

# EDIBLE OILS AND FATS - TRENDS IN RAW MATERIALS, PROCESSING AND APPLICATIONS

Tuesday 20 - Wednesday 21 March 2007  
InterContinental Hotel Citystars, Cairo, Egypt



## **Oilseeds of the Middle East: Conventional and Promising Uses**

Ismail H. Hussein, Abdalbasit A. Mariod, Mohamed A.  
Abusinn and Salah A. Elhussein

National Oilseed Processing Research Institute (NOPRI)  
University of Gezira, Sudan

This presentation focuses on oilseeds other than soybean, oil palm, olive or coconut i.e. it deals with peanut, sunflower, cottonseed, sesame and rapeseed with special reference to the Middle Eastern region.

**Table 1. Major oilseeds, World Production (Million Metric Ton)**

Oilseed	Season				Major producing countries
	2002/03	03/04	04/05	05/06	
Copra	5.12	5.38	5.59	5.59	
Cottonseed	32.67	35.60	45.32	42.51	China, USA, India
Palm Kernel	7.76	8.43	9.51	9.98	
Peanut	30.84	32.81	33.43	33.87	China, India USA
Rapeseed	32.91	39.43	46.14	48.55	China, Europe, Canada, India
Soybean	196.77	186.51	215.72	217.89	USA, Brazil, China, Argentina
Sunflower–seed	23.93	26.76	25.30	29.74	FSU12, Argentina, Europe
Total	330.01	334.93	381.01	388.12	

Source: USDA, FAS

**Table 2. Major vegetable oils, World Production (Million Metric Ton)**

Oil	Season			
	2001/02	02/03	03/04	04/05 *
Soybean	28.92	30.55	29.85	32.29
Palm	25.44	27.78	29.70	34.03
Sunflower	7.48	8.25	9.26	9.21
Rapeseed	13.06	12.25	14.20	15.71
Cottonseed	3.82	3.51	3.84	4.76
Peanut	5.12	4.56	4.95	4.96
Coconut	3.21	3.17	3.25	3.27
Olive	2.75	2.51	3.00	2.74
Palm kernel	3.12	3.36	3.67	4.1
<b>Total</b>	<b>92.92</b>	<b>95.94</b>	<b>101.70</b>	<b>111.07</b>

**\* Estimated**

**Source: Oilseeds: World Markets and Trade, Foreign Agricultural Service, USDA**

**Table 3. Oilseeds production and Oil import in the Middle East \***  
**a) Oilseeds production (Thousand Metric Tons)**

	Season			
Oilseed	2002/03	03/04	04/05	05/06
Cottonseed	1986	2054	2122	1894
Rapeseed	0	0	0	0
Soybean	235	166	165	140
Sunflower–seed	873	655	708	809
Other	90	85	80	80
Total	3184	2960	3075	2923

\* Middle East includes: Bahrain, Gaza Strip, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, Turkey, United Arab Emirates, West Bank and Yemen (according to USDA, FAS)

## b) Vegetable oil import (Thousand Metric Tons)\*

Oil	Season			
	2002/03	03/04	04/05	05/06
Palm	1619	2151	2195	2341
Rapeseed	10.0	3.0	8.0	1.0
Soybean	12.25	874	1011	936
Sunflower–seed	152	120	247	661
Other	54.0	59	70	51
<b>Total</b>	<b>3060</b>	<b>3207</b>	<b>3531</b>	<b>3990</b>

\* Middle East includes: Bahrain, Gaza Strip, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, Turkey, United Arab Emirates, West Bank and Yemen (according to USDA, FAS)

# Table 4. Oilseed Production (1000 MT)

COUNTRY	1997 - 2001 av.		2002		2003		2004	
	Area	Prod.	Area	Prod.	Area	Prod.	Area	Prod.
JORDAN	12.96	44.9	94.6	188.4	99.8	162.1	99.8	162.1
TUNISIA	278.7	112.1	1657.2	161.3	1664.5	373.6	1679.6	1415.5
ALGERIA	34.4	44.0	194.3	196.6	213.1	171.5	230.4	414.3
SAUDI Arabia	2.2	2.5	1.9	2.0	2.0	2.0	2.9	4.9
SUDAN	3183.2	1351.2	2526.7	1573.1	2647.3	1345.7	2495.2	1013.8
SYRIA	218.8	884.1	447.3	1351.3	436.12	1004.5	24.7	708.4
SOMALIA	43.1	25.1	83.5	60.0	95.9	70.2	119.0	63.8
Iraq	85.5	156.6	64.3	208.6	49.6	107.5	50.8	102.1
PALESTINE	19.9	30.1	89.3	143.9	93.1	143.9	93.1	85.3
KUWAIT	(.)	(.)	0.01	0.01	0.01	0.01	0.01	0.01
LEBANON	13.5	26.54	58.3	184.7	58.3	83.5	58.3	83.5
LIBYA	22.6	34.8	100.3	150.5	100.3	150.5	100.3	150.5
EGYPT	112.7	745.5	144.9	1072.5	148.4	956.2	158.5	979.9
MOROCCO	190.5	230.0	547.5	529.4	995.4	942.4	605.0	598.0
MAURITANIA	4.9	3.0	3.9	1.2	3.9	1.2	3.9	1.2
YEMEN	31.5	33.2	32.4	38.5	32.4	38.5	32.4	38.5
TOTAL	4254.3	3723.6	6046.5	5861.9	6640.2	5553.4	5741.6	5815.7

