

1. GENERAL DESCRIPTION OF OLIVE GROWING IN IRAN

1.1. Introduction



Figure 1. Location of Iran (Source: UN)

Iran shares many geographical characteristics and common historical roots with the Mediterranean countries, which are home to the major known cultivars of olive. It lies in the Eastern Mediterranean, the cradle of ancient civilisations and the possible birthplace of the olive tree. The early history of the olive tree in Iran is shrouded in uncertainty but the olive is mentioned in ancient Iranian religious hymns dating back two thousand years ago. The establishment of olive orchards in the main olive growing region of the country (Roodbar) has been documented for the past nine hundred years.

Today, with an olive crop area of more than 100 000 hectares and 4 000 t of olive oil production per year, Iran is one of the world's olive growing countries. (Source: NRCGEB)

The olive tree is an important source of employment in Iran, generating a total of 12 273 200 workdays, of which 11 883 200 are in olive growing and 390 000 in the olive oil and table olive industries. (Source: IOC questionnaire)

1.2. Socio-economic indicators

- Area: 1 628 750 sq km (UN, 2008)
- Capital city: Tehran (UN)
- Currency: Iranian Rial (IRR) (UN, 2009)
- Population: 72 903 921 (World Bank, 2009)
- Urban population: 70% (World Bank, 2010)
- Rural population: 30% (World Bank, 2010)
- Population growth rate: 1.1% (UN, 2005/10)
- Life expectancy: 71.1 years (men), 74.1 years (women) (UN, 2010/15)
- Main exports by quantity: wheat, molasses, watermelons (FAOSTAT, 2009)
- Main imports by quantity: wheat (FAOSTAT, 2009)
- GNI per capita, PPP (current international \$): 11 380 (World Bank, 2010)
- GDP per capita, PPP (current international \$): 11 467 (World Bank, 2010)
- Employment in agriculture: 21.2% (World Bank, 2008)
- Employees in agriculture, female: 31% (World Bank, 2008)
- Employees in agriculture, male: 19% (World Bank, 2008)
- Employment in olive growing: 12 273 200 (IOC, 2009/10 workdays)

2. BACKGROUND DATA

2.1. Olive oils

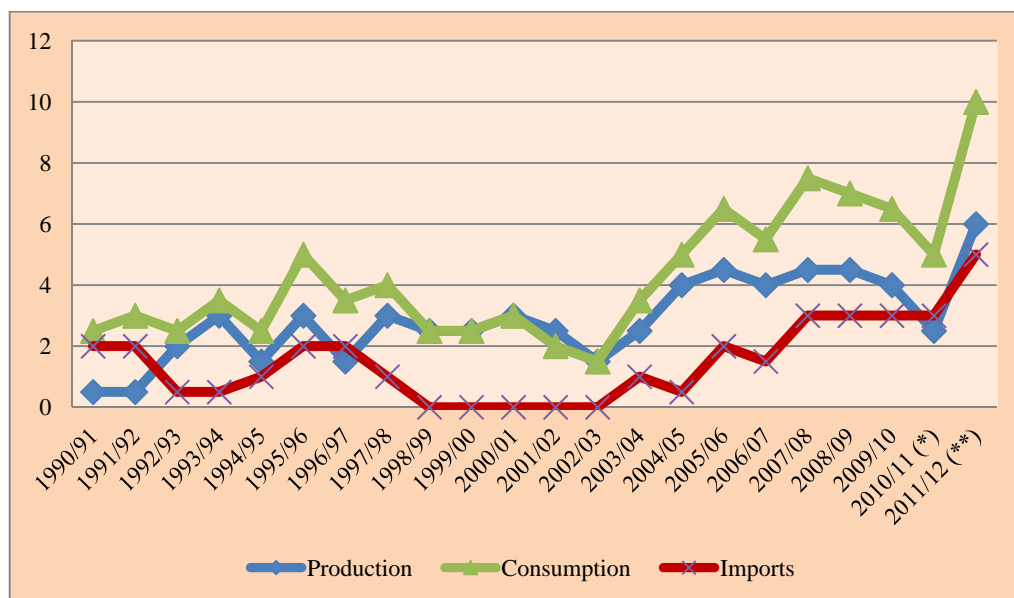


Figure 2. Olive oil production, consumption and imports 1990–2012 (1 000 tonnes)

