



## MINISTRY OF JIHAD-E-AGRICULTURE

Agricultural Research, Education and Extension Organization  
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### **Effect of different levels of pomegranate pulp extract in diet on performance of dairy goats**

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#### **Abstract**

This research was aimed to evaluate, the effects of Pomegranate pulp extract (PPE) in diet, on yield and milk composition of Mahabadi dairy goats. For this purpose, twenty pregnant female goats, averaging 3.5 olds of age and initial body weight of  $42.9 \pm 4.12$  (SD) kg, were selected in a flock and were randomly divided to four groups. One basal diet was prepared, then PPE included in 0, 35, 70, and 105 ml/kg DM. The experimental diets (treatments) contained; basal diet without PPE (control), basal diet plus 35 mli/kg DM PPE, basal diet plus 70 mli/kg DM PPE, and basal diet plus 105 mli/kg DM PPE. The diets were prepared in TMR, and were randomly assigned to animal groups. Feed intake, body weight gain, yield and milk composition, milk fatty acids profile, rumen fermentation parameters, and antioxidant activity, were recorded. Results showed, including levels of PPE to diet, did not effect on body weight gain, feed intake, milk's yield, glucose and fat, but increase the milk's protein, PUFA fatty acids, C18:2, and DHA, and decrease the SFA fatty acids, C16:0 'C18:n3, and  $\omega 6/\omega 3$  ratio ( $p<0.05$ ).

By including levels of PPE in diet, did not effect on pH, and ruminal total VFA, but decreased Ammonia-N ( $p<0.05$ ). By including levels of PPE in diet, antioxidant activity of milk, blood, and rumen increased ( $p<0.05$ ). In general, including levels of PPE in dairy goat's diet, increased milk's protein, fatty acids quality, and antioxidant activity. It could be concluded, that the extracting of Pomegranate pulp by using water instead of organics solvent, is recommend as a safe and less cost method.

**Keywords:** dairy goat, diet, pomegranate pulp extract, animal performance.