

PROCESSING OF CORIANDER

Introduction

Coriander (*Coriandrum sativum* L.) is an annual herb with branching stems and small white, pinkish flowers that grows to a height of about 90cm. It is a member of the same family as carrots and parsley (Umbelliferae) and is native to the Mediterranean and Middle East. Coriander, which is also known as Chinese parsley and cilantro, is grown for its seeds and leaves, both of which are used in a range of dishes. Coriander requires well drained soils and plenty of warmth and sunshine. It is grown as a crop in India, Russia, Brazil, South America, North America and Holland.

Uses

The seeds are tiny globes, about the same size as peppercorns, which are a pale creamy brown colour. The seeds from Indian coriander tend to be elongated while the seeds from European coriander are more round in shape (see figure 1). They are dried and ground and included in curry powder and garam masala powder in Indian cooking. Quite frequently ground coriander and cumin are used in the same dish.

The leaves are used as a fresh green vegetable or salad leaf. Coriander seed oil is used for a range of medicinal applications. It has antibacterial properties and is used in treatments for colic, neuralgia and rheumatism. It has industrial applications in pharmaceutical applications and tobacco where it is used to counteract unpleasant odours.

Harvesting

Harvesting at the correct stage of ripeness is essential for the coriander seed to have a full aroma. Under-ripe coriander seeds have an unpleasant flavour and lack the distinctive spicy aroma and over-ripe seeds (after about 90 days from planting) tend to shatter which reduces the yield. Since ripening is progressive on the plant, harvesting should take place when between half and two thirds of the seeds are ripe. To minimise breakage, the plants should be cut during the early morning while the dew is on the plant or in the late evening. After harvest the seed is dried and stored for later use.



Figure 1: Fresh coriander
Photo: Practical Action / Neil Noble



Figure 2: Coriander seed
(http://www.uni-graz.at/~katzer/engl/Cori_sat.html)

Drying

The typical aroma and flavour of coriander seed is not fully developed until it is completely dry. Usually the whole plants are spread out in the sun to dry. They are left to wither for two days until the moisture content is about 18%. They are then threshed to remove the seeds which are further dried to a final moisture content of 9%. The second drying stage should be in the shade to prevent over-heating of the seeds. The drying time depends on the climate.

In some countries artificial dryers are used to dry the seed. It is important to ensure that the temperature of drying ovens does not exceed 100°C as this reduces the levels of volatile oils. The clean seed should be stored in bags or closed containers.

Essential oil extraction

The ground seeds can be used for the extraction of essential oils. The seed is ground immediately prior to distillation to increase the yield of oil and reduce the distillation time. The essential oil content varies from 0.1-1.5% and contains a range of different essential oils. For more information on how to distil essential oils, see the Practical Action Technical Brief.

Equipment suppliers

This is a selective list of suppliers of equipment and does not imply endorsement by Practical Action.

This website includes lists of companies in India who supply food processing equipment.

http://www.niir.org/directory/tag/z,,1b_0_32/fruit+processing/index.html

Dryers

Acufil Machines

S. F. No. 120/2, Kalapatty Post Office
Coimbatore - 641 035

Tamil Nadu
India

Tel: +91 422 2666108/2669909

Fax: +91 422 2666255

E-mail: acufilmachines@yahoo.co.in

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<http://www.indiamart.com/acufilmachines/#products>

Bombay Engineering Works

1 Navyug Industrial Estate
185 Tokersey Jivraj Road
Opposite Swan Mill, Sewree (W)
Mumbai 400015

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Tel: +91 22 24137094/24135959

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bomeng@vsnl.com

<http://www.bombayengg.com/contact.html>

Bry-Air (Asia) Pvt Ltd

21C Sector 18
Gurgaon - 122015

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Tel: +91 124 4091111

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E-mail: enquire@pahwa.com

<http://www.bryair.com/index.htm>

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www.teriin.org/tech_cardamom.php

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Selangor, Malaysia
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E-mail: bryair@bryair.com.my
Website: www.bryair.com.my

Industrias Technologicas Dinamicas SA

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URB industrial Infantas
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Ashoka Industries

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Website: www.alvanblanch.co.uk

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Webiste: www.drikorea.co.kr

Bry-Air (Thailand)

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Ratchadaphisek Road
Samsennai Huayekhwang
Bangkok 10320
Thailand
Tel: +66 2 5415479, 9389304
Fax: +66 2 9389314
E-mail: info@bryair.co.th
Website: www.bryair.co.th

Bry-Air (Africa)

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Kundasala Engineers

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Mitchell Dryers Ltd

Denton Holme, Carlisle
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CA2 5DU
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www.teriin.org/tech_cardamom.php

Indian Institute of Spices Research (IISR)
Marikunnu PO, Calicut
Kerala
India 673012
Tel: +91 495 2731346
+91 495 2730294
<http://www.spices.res.in/spices/coriander.php>

Indian Institute of Technology (IIT) Bombay
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Tel: +91 22 2572 2545
Fax: +91 22 2572 3480
<http://www.ircc.iitb.ac.in/webnew/>

Reference and further reading

Drying of Foods Practical Action Technical Briefs
Essential Oil Distillation Practical Action Technical Briefs
Spice Processing Practical Action Technical Briefs
Cumin Processing Practical Action Technical Briefs
Small-scale Drying Technologies Practical Action Technical Brief

This document was updated by Dr. S Azam Ali for Practical Action 2008.
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