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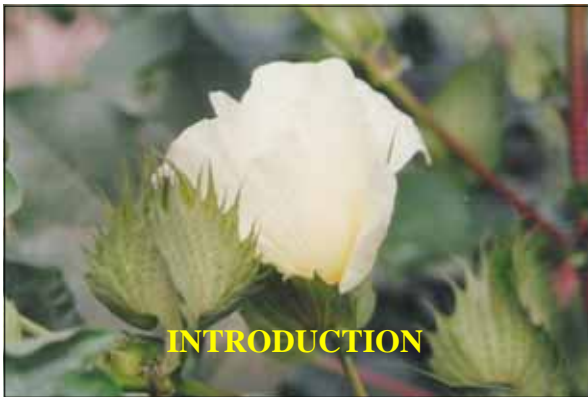
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AN INVESTIGATION ON SEED OIL CONTENT AND  
FATTY ACID COMPOSITION OF EARLY, MID  
AND LATE MATURING COTTON VARIETIES  
(*Gossypium hirsutum* L.) IN THE CUKUROVA  
REGION OF TURKEY

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**INTRODUCTION**

➤ Cotton crop is a very important source for the vegetable oil and feed industries too, besides being an indispensable raw material for the fiber and cellulose sectors in the world.

➤ With a 3.6 % of share, cotton oil production is in the fifth place in the world, while in the second place after sunflower oil in Turkey.

➤ Today, there is a big gap between the consumption and production of oil in Turkey.

➤ Furthermore, the vegetable oil sector has the second highest spending in foreign currency after the petroleum industry.

➤ Therefore, the oil containing seeds are amongst the most important raw materials on the economic agenda of the government today.

➤ Cotton planting area in Turkey has been the largest compared to other oil crops in Turkey.

➤ Correspondingly, the cotton oil production is the second highest after that of sunflower oil.

➤ Despite the significance of the subject matter however, studies on the variations in the contents and the composition of the oil of the cotton varieties produced in Turkey are very rare.

## OBJECTIVE

➤ The objective of this study was to investigate the oil content and fatty acids composition of the early, medium and late maturing cotton varieties grown in the Cukurova Region in Turkey.



➤ Three varieties (*G. hirsutum* L.) were used as the material.

➤ The experiment was in completely randomized block design with four replications.

➤ Conventional cotton growing practices were applied throughout the growing season.

- Seed cotton yield,
- Ginning percentage,
- Seed weight,
- Oil content,
- And the contents of fatty acids
- Such as

❖ Linoleic, oleic, palmitic, stearic, arachidic, myristic, behenic, EPA, lignoceric and heptadecanoic acids

were determined.



Table 1. Mean values of seed cotton yield, 100-seed weight, ginning percentages and oil contents of the investigated varieties

Varieties	Investigated Characteristics			
	Seed Cotton Yield (kg ha <sup>-1</sup> )	100-Seed Weight (g)	Ginning Percentage (%)	Oil Content (%)
C. 1518	5233 A	10.6 B	39.5	17.42 B
PAUM-15	4538 B	11.4 A	38.0	21.27 A
Deltaopal	4179 B	11.0 AB	38.0	16.48 B
LSD	362	0.55	N.S	0.95

Table 2. The mean values of the fatty acids contents of the investigated varieties

Characteristics	Varieties			
	PAUM-15	C. 1518	Deltaopal	LSD
Oil Percentage (%)	21.27 A	17.42 B	16.08 C	0.95
<b>Linoleic acid (%)</b>	<b>60.503 B</b>	<b>61.182 B</b>	<b>62.667 A</b>	<b>0.95 B</b>
<b>Palmitic acid (%)</b>	<b>22.350</b>	<b>22.275</b>	<b>21.425</b>	<b>N.S.</b>
<b>Oleic acid (%)</b>	<b>14.350 A</b>	<b>13.900 A</b>	<b>13.825 B</b>	<b>0.75 B</b>
<b>Stearic acid (%)</b>	<b>1.870 B</b>	<b>1.925 B</b>	<b>2.052 A</b>	<b>0.08 B</b>
Myristic acid (%)	0.558	0.540	0.480	N.S.
Arachidic acid (%)	0.170 A	0.132 A	0.075 B	0.055 B
Behenic acid (%)	0.095	0.075	0.070	N.S.
Heptadecanoic acid (%)	0.085	0.072	0.058	N.S.
EPA (%)	0.048	0.037	0.042	N.S.
Lignoceric acid (%)	0.040	0.050	0.032	N.S.



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