Comparison of Nutritive Value of two Iranian Safflower Seed Varieties for Animal Nutrition

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According to the fat sub-model of Cornell-Penn-Miner (*CPM 3.01*), the diets of high producing dairy cows supply up to 62% of the C18:2 released in milk. So, there is a challenge of supplying EFA (essential fatty acids) to meet production, reproduction and immune function in dairy cattle. In addition, increased demand for unique products, such as CLA, has opened a new research field for oilseed in dairy cattle nutrition. Safflower seed (*Corthamus tinctorius*) was recognized to contain the highest concentration of linoleic acid in all oilseeds, but in NRC, 2001 for dairy cows, there isn't any information about its value. The Objective of this study was to compare two varieties of Safflower seed cultivated in Iran (IL-111(**I**) and Native, (**N**)) with other oilseeds. The DM, CP, EE, NDF, ADF and ash fractions were determined according to AOAC procedures (1997). Data were analyzed using T-test (SAS 8) to evaluate differences among two varieties. Differences between two varieties of safflower and other oilseeds are shown in table 1**.** Except for CP others factors were different (P<0.01) in two safflower seed varities cultivated in Iran. The concentration of fatty acids was detected by GC (Gas Chromatography) and indicated that near 75% of total fatty acids in two varieties was linoleic acid (C18:2). In addition, differences among oilseeds are shown in table 2. Results from this study indicated that there are some advantages of using safflower seed in dairy cows diets however, additional investigation for chemical composition which may have negative impact on cows performances are needed.

Table1

	Difference	*Probability*
DMN - DMI	-1.73	*0.009*
CPN - CPI	-1.48	*0.0536*
EEN - EEI	9.58	*0.0010*
NDFN-NDFI	-13.9	*0.0017*
ADFN-ADFI	-11.93	*0.0061*
ASHN-ASHI	-0.57	*0.0068*

Table2

	DM%	CP%	EE%	NDF%	ADF%	ASH%
Safflower(N)	93.58	17.96	32.13	14.7	11.7	2.5
Safflower(I)	95.31	19.44	22.7	28.6	23.6	3.07
Soybean	89.9	20.5	40.5	17.8	11.6	4.6
Cotton seed	90.1	23.5	19.3	50	40.1	4.2
Sun flower	90	39.2	19.2	19.5	13.1	5.9
Canola	91.8	19.2	41.9	24	16.7	5.1