



“Organic olive oil from Italy”

OLIBIO Research Project

Fabio M. Santucci. DSEEA UniPG,
Washington DC November 2007

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Overview

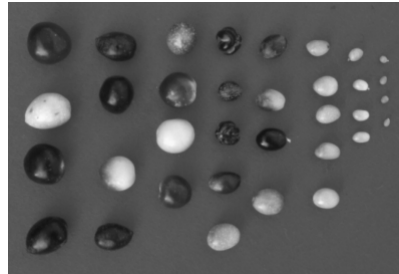
- Olive oil production and trade
- Organic olive and oil production and trade
- Controls and certifications for:
 - Conventional extra virgin olive oil
 - Organic extra virgin olive oil
 - PDO extra virgin oil
- Prospects for further research

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Three sources of information

- A research about organic olive oil in Italy
- A research on the situation and prospects for OA in the Med;
- A study on organic olive oil in the Med.



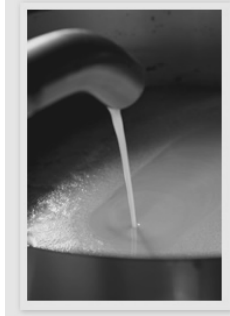
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All countries around the Med produce olive oil



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World olive oil production (000t)

Area/country	2004	2005	2006	Aver	%
European Union	2.357	1.946	2.144	2.149	76,5
Spain	989	825	1.096	970	34,5
Italy	795	656	591	681	24,2
Greece	435	424	370	410	14,6
Other EU Countries	138	41	87	89	3,2
Syria	175	100	154	143	5,1
Turkey	145	115	140	133	4,7
Tunisia	130	220	130	160	5,7
Morocco	50	75	80	68	2,4
Other Countries	156	143	172	157	5,6
World	3.013	2.599	2.820	2.811	100,0

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Olive oil imports (000t)



Area/country	2004	2005	2006	Aver	%
European Union 25	982	891	864	912	67,1
Spain	69	91	89	83	6,1
Italy	562	468	437	489	36,0
Portugal	56	58	61	58	4,3
Other EU Countries	295	274	277	282	20,7
USA	221	224	241	229	16,8
Japan	32	30	33	32	2,3
Canada	32	26	30	29	2,2
Australia	29	29	27	28	2,1
Brazil	27	26	28	27	2,0
Other Countries	108	97	105	103	7,6
World	1.430	1.323	1.327	1.360	100,0

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Olive oil annual individual consumption



Non traditional markets, as well as non traditional producers, are emerging everywhere.

Country	Kg
Greece	18,0
Italy	13,1
Spain	11,6
France	1,6
Tunisia	8,0
Germany	0,4
United Kingdom	0,6
Japan	0,2
USA	0,7
Australia	1,4

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Italian trade (000 t)



Imports	2004	2005	2006	Aver
Virgin and extra-virgin	398	349	328	358
Olive lampante	110	79	59	83
Refined lampante	54	41	50	48
Other categories	22	26	19	22
Total	584	495	456	512
Exports	2004	2005	2006	Aver
Virgin and extra-virgin	197	221	200	206
Olive lampante	12	18	7	12
Refined lampante	98	95	81	91
Other categories	31	32	35	33
Total	338	366	323	342
Balance	2004	2005	2006	Aver
Virgin and extra-virgin	-201	-128	-128	-152
Olive lampante	-98	-61	-52	-70,3
Refined lampante	44	54	31	43
Other categories	9	6	16	10,33
Total	-246	-129	-133	-169

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Destination countries (2006)



Destination	000 t	%	mio \$	%
EU -25	119	36,8	488	36,2
Germany	38	11,8	167	12,4
France	22	6,8	91	6,8
United Kingdom	14	4,3	65 0	4,8
USA	120	37,2	504	37,4
Japan	17	5,3	75	5,6
Canada	15	4,6	64	4,8
Australia	12	3,7	49	3,6
Total	323	100,0	1.347	100,0

US Imports



Average Import 2004/06 (t) 229.000

Suppliers (% value)

<i>EU -25</i>	86
<i>Turkey</i>	7
<i>Argentina</i>	3
<i>Morocco</i>	2
<i>Tunisia</i>	2

Average CIF value (\$/kg)

<i>Virgin and extra-virgin</i>	3,80
<i>Refined</i>	3,30

What is organic farming ?

Approaches to agriculture, aiming at setting up sustainable production systems, based mainly on renewable resources, on a management of the biological and ecological processes with the goal of achieving acceptable levels of animal and vegetal production and of human nutrition, protection from parasites and diseases, and a proper return to labor and other resources.



