



## MINISTRY OF JIHAD-E-AGRICULTURE

Agricultural Research, Education and Extension Organization

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### **Determination of blood metabolites and fatty acids profile of meat and body fat from fattened kids fed by different levels of barley hydroponic fodder**

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#### **Abstract**

The effect of substitution of barley hydroponic at four levels of 0, 25, 50 and 75 percent instead of alfalfa on fatty acid profiles and some blood metabolites of Fars native kids was investigated. Twenty four kids with a mean initial weight of 21 kg and 6-7 months old were kept in a completely randomized design (4 treatments and 6 replicates) in individual cages with free access to water and feed. The length of the habitual period was 10 and the duration of the experiment was 80 days. At the end of the experiment and before slaughter of the kids, blood sampling was done from the vein. Then all of the kids were slaughtered and after measuring the different parts of carcass, fat samples were taken from subcutaneous fat, and meat of the thighs muscle. Fatty acid profiles and blood metabolites were measured in the samples of fat and bloods. There was a significant difference between treatments in the total of saturated and unsaturated fatty acids and the ratio of them in fat sample of thighs muscle ( $P < 0.05$ ). The transalaidic fatty acid in treatments that consumed barley hydroponic was lower than control group. The use of barley hydroponics led to an increase in the unsaturated fatty acids and a decrease in the saturated fatty acids in muscle meat. In subcutaneous fat, the percentage of hepta decanoic acid, stearic acid, linolenic acid, linoleic acid, total saturated fatty acids, total unsaturated fatty acids and the ratio of them were statistically significant between different treatments. ( $P < 0.001$ ). In subcutaneous fat of the kids fed with treatment 2 (25% replacement) the percentage of saturated fatty acids was lower than the percentage of unsaturated fatty acids. Since in this study the use of green hydroponic barley improves some of the quality factors of

meat, therefore, it can be said that in the case of hydroponic forage instead of alfalfa to 25% replacement, the quality of meat produced for the consumer is improved.

**Keywords:** Barley hydroponic, Fatty Acid, Meat Quality, Goat kids.