Biodiversity , vegetation measurements , and rehabilitation of foothills of Khanasser Valley (Southeast of Aleppo)

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Introduction The Khanasser Valley is located in northwestern Syria . The current biodiversity of this area is degraded and unpalatable species dominate this area (*Peganum harmala* , *Noaea mucronata*) . Two sites were selected in the foothills of Khanasser Valley to study the biodiversity , herbaceous and shrub biomass , species frequency , species density ; species cover% , and economic uses of native plants . At each site were three treatments : 1) open grazing , 2) fenced plot , and 3) improved fenced plot . The main objective of the study was to evaluate rehabilitation of degraded areas by planting adapted and palatable species of fodder shrubs and perennial grasses and legumes such as : *Poa bulbosa* , *Dactylis glomerata* , *Medicago radiata* ,*Salsola vermiculata* , *and Atriplex halimu* . The study was conducted during 1999-2004 .

Material and methods The study involved determining : 1) plant diversity , 2) vegetation characteristics (vegetation cover% , biomass of herbaceous and shrubs , species composition) , 3) plant community characteristics , 4) plant uses , and 5) selection of adapted and palatable species for improving sites .

Results A total of 120 species were observed in the fenced plot and the use of these species (palatable for sheep , medicinal plant , food , fuel , prevent erosion) were recorded . Only 50 species were found in the open grazing plot , and most of these species were unpalatable and poisonous .

Table 1 *Multiple uses of major native species .*

Species	Forage	Food	Improving soil fertility	Medicinal	Prevent erosion
Medicago radiata	√		√		
Hordeum murinum	√				
Teucrium polium	√			√	√
Capparis spinosa		√		√	√
Peganum harmala				√	√

Herbaceous biomass in the fenced plot was 485 kg/ha and in the open grazing plot was 100 kg/ha . Shrub biomass in the improved plot was 200 kg/ha , in the natural fenced plot was 40 kg/ha , while in the open grazing area was 7 kg/ha . The most common plant community contained *Hordeum murinum* and *Teucrium polium* . The highest species composition% was observed for *Hordeum murinum* with 42% and *Noaea mucronata* with 27% .

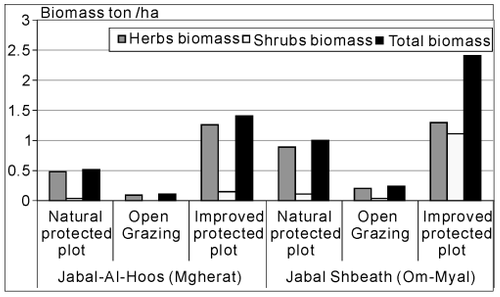

Figure 1 *Biomass (t/ha) for herbs , shrubs at two sites .*

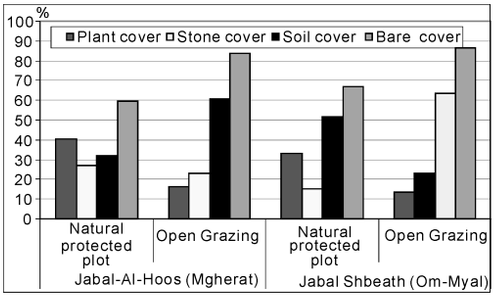

Figure 2 *Plant , stone , soil , bare cover% for two sites .*

The best adapted and palatable species on the improved site included : trees (*Pistacia atlantica)* , shrubs (*Atriplex halimus* , *Artemisia herba-alba* , *Haloxylon aphyllum* , *Salsola vermiculata*) , perennial grasses (*Oryzopsis miliacea* , *Phalaris tuberosa* , *Dactylis glomerata*) , and annual legumes (*Medicago radiata* , *Trifolium tomentosum* , *Astragalus asterias* , *Trigonella monspeliaca*) .

Reference

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