* Estimates

** Forecasts (Source: IOC)

Table 1. Olive oils (1 000 tonnes) (Source: <http://www.internationaloliveoil.org/estaticos/view/131-world-olive-oil-figures>)

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Production	3.0	2.5	1.5	2.5	4.0	4.5	4.0	4.5	4.5	4.0
Consumption	3.0	2.0	1.5	3.5	5.0	6.5	5.5	7.5	7.0	6.5
Imports	0.0	0.0	0.0	1.0	0.5	2.0	1.5	3.0	3.0	3.0

2.2. Table olives

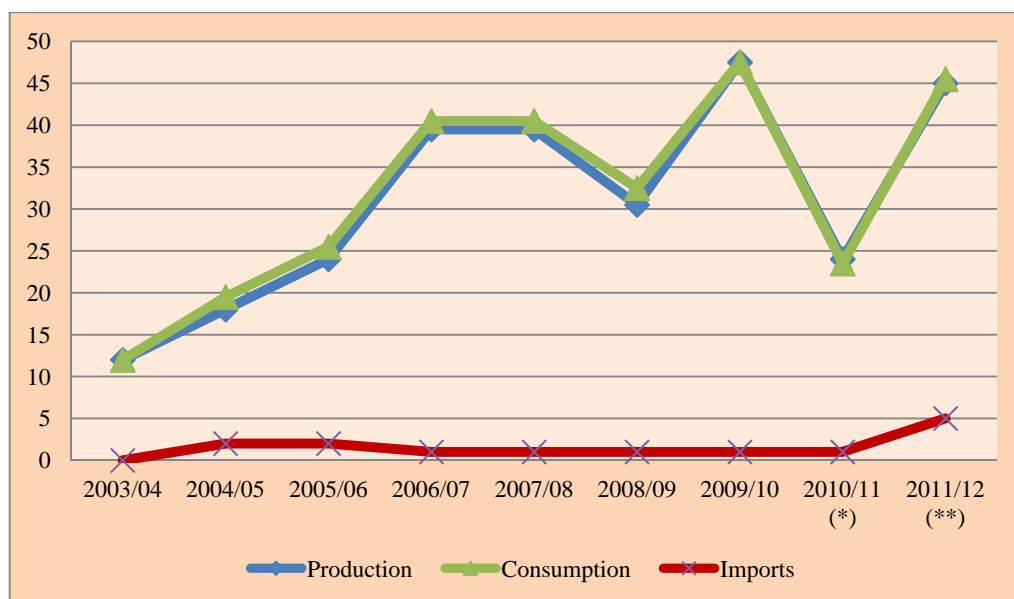


Figure 3. Table olive production, consumption and imports 1990–2012 (1 000 tonnes)

* Estimates

** Forecasts (Source: IOC)

Table 2. Table olives (1 000 tonnes)

(Source: <http://www.internationaloliveoil.org/estaticos/view/132-world-table-olive-figures>)

	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Production	12.0	18.0	24.0	39.5	39.5	30.5	47.5
Consumption	12.0	19.5	25.5	40.5	40.5	32.5	47.5
Imports	0.0	2.0	2.0	1.0	1.0	1.0	1.0