Source: AOAD

**Table 5. Groundnut production (1000 MT)**

COUNTRY	1997-2001 av.	2002	2003	2004
ALGERIA	3.95	4.62	3.84	4.30
SUDAN	937.80	1267.00	790.00	520.00
SYRIA	29.22	20.50	16.20	18.30
SOMALIA	1.40	3.24	4.18	9.46
IRAQ	22.40	38.00	21.00	34.00
LIBYA	3.37	0.50	0.50	0.50
EGYPT	166.33	191.04	195.87	190.43
MOROCCO	43.08	40.30	21.10	51.50
MAURITANIA	2.13	0.12	0.12	0.12
TOTAL	1209.68	1565.32	1052.81	828.61

**Source: AOAD**



**Table 6. Cotton seed production (1000 MT)**

COUNTRY	1997-2001 av.	2002	2003	2004
TUNISIA	3.00	3.00	3.00	3.00
SUDAN	128.02	165.10	154.70	202.80
SYRIA	664.10	521.40	527.00	669.00
SOMALIA	0.43	0.38	0.38	0.38
IRAQ	58.80	92.00	41.50	25.00
EGYPT	426.86	455.05	324.91	324.91
MOROCCO	1.03	0.46	0.60	0.60
YEMEN	15.37	19.86	20.06	11.89
TOTAL	1297.61	1257.25	1072.15	1237.58

Source: AOAD

**Table 7. Sunflower production (1000 MT)**

<b>COUNTRY</b>	<b>1997-2001 av.</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
TUNISIA	6.66	8.32	10.59	12.45
SUDAN	7.16	19.00	2.00	14.00
SYRIA	2.26	1.50	2.00	0.86
IRAQ	53.20	51.00	21.00	14.00
PALESTINE	0.01	0.01	0.01	(..)
EGYPT	35.18	35.35	33.31	47.31
MOROCCO	45.24	33.40	90.60	49.20
<b>TOTAL</b>	104.47	115.18	68.91	88.62

Source: AOAD

**Table 8. Sesame production (1000 MT)**

<b>COUNTRY</b>	<b>1997-2001 av.</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<b>JORDAN</b>	<b>0.08</b>	<b>0.10</b>	<b>0.08</b>	<b>0.08</b>
<b>SAUDI ARABIA</b>	<b>2.46</b>	<b>2.00</b>	<b>2.00</b>	<b>4.90</b>
<b>SUDAN</b>	<b>278.20</b>	<b>122.00</b>	<b>399.00</b>	<b>277.00</b>
<b>SYRIA</b>	<b>4.08</b>	<b>7.40</b>	<b>7.50</b>	<b>4.43</b>
<b>SOMALIA</b>	<b>8.11</b>	<b>2.76</b>	<b>2.84</b>	<b>54.00</b>
<b>IRAQ</b>	<b>20.80</b>	<b>22.00</b>	<b>20.00</b>	<b>26.00</b>
<b>PALESTINE</b>	<b>0.32</b>	<b>0.27</b>	<b>0.25</b>	<b>0.25</b>
<b>LEBNON</b>	<b>-</b>	<b>0.25</b>	<b>0.25</b>	<b>0.25</b>
<b>EGYPT</b>	<b>33.02</b>	<b>36.93</b>	<b>36.96</b>	<b>37.38</b>
<b>YEMEN</b>	<b>17.87</b>	<b>18.64</b>	<b>18.73</b>	<b>18.59</b>
<b>TOTAL</b>	<b>364.94</b>	<b>212.35</b>	<b>487.61</b>	<b>422.88</b>

Source: AOAD

# Oilseed Export

Major exporters of oilseed were Sudan, Syria and Egypt.

Exports of the three countries in 2002 were 181, 39 and 20 thousand metric tons, respectively.

These amounts exported represented only about 3% of the total oilseeds produced that year by the three countries.

