

The chemical analysis of *Jatropha curcas* oil is given in Table (1).

ITEM	VALUE
Acid value	38.2
Saponification value	195.0
Iodine value	101.7
Viscosity (31°C) "Fatty acid"	40.4
Palmitic acid %	4.2
Stearic acid %	6.9
Oleic acid %	43.1
Linoleic acid %	34.3
Other acids %	1.4

The comparison of properties of *Jatropha* oil and standard specifications of diesel oil are shown in Table (2):

Specification	Standard specification of <i>Jatropha</i> oil	Standard specification of Diesel
Specific gravity	0.9186	0.82/0.84
Flash point	240/110 °C	50 °C
Carbon residue	0.64	0.15 or less
Cetane value	51.0	50.0 up
Distillation point	295 °C	350 °C
Kinematics Viscosity	50.73 cs	2.7 cs up
Sulpher %	0.13 %	1.2 % or less
Calorific value	9 470 kcal/kg	10 170kcal/kg
Pour point	8 °C	10 °C
Colour	4.0	4 or less

The seeds were imported from India five years ago, and were cultivated in the southern part of Egypt and irrigated by treated sewage water. It is worth mentioning that the cultivation has been very successful. It is now producing seeds, and the next step consists in studying the best means of making use and of its oil product.

**Table (3) : Physical and chemical properties of diesel fuel and *Curcas* oil**

PROPERTY	CURCAS OIL	DIESEL OIL
Viscosity (cp) (30 °C)	52.6 (5.51) <sup>2</sup>	3.60
Specific gravity (15 °C/4 °C)	0.917/ 0.923 (0.881)	0.841 / 0.85
Solidfying Point (°C)	2.0	0.14
Cetane Value	51.0 (38)	47.8 .59
Flash Point (°C)	110 /340	80
Carbon Residue (%)	0.64	< 0.05 . < 0.15
Distillation (°C)	284 . 295	< 350 . < 370
Sulfur (%)	0.13 . 0.16	< 1.0 . 1.2
Acid Value	1.0 . 38.2	--
Saponification Value	188 . 198	--
Iodine Value <sup>3</sup>	90.8 . 112.5	--
Refractive Index (30°C)	1.47	--

**PROPERTIES COMPARISON BETWEEN JATROPHA OIL AND STANDARD SPECIFICATIONS OF DIESEL OIL**

PROPERTY	JATROPHA OIL	DIESEL OIL
Flash point	240/110 °C	50 °C
Carbon residue	0.64	0.15 or less
Cetane value	51.0	50.0 up
Distillation point (°C)	295 °C	350 °C
Kinematics Viscosity	50.73 cs	2.7 cs up
Sulphur %	0.13 %	1.2 % or less
Calorific value	9 470 kcal/kg	10 170kcal/kg
Pour point	8 °C	10 °C
Colour	4.0	4 or less
Viscosity (cp) (30 °C)	52.6 (5.51) <sup>2</sup>	3.60
Specific gravity (15 °C/4 °C)	0.917/ 0.923 (0.881)	0.841 / 0.85
Solidfying Point (°C)	2.0	0.14
Acid Value	1.0 . 38.2	--
Saponification Value	188 . 198	--
Iodine Value <sup>3</sup>	90.8 . 112.5	--
Refractive Index (30°C)	1.47	--

## PHYSICAL AND CHEMICAL PROPERTIES OF JATROPHA OIL

PROPERTY	JATROPHA OIL
Flash point	240/110 °C
Carbon residue	0.64
Cetane value	51.0
Distillation point ( °C)	295 °C
Kinematics Viscosity	50.73 cs
Sulphur %	0.13 %
Calorific value	9 470 kcal/kg
Pour point	8 °C
Colour	4.0
Viscosity (cp) (30 °C)	52.6 (5.51) <sup>2</sup>
Specific gravity (15 °C/4 °C)	0.917/ 0.923(0.881)
Solidfying Point ( °C)	2.0
Saponification Value	188 . 198
Iodine Value <sup>3</sup>	90.8 -112.5
Refractive Index (30 °C)	1.47
Acid value	1.0 - 38.2
Palmitic acid %	4.2
Stearic acid %	6.9
Oleic acid %	43.1
Linoleic acid %	34.3
Other acids %	1.4