2.3. Total area planted

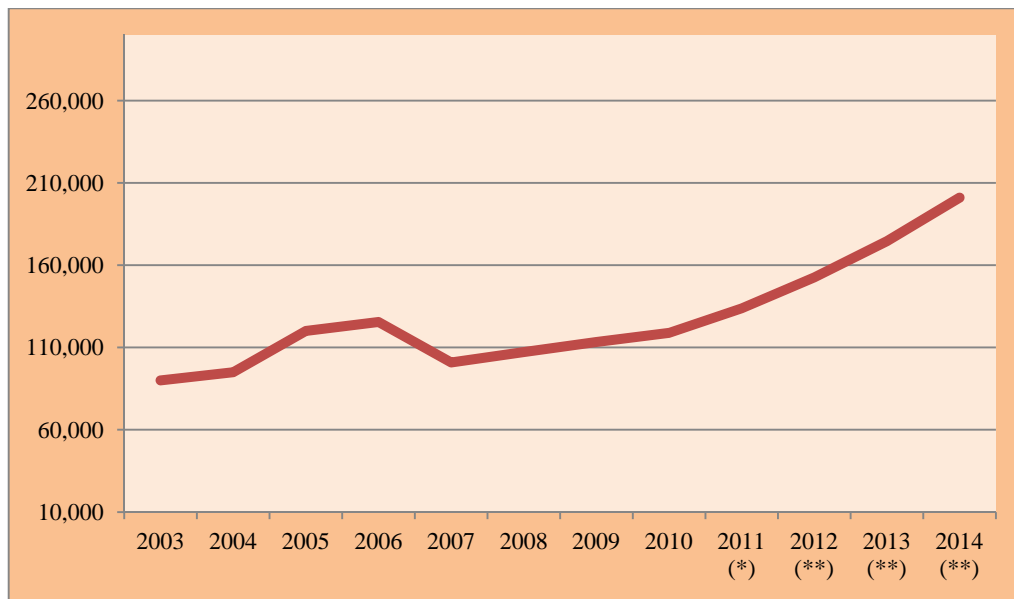


Figure 4. Changes in area planted with olive trees (ha)

* Estimates

** Forecasts (Source: IOC questionnaire)

3. OLIVE INDUSTRY IN IRAN

3.2. Orchard resources

Taking 2009, the benchmark year or season used in the IOC questionnaire, olives were grown on 102 043 ha of land, of which 11 304 ha were dry farmed and 113 347 ha were irrigated. Olive crop area has been surging since 2005 when only 91 862 ha were under olives, and looks poised to reach 201 099 ha by 2014. This expansion has been due to new orchard plantings, which have been moving upwards since 2005, although in some years their impact has been offset by large scale grubbing owing to wind and frost damage; for instance, 20 000 ha were pulled out for this reason in 2007.

In 2009, olives were cultivated on 27 245 agricultural holdings, of which 35% were more than 50 ha in size and only 11% were less than 5 ha (see Figure 5 below).

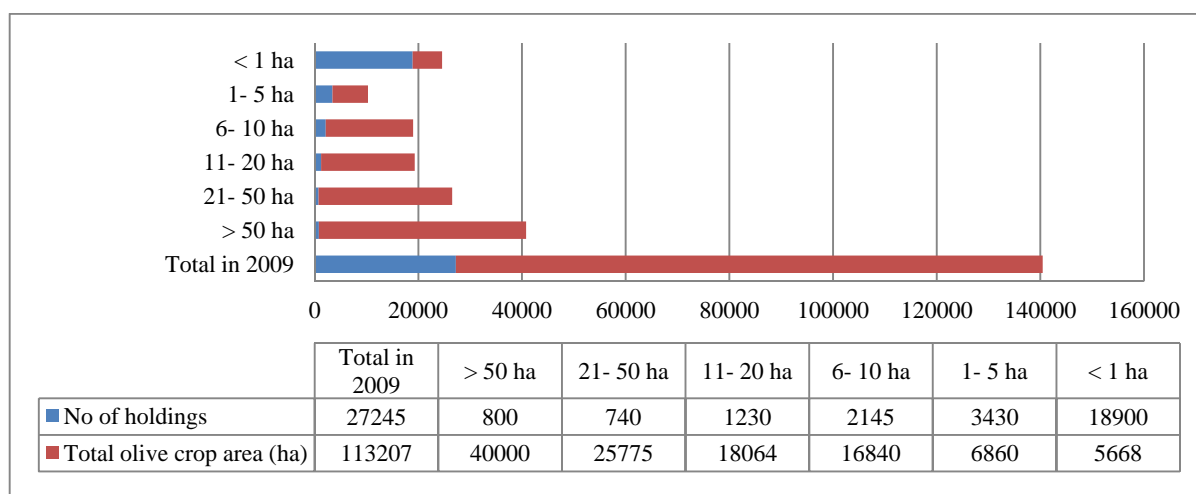


Figure 5. Number of agricultural holdings growing olive trees in 2009 (Source: IOC questionnaire)

Orchards growing oil-olives under dry-farmed conditions have an average density of 150 trees/ha. Orchard density in irrigated orchards averages 250 trees/ha irrespective of whether they are for oil or table olive production.

Three categories emerge when olive resources are itemised by orchard age (Source: IOC questionnaire):

- Young orchards (< 5 years old): 56 303 ha (50%)
- Orchards at full bearing (5–50 years old): 53 404 ha (47%)
- Old orchards (> 50 years old): 3 500 ha (3%)

In 2010, cultural practices and harvesting could be fully mechanised on 59 416 ha (50%) of the country's olive growing area and partially mechanised on 23 765 ha (20%). Mechanisation was not possible on 35 650 ha (30%) (Source: IOC questionnaire).

