



CUMIN PROCESSING

Introduction

Cumin is a small annual herbaceous plant (*Cuminum cyminum*) that is a member of the parsley family (*Umbelliferae*). It is a native of the Eastern Mediterranean countries and Upper Egypt, but is now cultivated in Morocco, Iran, Turkey, India, China and the Americas. The seeds of the plant are used to add flavour to spicy dishes. They are also used as an appetite stimulant and to ease several stomach disorders.

This brief outlines the important steps that should be taken pre-harvest and post-harvest to ensure that the dried cumin is of top quality for the market.

Types of cumin

There are two main types of cumin:

- White cumin seeds which are the most common type.
- Black cumin seeds that are popular in Iran. The seeds of black cumin are smaller and have a sweeter aroma than the white seeds. They are sometimes confused with nigella, another seed that is used in Indian cookery.

They both come from the *Umbelliferae* family of plants.

Cumin production

Cumin is an annual herb that grows best in sunny climates with some rainfall (over 2000mm a year). It can grow at elevations up to 1000m above sea level. The plants grow to about 25cm in height. They should be planted at intervals of about 0.75m. The small white or pink flowers grow in clusters on short stems, looking like small umbrellas.

Harvesting

The seeds are harvested about 4 months after planting when the plant begins to wither and the seeds change from dark green to a brown-yellow colour. The seed is small and boat shaped with nine ridges along the length. The seeds are harvested by removing the whole plant from the ground.

Drying

The plants are dried in the sun or in the partial sun

Threshing and winnowing

The cumin seeds are beaten out by threshing the dried plants with sticks. The seeds are then further dried to 10% moisture content, either by placing on mats or trays in the sun or by using a drier if the conditions are too humid. The dried seeds are winnowed using a traditional winnowing basket to remove the dirt, dust, leaves and twigs.



Figure 1: Cumin seed.
Photo Practical Action / Neil Noble

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Grinding

Grinding can be a method of adding value to a product. However, it is not advisable to grind spices. After grinding, spices are more vulnerable to spoilage. The flavour and aroma compounds are not stable and will quickly disappear from ground products. The storage life of ground spices is much less than for the whole spices. It is very difficult for the consumer to judge the quality of a ground spice. It is also very easy for unscrupulous processors to contaminate the ground spice by adding other material. Therefore most consumers, from wholesalers to individual customers, prefer to buy whole spices.

Cumin seeds are available as whole seeds and ground powder.

Packaging

Cumin seeds can be packaged in polythene bags of various sizes according to the market demand. The bags should be sealed to prevent moisture entering. Sealing machines can be used to seal the bags. Attractive labels should be applied to the products. The label needs to contain all relevant product and legal information – the name of the product, brand name (if appropriate), details of the manufacturer (name and address), date of manufacture, expiry date, weight of the contents, added ingredients (if relevant) plus any other information that the country of origin and of import may require (a barcode, producer code and packer code are all extra information that is required in some countries to help trace the product back to its origin). See the Practical Action Technical Brief on labelling for further information on labelling requirements.

Storage

Dried cumin seeds must be stored in moisture-proof containers away from direct sunlight. The stored seeds should be inspected regularly for signs of spoilage or moisture. If they have absorbed moisture, they should be re-dried to a moisture content of 10%.

The storage room should be clean, dry, cool and free from pests. Mosquito netting should be fitted on the windows to prevent pests and insects from entering the room. Strong smelling foods, detergents and paints should not be stored in the same room as they will spoil the delicate aroma and flavour of the cumin.

