

Overview of essential oil production from North Africa

Introduction

North Africa is a long established and important source of essential oils for a number of Mediterranean-origin plant species. Egypt, Morocco and Tunisia are the major production origins in the region, with production coming from both wild harvested and cultivated material (almost all wild harvested material coming from Morocco and Tunisia, with Egypt's production being almost wholly from cultivated sources). The major crop types providing essential oils and extracts in the region are:

- The herbs and spice seeds (lavender, rosemary, coriander, chamomile, cumin etc)
- Citrus oils (neroli, petitgrain etc)
- Flowers (jasmine, rose, violet etc); and
- A number of aromatic trees and shrubs (geranium, myrtle, cedar etc)

Egypt

Egypt provides a large and diverse range of essential oils and extracts, more than 30 different products, with a total export value in the range US\$35 to US\$40 million/yr. However, over 60% of the value of exports is accounted for by 2 crops – geranium (typically around 45% of export totals, with production of around 150 to 180 tonnes valued at around US\$15 million), and jasmine (typically around 20% of export totals, with production of around 3.3 to 3.5 tonnes valued at around US\$6.5 million. Production of geranium oil has fluctuated widely over the last 5 to 10 years – both prices and production volumes, with production peaking at around 250 tonnes. Current production levels are around 150 to 170 tonnes, while long term averages are in the range 60 to 120 tonnes.

The next 6 most important crops by export value are:

- Cumin: US\$2.6 million; 15-20 tonnes
- Violet leaf concrete: US\$1.6 million; 1.5 tonne
- Onion oil: US\$1.6 million; 2 tonnes
- Blue chamomile: US\$1.3 million; 1.5 tonnes
- Petitgrain mandarin: US\$1.1 million; 25 tonnes
- Neroli: US\$1 million; 0.35 tonnes

No other crop has a production value greater than US\$1 million. Other essential oil and extract crops include a wide range of:

- Herbs: basil (linalool and methyl chavicol types); caraway seed; aniseed; garlic; coriander (leaf and seed oils); parsley (leaf and seed oils); dill (leaf and seed oils); celery (leaf and seed oils); bitter fennel;
- Flowers: tagetes; carnation concrete; rose concrete
- Citrus oils: bitter orange oil; bitter orange blossom concrete; key lime

Tunisia

The Tunisian essential oils industry is based around production of bitter orange flower, and wild harvested rosemary and myrtle. The leaves and flowers of the bitter orange tree (*Citrus aurantium*) are harvested. Production is centered in the NE of the country. Distillation of the flowers gives neroli oil, and the water used for distillation gives orange flower water and the flower water absolute. Extraction of the flowers gives bitter orange concrete and absolute.

Tunisia produces in the range 600 to 800 kgs/yr neroli oil. Distillation of the leaves gives petitgrain oil, and the petitgrain water and absolute are also produced.

Rosemary and myrtle are wild harvested with most production coming from lands controlled by the State (Department of Forests), where harvesting rights are auctioned each year.

There are extensive crop areas, centered around the western, and central regions.

Rosemary is reported to grow on up to 350,000 ha and myrtle on around 40,000 ha. Exports of rosemary oil are in the range 70 to 90 tonnes/yr; exports of myrtle are in the range 2 to 3 tonnes/yr.

Morocco

The essential oil and extracts sector in Morocco is based on both wild harvested and cultivated production. Wild harvested crops are found over extensive areas, but overall production volumes of all essential oil and extract crops are dominated by the wild harvested crops, although production volumes of cultivated crops are becoming increasingly important. The major wild harvested plants are rosemary, thyme, lichen, argan, wild chamomile, myrtle, atlas cedar, laurel and artemisia. Harvesting is generally organized by cooperatives that then sell the crops, or the oils, to other companies.

The major cultivated crops, by area of cultivation, are:

- Coriander (4,750 ha);
- Lavender & lavandin (2,000 ha);
- Cumin (1,800 ha);
- Sesame (1,600 ha);
- Aniseed (1,200 ha);
- Bitter orange (250 ha);
- Verbena (50ha);
- Rose centifolia (40 ha); rose damascene (30 ha);
- Jasmine (30 ha).

Other cultivated essential oil and extract crops include: geranium; saffron; spearmint; mimosa; grapefruit.

Production estimates for the major essential oils are:

- Atlas cedar: 40 tonnes
- Rosemary: 30 tonnes
- Pennyroyal: 6 tonnes
- Wild chamomile: 4 tonnes
- Mimosa concrete: 2.5 tonnes
- Rosa damascena concrete: 1.5 tonnes; Rosa damascene essential oil: 50 kgs; Rosa centifolia concrete 200 kgs
- Myrtle: 1.3 tonnes
- Neroli concrete: 1.3 tonnes
- Orange flower concrete: 1.2 tonnes
- Jasmine concrete: 250 kgs