3.2. Location

Most of Iran's varietal heritage is located in the valley of Sefi-Rud, Tarom and Manjil about 60–70 km from the coast of the Caspian Sea.

Olive cultivars are distributed across the provinces of Gilan, Zanjan, and Golestan in the North and Khozestan and Fars in the South. Some parts of Gilan (Loshan, Manjil, Rodbar, Aliabad, Jodaky, Vakhman, Bahramabad, Kalashtar, Koshk, Rostamabad, and Ganjeh) are the most important olive growing areas in the country. (Source: NRCGEB)

The predominant climate is continental with cold winters and hot dry summers. On the plateau, the climate is arid and rainfall is less than 250 mm per year. Tehran, at the foot of the southern slopes of the Elburz Mountains, receives only 230 mm of precipitation whereas the coastline of the Caspian Sea receives more than 1 000 mm. The soil is clay and partly rocky. Soils are often cultivated on hilly land and elevations between 100 and 150 m above sea level.

3.3. Varieties

The majority of the olives grown in Iran belong to 10 traditional cultivars (Mari, Zard, Rowghani, Gelooleh, Shengeh, Khormazeitoun, Khara, Dakal, Dezful, and Fishomi). A high degree of variability has been observed empirically in each of these cultivars but thorough study of the extent and attributes of this variability is still lacking. According to the National Research Centre for Genetic Engineering & Biotechnology, the following are the agronomic and commercial characteristics of the most important varieties:

Mari

The name probably derives from the narrow, elongated shape of the fruit. Its rooting ability is low, the time of flowering is intermediate and it produces abundant pollen. It is also used as a polliniser for many other cultivars. Its productivity is high and alternate. The flesh of the fruit is not firm. It ripens early and is suitable for making oil – it gives a high yield of good quality oil – as well as green olives in brine. It is sensitive to cold.

Zard

The name of this cultivar comes from the yellow colour of the tree. It is the main Iranian variety and it has a high rooting ability. Its time of flowering and ripening is intermediate, and its productivity is high and alternate. The fruit has two prominent lines on its sides, which are evident to the touch before ripening. The fruit is free stone and has fairly firm flesh. It is used for green pickling and for oil. It has a high oil content and gives good quality oil. It is sensitive to verticillium wilt.

Rowghani

The name probably derives from the high oil content of the fruit. It has a high rooting ability, and its time of flowering is intermediate and earlier than the Zard cultivar. The inflorescence often has supernumerary flowers which turn completely white. Most of the flowers have a high pistil abortion rate. Its time of ripening is intermediate (in late August) and its productivity is high and alternate. The fruit is free stone and its flesh is not firm. It has a high removal force. The fruit is used for green pickling and for producing oil. It has a high oil content and it is sensitive to verticillium wilt.

Gelooleh

This name probably comes from the globe shape of the fruit. It has a low rooting ability and its flowering time is intermediate. The flesh of the olives is firm. It can be used for pickling, although the stone is large in relation to the flesh. It is also suitable for oil extraction. Its productivity is medium and alternate and it gives a medium oil yield. It is sensitive to verticillium wilt.

Dakal

The name of this cultivar is probably linked to the south of Iran (Khuzestan province). It has a good rooting ability. The fruit is used for green pickling and has a medium oil content.

Fishomi

The name of this cultivar is linked to its source area. It has a low rooting ability and intermediate flowering time. The fruit is firmly fleshed and is used for oil and green table olives. It is suitable for table production because of the small size of the stone. Its oil content is medium.

3.4. Olive oil: production and yield

According to the data in the possession of the Executive Secretariat, Iran produced 4 000 t of olive oil in the 2009/10 crop year. Since 2000/01 production has hit a low of 1 500 t in 2002/03 and it has peaked three times at 4 500 t in 2005/06, 2007/08 and 2008/09.

The provisional figures for the 2011/2012 season were very optimistic, being assessed at 6 000 t.

Over the last ten years, olive oil production in Iran has averaged 3 500 t compared with 2 000 t in the preceding decade (Table 3). This represents an increase of 75% between the two periods.

Crop yields in conventional oil-olive orchards averaged 1 830 kg olives/ha in 2009/10.