Lampkin and Padel “Economics of OF”, 1993



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IFOAM standards

- Reshaping of natural environment;
- Proper techniques: rotations, mixed cropping, limited soil labor;
- Enhancement of animal and vegetal biodiversity;
- No Genetically Modified Organisms;
- Husbandry techniques respectful for animals and environment;
- Reduction of plastics and no synthetic chemicals;
- “Natural” storage, processing and transportation;
- Fair trade and Local Trade;
- Intelligent consumption.

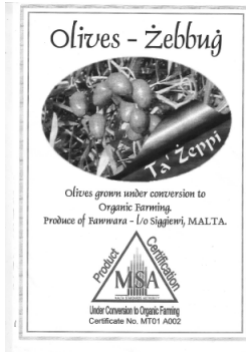
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6 Rules for organic olive oil

- **Respect the conversion period;**
- **Know your soil and respect traditions;**
- **Manage the natural fertility of the soil;**
- **Defend with the help of nature;**
- **Harvest with care and respect;**
- **Process carefully.**



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Organic Olive Area in the Med

Country	A) Total organic area (ha)	B) Area with organic olive trees (ha)	C) Area with olive trees (ha)	B/A %	B/C %
Italy	1.067.102	106.938	1.167.980	10,0	9,16
Spain	807.569	91.485	1.199.090	11,3	7,63
Greece	288.255	39.636	784.500	13,8	5,05
Portugal	233.458	28.152	360.000	12,1	7,82
France	560.838	700	18.340	0,1	3,82
Cyprus	1.698	576	14.830	33,9	3,88
Tunisia	143.099	80.016	1.500.000	55,9	5,33
Turkey	93.133	7.732	649.350	8,3	1,19
Syria	20.500	5.000	500.000	24,4	1,00
Palestine	1.000	500	nd	50,0	
Lebanon	2.465	475	58.000	19,3	0,82
Israel	6.685	340	22.000	5,1	1,55
Algeria	887	416	239.350	46,9	0,17
Total	3.299.154	362.210	7.379.090	11,0	4,91

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OA prospects to 2010



Trade	Mean
Export to EU	3,0
Domestic market	2,4
Export to US and Canada	1,9
Export to Italy	1,8
Export to Gulf countries	1,4
Export to Japan	1,2
Imports	1,2
Export to former USSR countries	0,9
Export to Maghreb countries	0,1

4 = strongly increase; -4 = strongly decrease

Reg. (EC) 2815/98 Designation of origin of olive oil

Since 1992, EU CAP has supported the market differentiation with so called GI "Geographical indications":

- **PDO = Product with Denomination of Origin**
- **PGI = Product with Geographical Indication**



In Italy, 39 Consortiums have been established



Geographical indications are strongly linked with rural development initiatives, such as agri-tourism, cultural heritage, handicraft, etc., with on farm and off farm economic diversification.



A UniPG,

Multiple certifications and controls



- **Conventional;**
- **Conventional and PDO / PGI;**
- **Organic;**
- **Organic and PDO / PGI;**
- **Organic and fair.**



Overall controls on olive oil quality

- A special unit of the Carabinieri (NAS), on behalf of the Ministry of Health;
- MIPAAF: Central Institute for Food Quality – ICQ - (last reform in 2004), with 27 offices and 12 labs;
- 232 Inspectors, 119 lab technicians, 311 administrative staff, 15 managers;
- Their labs verify the absence of non olive oils and the respect of the quality parameters established by the EU Reg. 2568/91, which on January 2008 will be replaced by EU Reg. 702/07, in close cooperation with COI and Codex Alimentarius (FAO);
- Sampling and testing procedures are codified, while labs are accredited.

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20 analyses allow
excluding the presence of
other oils and defining 8
categories:
from extra – virgin to
olive residue oil (olio di
sansa).



Parameters:

	Characteristics	Conventional Extra-virgin
1	Waxes (mg/kg)	= 250
2	Saturated acids in 2-position of triacylglycerol %	= 1.5
3	Stigmastadienes mg/kg	= 1.5
4	DECNA-42	= 0.2
5	Transoleic isomers %	= 0.05
6	Translinoleic + trans linolenic isomers %	= 0.05
7	Cholesterol %	= 0.5
8	Brassicasterol %	= 0.1
9	Campesterol %	= 4.0
10	Stigmasterol %	< Camp
11	Beta - Sitosterol	= 93.0
12	Delta7 stigma stenol	= 0.5
13-20 Etc.. etc..		

