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Shrubs

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Fodder yield and nutritive value of Turkish highlands shrubs

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Introduction Information on productivity and nutritive value of Mediterranean highland shrubs, especially those preferred by goats on the Turkish Anti-Taurus Mountain (Amanos Mountains) region is limited (Papachristou, 2000; Ammar and Gonzalez, 2005; Larbi et al., 2007). Such data are needed to develop rangeland improvement plans and to prioritize shrub research. This study aimed at quantifying edible fodder yields and nutritional values of rangeland shrubs in the Anti-Taurus Mountains region in Turkey.

Materials and methods Data were collected during 2002-2003 at Candir village (1235 m asl) in Yayladagi County of Antakya on the Anti-Taurus Mountains. Annual rainfall average 75 mm, humidity 75%, with minimum and maximum temperatures of 6°C and 33°C respectively over a 30-year period. Three replicates measuring 5 m x 10 m were randomly selected at two rangeland sites and marked. biomass of shrub species in each replicate was measured using the reference unit method on: 6 April, 8 July, and 13 October 2002, and 15 January 2003. The sample branch leaves and twigs less than 10 mm in diameter (edible fodder, EF) were weighed fresh and oven-dried at 70°C for 48 h to determine dry matter (DM) content. Crude protein (CP, N x 6.25), neutral (NDF) and acid (ADF) detergent fibre, and *in vitro* organic matter digestibility (IVOMD) concentrations in the EF were determined.

Results Yield of EF (Fig. 1), and concentrations of CP, ADF and IVOMD in the EF varied ($P < 0.05$) among the shrubs, but NDF (Table 1) did not differ ($P > 0.05$). Positive and significant correlations were recorded between concentrations of CP and IVOMD ($r = 0.46$). In contrast, negative and significant correlation were recorded between concentrations of CP and ADF ($r = -0.72$), ADF and IVOMD ($r = -0.65$).

Table 1. Nutritive value of rangeland shrubs in Turkish Anti-Taurus highlands

Shrubs	Nutritive value (g/kg)			
	CP	ADF	NDF	IVOMD
<i>C. salviaefolius</i>	109	336	492	413
<i>D. sericea</i>	96	299	408	514
<i>J. oxycedrus</i>	59	363	417	356
<i>P. terebinth</i>	132	228	383	293
<i>Q. coccifera</i>	85	377	536	296
<i>S. officinalis</i>	116	272	431	457
LSD ($P < 0.05$)	22.2	75.6	116.1	53.4

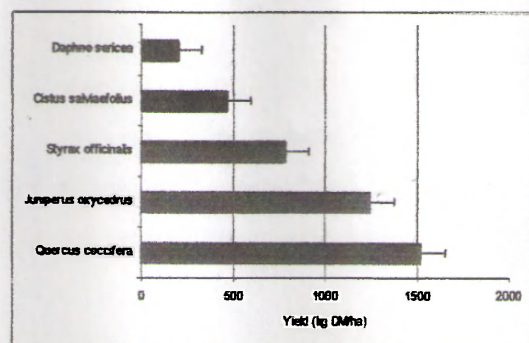


Fig 1 Edible fodder yield of Turkish highland shrubs

Conclusions Significant variations in EF yield and nutritive value among the shrubs agree with other reports (Papachristou, 2000; Ammar and Gonzalez, 2005; Larbi et al., 2007). *Quercus coccifera* and *S. officinalis* and showed greater potential for development of agroforestry technologies to increase the productivity of Anti-Taurus Mountains rangelands based on digestible organic matter yield.

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