3.5. Olive oil: processing sector

Iran has a total of 49 olive oil processing facilities. Fifteen are traditional oil mills, three are press mills and 31 are two or three-phase continuous-process facilities, with an average production capacity of 1, 0.8 and 1.6 t/ 8 hours, respectively. In addition, it has 35 olive oil packing plants, with an average capacity of 26 t/8 hours.

In 2009/10, 70% of the virgin olive oil produced in Iran belonged to the extra virgin grade (up to 0.8°), 20% was virgin grade (up to 2°) and the remaining 10% was ordinary grade (up to 3.3°). (Source: IOC questionnaire)

3.7. Olive oil: domestic consumption and foreign trade

Between the 2000/01 and 2009/10 crop years, domestic consumption of olive oil ranged from a low of 1 500 t in 2002/03 to a high of 7 500 t in 2007/08 (see Table 1).

In average terms, domestic consumption has come to 3 975 t/year over the 20 years covered in Table 3. However, viewed separately, mean consumption in the first decade (3 150 t) and the second (4 800 t) has differed slightly and shows growth of around 52%.

Iran does little foreign trading in olive oil. In fact, it recorded no exports between 1990 and 2010 but it does import olive oil. Comparison of the two ten-season periods covered in Table 3 shows almost 28% growth in mean imports between 1990/91–1999/00 (1 100 t/year) and 2000/01–2009/10 (1 400 t).

Table 3. OLIVE OIL (Source: IOC)

	Average (t) 1990/91–1999/00	Average (t) 2000/01–2009/10	Change (%)
Production	2 000	3 500	75.00
Consumption	3 150	4 800	52.38
Imports	1 100	1 400	27.27

3.8. Table olive subsector

The data available to the IOC for the last five seasons (Table 2) show that production has ranged from 12 000 t in 2003/04 to 47 500 t in 2009/10, with the yearly average working out at 30 140 t.

Crop yields in table olive orchards averaged 1 830 kg/ha in 2009/10. None of the orchards is farmed organically.

Iran has 30 table olive processing plants, and the same number of packing plants, both with a capacity of 26 t/8 hours.

Again looking at Table 2, domestic consumption of table olives in Iran ranged between 12 000 t in 2003/04 and 47 500 t in 2009/10, with the yearly average working out at 31 142 t.

In 2010, per capita consumption of table olives in Iran came to 0.75 kg/head. (Source: IOC questionnaire)

3.9. Ongoing and future measures

Olive orchard improvement programmes are underway in Iran and others are planned for the future:

- I. Action to plan and organise orchard improvement through:
 - Appropriate orchard management
 - Appropriate pruning
 - Improvement of unsuitable olive cultivars by grafting
 - Soil and plant testing
 - Orchard nutrition and irrigation
 - Weed control and improvement of cultural practices
 - Improvement of genetic olive resources

- II. Provincial coordination of:
 - Proper implementation and targeted improvement of cultural practices in olive orchards;
 - Olive orchard reform;
 - Supervision and continuous monitoring of improvement measures;
 - Facilitation of information exchange between R&D departments and the private sector.

- III. Creation of an expert pruning group and provision of pruning services in olive growing areas.

- IV. Preparation and publication of executive and technical instructions for olive orchard improvement and reform.

- V. Preparation and establishment of annual programmes with the help of provincial experts and managers and estimation of necessary funding.

- VI. Preparation of three, six and twelve-monthly reports on the planned tasks.

- VII. Planning and coordination of horticultural supervision of the main, suitable olive orchards (nutrition, irrigation, pruning ...).

- VIII. Modernisation programmes for the olive oil industry (olive oils and olive-pomace oils) and table olive industry and by-product reuse:
 - Presentation of latest processing technology to investors and owners;
 - Financing of new facilities;
 - Export opportunities and facilities such as appropriate packaging, storage, etc.

(Source: IOC questionnaire)

4. SOURCES

IOC questionnaire

IOC database

<http://www.internationaloliveoil.org/estaticos/view/130-survey-and-assessment-division>

United Nations

<http://data.un.org/Default.aspx>

World Bank

<http://data.worldbank.org/country>

FAOSTAT

<http://faostat.fao.org/site/342/default.aspx>

NRCGEB, National Research Centre for Genetic Engineering & Biotechnology

<http://www.iranolive.com/his.htm>