**Table 9. Oilseed imports (1000 MT)**

<b>COUNTRY</b>	1997-2001 av.	2002	2003	2004
<b>JORDAN</b>	25.27	24.06	20.70	26.13
<b>EMIRATES</b>	146.50	36.77	186.45	180.50
<b>BAHRAIN</b>	4.03	8.99	3.95	5.22
<b>TUNISIA</b>	24.39	12.78	14.65	17.90
<b>ALGERIA</b>	27.97	56.55	46.72	93.27
<b>SAUDI Arabia</b>	45.46	45.79	65.90	65.90
<b>SUDAN</b>	0.70	0.54	0.34	8.17
<b>SYRIA</b>	136.43	161.97	209.54	208.53
<b>OMAN</b>	14.84	7.83	12.95	21.61
<b>PALESTINE</b>	0.63	2.17	1.97	2.07
<b>QATAR</b>	4.14	7.91	4.29	2.80
<b>KUWAIT</b>	6.65	8.03	5.04	5.04
<b>LEBANON</b>	73.33	99.06	148.28	114.78
<b>LIBYA</b>	84.50	122.47	117.64	125.07
<b>EGYPT</b>	307.84	398.63	191.76	262.37
<b>MOROCCO</b>	377.17	353.39	442.36	460.62
<b>MAURITANIA</b>	0.45	0.93	0.89	0.17
<b>YEMEN</b>	67.34	91.84	91.36	14.27
<b>TOTAL</b>	1347.64	1440.04	1565.41	1614.93

**Source: AOAD**

**Table 10. Vegetable oil imports (oil quantity, 1000 MT)**

<b>COUNTRY</b>	<b>1997-2001 av.</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<b>JORDAN</b>	<b>148.55</b>	<b>191.01</b>	<b>196.17</b>	<b>369.96</b>
<b>EMIRATES</b>	<b>123.28</b>	<b>102.47</b>	<b>126.59</b>	<b>126.59</b>
<b>BAHRAIN</b>	<b>21.41</b>	<b>18.22</b>	<b>17.14</b>	<b>36.48</b>
<b>TUNISIA</b>	<b>207.83</b>	<b>239.42</b>	<b>275.07</b>	<b>261.14</b>
<b>ALGERIA</b>	<b>438.22</b>	<b>527.21</b>	<b>596.42</b>	<b>1193.96</b>
<b>SAUDI Arabia</b>	<b>70.92</b>	<b>72.09</b>	<b>116.20</b>	<b>116.20</b>
<b>SUDAN</b>	<b>9.84</b>	<b>2.27</b>	<b>38.92</b>	<b>38.92</b>
<b>SYRIA</b>	<b>146.46</b>	<b>108.37</b>	<b>149.38</b>	<b>128.64</b>
<b>IRAQ</b>	<b>167.57</b>	<b>163.20</b>	<b>141.46</b>	<b>141.46</b>
<b>OMAN</b>	<b>31.56</b>	<b>24.89</b>	<b>44.12</b>	<b>39.72</b>
<b>PALESTINE</b>	<b>23.44</b>	<b>38.76</b>	<b>2.94</b>	<b>2.94</b>
<b>QATAR</b>	<b>12.47</b>	<b>10.74</b>	<b>11.21</b>	<b>33.77</b>
<b>KUWAIT</b>	<b>51.86</b>	<b>54.38</b>	<b>54.38</b>	<b>54.38</b>
<b>LEBANON</b>	<b>68.11</b>	<b>65.88</b>	<b>58.84</b>	<b>58.84</b>
<b>LIBYA</b>	<b>116.71</b>	<b>82.39</b>	<b>87.51</b>	<b>113.27</b>
<b>EGYPT</b>	<b>448.43</b>	<b>348.84</b>	<b>264.80</b>	<b>223.08</b>
<b>MOROCCO</b>	<b>383.83</b>	<b>432.80</b>	<b>432.80</b>	<b>388.78</b>
<b>MAURITANIA</b>	<b>35.63</b>	<b>76.60</b>	<b>16.85</b>	<b>16.85</b>
<b>YEMEN</b>	<b>144.83</b>	<b>146.34</b>	<b>204.04</b>	<b>186.40</b>
<b>TOTAL</b>	<b>2687.26</b>	<b>2742.75</b>	<b>2871.71</b>	<b>3568.25</b>

# Potential vegetable oil sources

- The plant kingdom has always been exploited for new vegetable oil sources
- Hundreds of such plants have been discovered around the world .
- Only a few species are commercially exploited
- Sudan is large country that encompasses multitude of climatic zones.
- Research has pointed to a number of potential vegetable oil sources.

# Promising edible oils

- *Adansonia digitata*
- Niger seed
- Citrus seed oils (especially grape fruit)
- Mango seed fat
- *Balanites aegyptiaca*
- *Butyrospermum parkii*
- *Sclerocarya birrea*
- *Zizyphus spinacristi*
- *Moringa oleifera*
- *Lagenaria spp.*
- *Abelmoschus esculentum*
- *Hibiscus sabdariffa*
- Grain germ oils
- Cucurbit seeds



# Promising Non-edible

**Neem seed oil (medicinal soap)**

**Oils from insect sources**

***Citrulus colocynthis***

***Salvadora persica***

**Jojoba seed liquid wax (cosmetics)**

**Vernonia seed oil (industrial coatings)**

***Jatropha curcus* seed oil (biodiesel)**