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Metabolizable Energy

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Biondioni (1986)

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Crude Protein

Natural Detergent Fiber

Rayburn (1977)

Arzani (1994)

Ranjhan (1997)

Total Digestibel Nutrient

Pinkerton (1990)

Dry Mater Digestible

Cook et al. (1952)

Garza and Fulbright (1988)

Stoddart et al. (1975)

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Lithosols ,

( ) Calcic Cambisols, Calcaric Regosols

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*Stachys inflata* , *Thymus kotschyanus* ,  
*Artemisia austriaca* , *Kochia prostrata* ,  
*Acanthus dioscoridus* , *Galium verum* ,  
*Paronychia kurdica* , *Prangus ferulacea* ,  
*Astragalus effesus* , *Trifolium repens* ,  
*Lotus corniculatus* , *Coronilla varia* ,  
*Medicago sativa* , *Onobrychis sativa* ,  
*Melica jaquemontii* , *Stipa barbata* ,  
*Festuca ovina* , *Koeleria cristata* ,  
*Agropyron elongatum* , *Bromus tomentellus* ,  
*Dactylis glomerata* , *Hordeum violaceum* ,  
*Poa bulbosa*.

*Bromus*

*tomentellus – Festuca ovina*

NJ 38–10

A6M1

Chen et al. (2001)

Dongmei et al. (2001)

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*Onobrychis sativa*

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*Poa bulbosa*

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Khalil et al.( 1986)

Norton ( 2000)

Dongmei et al. (2001)

Arzani( 1994)

Buxton (1994)

(.)

/ L / R	/ M / R		<i>Stachys inflata</i>
/ N / ST	/ O / TU		<i>Thymus kotschyanus</i>
/ I / NO	/ HI / NO		<i>Artemisia austriaca</i>
/ MN / Y	/ OP / XY		<i>Kochia prostrata</i>
/ K / V	/ L / V		<i>Acanthus discoridus</i>
/ L / U	/ MN / U		<i>Galium verum</i>
/ J / PQ	/ IJ / QR		<i>Paronychia kurdica</i>
/ H / QR	/ G / Q		<i>Prangus ferulacea</i>
/ D / H	/ D / G		<i>Astragalus effesus</i>
/ E / K	/ DE / L		<i>Trifolium repens</i>
/ F / L	/ E / M		<i>Lotus corniculatus</i>
/ B / J	/ B / JK		<i>Cornilla varia</i>
/ C / J	/ C / K		<i>Medicago sativa</i>
/ A / G	/ A / F		<i>Onobrychis sativa</i>

/ S / W	/ S / W		<i>Melica persica</i>
/ U / XY	/ U / XY		<i>Stipa barbata</i>
/ L / OPQ	/ M / PQ		<i>Festuca ovina</i>
/ I / NOP	/ H / O		<i>Koeleria cristata</i>
/ R / YZ	/ R / XY		<i>Agropyron elongatum</i>
/ LM / ST	/ M N / S		<i>Bromus tomentellus</i>
/ R / VW	/ R / W		<i>Dactylis glomerata</i>
/ T / WX	/ T / X		<i>Hordeum bulbosum</i>
/ Y / Z	/ Y / Z		<i>Poa bulbosa</i>

**ADF**

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*Festuca*

*ovina* , *Bromus tomentellus*, *keoleria cristata*

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## Investigation of Phenological Stages and Harvest Year on Forage Quality of Rangeland Species in West Azarbaijan Province

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### Abstract

In this research, in order to determine the nutritional value of important vegetation species in certain climates, samples were selected from among 23 palatable and important plants that generally found in the ranges under consideration. The sampling was performed in two phenological stages in years 2004 and 2005. Then, the samples were chemically analyzed for the determination of their nitrogen and ADF content. The split plot method was used for the statistical analysis of data with respect to the arrangement of randomized complete block design in three replications of 46 treatments in each location. Plant species were taken as main factors and the growth stage was considered as the secondary factor and ranges played the role of replication. The characteristic studied was the forage quality (nutritional value) of the plants in various phenological stages in the course of two growth seasons. Following collecting data, in order to examine changes in forage quality of the species in various phenological stages and as well the mutual effects of the harvest year on the forage quality, the combined variance was analyzed using MSTAT-C software program and mean values were compared based on the Dunken test. Results show that chemical composition of the plants studied varies considerably and the phenological stage affects the forage quality significantly. Statistically, a significant difference between ADF content of the species in various phenological stages was not observed so that the study showed changes in a certain species in the years under consideration follow a single trend. The protein content of the species in different phenological stages of the harvest years also varied significantly.

**Key Words:** Phenological stages, Harvest year, Forage quality, Crude protein, Acid Detergenet Fiber