillea fragrantissima
- Achillea santolina
- Ducrosia anethifolia
- Artemisia judaica
- Teucrium capitatum
- Matricaria aurea
- Thymus bovei
- Allium sativum
- Paronychia argentea
- Echium elatum

Use Value

0.000
0.100
0.200
0.300
0.400
0.500
0.600
0.700
0.800
0.900
1.000
Use Value (UV) of Plant Species with Medicinal Value Mentioned by Local Bedouins
Ducrosia anethifolia
Main Recommendation

The documentation of traditional knowledge on medicinal plants in Jordan in general, and the Badia region in particular, still needs more efforts at the national level, to prevent this valuable knowledge from being lost after the death of its old secret keepers.
• There are many valuable plant species that should be evaluated in pharmaceutical research and evaluated economically.
Jordan’s natural resource is its medicinal plants.

*Pistacia atlantica*
Thank you!

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