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The activities of ICQ



Item	2006	2005	2004	2003	2002
Inspections (no.)	36.391	34.165	24.846	21.249	23.609
Controlled operators (no.)	27.046	24.395	17.984	15.591	16.000
Samples (no.)	11.006	11.980	10.001	9.116	
Controlled products (no.)	90.744	88.847	46.629	51.825	
Irregular firms (no.)	3.486				
Irregular operators (%)	13	15	22	19	2.600
Analysed samples (no.)	11.256	11.763			
Irregular samples (no.)	1.010	1.021			
Irregular samples (%)	9	9			
Seizures (no.)	520	498	442	230	
Value (000 €)	8.686	9.356	9.916	6.105	4.500
Communications to judiciary authority (no.)	458	436	388	236	421
Administrative offences (no.)	4.094	3.977	3.864	3.746	3.650

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The activities of ICQ in 2006



Item	Oils and fats	Olive oil	%
Inspections (no.)	6.428	4.140	64
Controlled operators (no.)	5.479	3.707	68
Samples (no.)	1.079	na	na
Controlled products (no.)	10.944	7.804	71
Irregular operators (no.)	454	na	na
Seizures (no.)	82	47	57
Value (000 €)	360	182	51
Communications to judiciary authority (no.)	72	na	na
Administrative offences (no.)	397	362	91

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THE PDO ORGANIZATION

- Define the areas and varieties of olive trees
- Elaborate the guidelines for production and processing
- Define the quality of oil, with parameters stricter than the EU regulation
- Annually quantify the maximum quantity of olive / oil that each member can submit to certification
- Compulsory chemical analysis and panel test for all lots
- Delivery of alphanumeric bar codes for each bottle / tin to ensure total traceability.

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Panel test



- The entire system has been codified by COI and MIPAAF
- 35 hour training course (certificate A)
- Experience of 20 panel tests (certificate B)
- A + B = accepted into the Guild of Oil Testers
- A group of Oil Testers is recognized by Istituto di Elaiotecnica (MIPAAF) after blind testing
- The group is verified annually
- The panel testing is conducted with codified procedures in approved environments
- For the PDO, 10 quality aspects are considered (color, fragrance, taste, etc..)
- Variability can not exceed 20%
- Median values are considered
- To be accepted as Umbria PDO, average final score = 7

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Organic agriculture is heavily regulated and controlled

- EU Regulation 2092/91
- NOP USDA 2002
- JAS Japan



Certification Bodies can be private or public, but they all must be authorized by State and must be accredited.



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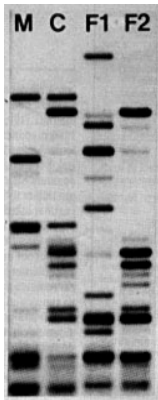
Controls

Farms, processing, storing, bottling, even retail and organic restaurants are certified by authorized Certification Bodies, with more than 1,000 inspectors.



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On going research...

- To define the provenience of oil, based on the natural radioactivity of each zone, through stable isotopes;
- To elaborate genetic markers – variety specific – to identify the presence of oils from other varieties different from those indicated by the PDO.

	240	250	260	270	280	290	300	310	320	
CANINO A	TTACACATAA...	TTTCCTTTTGA	TATTAGAT	-----	AAAGGAAGG	GCGAACG	GCCTATA	AAAAA	GA	AAAAA
CAROLEA	TTACATATA...	TTTCCTTTTGA	TATTAGAT	-----	AAAGGAAGG	GCGAACG	GCCTATA	AAAAA	GA	AAAAA
CORAT A 1	TTACATATA...	TTTCCTTTTGA	TATTAGAT	-----	AAAGGAAGG	GCGAACG	GCCTATA	AAAAA	GA	AAAAA
LECCINO	TTACATATA...	TTTCCTTTTGA	TATTAGAT	-----	AAAGGAAGG	GCGAACG	GCCTATA	AAAAA	GA	AAAAA
MORATOLO	TTACATATA...	TTTCCTTTTGA	TATTAGAT	-----	AAAGGAAGG	GCGAACG	GCCTATA	AAAAA	GA	AAAAA
ARBEO A 1	TTACATATA...	TTTCCTTTTGA	TATTAGAT	-----	AAAGGAAGG	GCGAACG	GCCTATA	AAAAA	GA	AAAAA
PICUAL A	TTACATATA...	TTTCCTTTTGA	TATTAGAT	-----	AAAGGAAGG	GCGAACG	GCCTATA	AAAAA	GA	AAAAA
KALAM A 1	TTACATATA...	TTTCCTTTTGA	TATTAGAT	-----	AAAGGAAGG	GCGAACG	GCCTATA	AAAAA	GA	AAAAA

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Conclusions..

- Production and trade of conventional, GI, organic oils are on rise, everywhere;
- Consumers increasingly appreciate upper scale oils;
- Private companies, producers' associations, public bodies, are cooperating for reducing the risks of frauds and misbehaviors;
- Products traceability is becoming a marketing tool;
- Better and advanced analytical methods will increase market transparency.

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Thanks for your attention

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