Standards

The Indian standard for dried cumin is as follows:

	Special	Standard	General
Moisture (%) (wet basis)	<10	<10	<10
Damaged seeds (% by weight)	2	4	6
Extraneous matter (% by weight)	2	5	7
Shrivelled, immature (% by weight)	1.5	3.0	4.0

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
Email: acufilmachines@yahoo.co.in
acufilmachines@hotmail.com
<http://www.indiamart.com/acufilmachines/products>

Bombay Engineering Works

1 Navyug Industrial Estate
185 Tokersey Jivraj Road
Opposite Swan Mill, Sewree (W)
Mumbai 400015
India
Tel: +91 22 24137094/24135959
Fax: +91 22 24135828
bomeng@vsnl.com
<http://www.bombayengg.com/contact.html>

Premium Engineers Pvt Ltd

Plot No 2009, Phase IV, GIDC
Vatva, Ahmedabad 382445
India
Tel: +91 79 25830836
Fax: +91 79 25830965

Rank and Company

A-p6/3, Wazirpur Industrial Estate
Delhi – 110 052
India
Tel: +91 11 7456101/ 27456102
Fax: +91 11 7234126/7433905
Rank@poboxes.com

Industrias Technologicas Dinamicas SA

Av. Los Platinos 228
URB industrial Infantas
Los Olivios
Lima
Peru
Tel: +51 14 528 9731
Fax: +51 14 528 1579

Ashoka Industries

Kirama
Walgammulla
Sri Lanka
+94 71 764725

Kundasala Engineers

Digana Road
Kundasala
Kandy
Sri Lanka
Tel: +94 8 420482

Alvan Blanch

Chelworth, Malmesbury
Wiltshire
SN16 9SG
UK
Tel: +44 1666 577333
Fax: +44 1666 577339
enquiries@alvanblanch.co.uk
www.alvanblanch.co.uk

Mitchell Dryers Ltd

Denton Holme, Carlisle
Cumbria
CA2 5DU
UK
Tel: +44 1228 534433
Fax: +44 1228 633555
webinfo@mitchell-dryers.co.uk
<http://www.mitchell-dryers.co.uk/>

Packaging and labelling machines

Acufil Machines

India (See above)

Gardners Corporation

158 Golf Links
New Delhi 110003
India
Tel: +91 11 3344287/3363640
Fax: +91 11 3717179

Gurdeep Packaging Machines

Harichand Mill compound
LBS Marg, Vikhroli
Mumbai 400 079
India
Tel: +91 22 2578 3521/577 5846/579
5982
Fax: +91 22 2577 2846

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MMM Buxabhoy & Co

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1st Floor, Near Crawford Market
Mumbai
India
Tel: +91 22 2344 2902
Fax: +91 22 2345 2532
yusufs@vsnl.com; mmmb@vsnl.com;
yusuf@mmb.in

Narangs Corporation

India
P-25 Connaught Place
New Delhi 110 001
India
Tel: +91 11 2336 3547
Fax: +91 11 2374 6705

Orbit Equipments Pvt Ltd

175 - B, Plassy Lane
Bowenpally
Secunderabad - 500011, Andhra Pradesh
India
Tel: +91 40 32504222
Fax: +91 40 27742638
<http://www.orbitequipments.com>

Pharmaco Machines

Unit No. 4, S.No.25 A
Opp Savali Dhaba, Nr.Indo-Max
Nanded Phata, Off Sinhgad Rd.
Pune - 411041
India
Tel: +91 20 65706009
Fax: +91 20 24393377

Rank and Company

India (see above)

Banyong Engineering

94 Moo 4 Sukhaphibaon No 2 Rd
Industrial Estate Bangchan
Bankapi
Thailand
Tel: +66 2 5179215-9

Technology and Equipment Development Centre (LIDUTA)

360 Bis Ben Van Don St
District 4
Ho Chi Minh City
Vietnam
Tel: +84 8 940 0906
Fax: +84 8 940 0906

John Kojo Arthur

University of Science and Technology
Kumasi
Ghana

Alvan Blanch

UK (see above)

Contacts

The following contacts should be able to provide further information:

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+91 495 2730294
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<http://www.iisr.org/package/index.php?spice=Cumin&body=Overview>

Indian Institute of Technology (IIT) Bombay

Powai
Mumbai 400076
India
Tel: +91 22 2572 2545
Fax: +91 22 2572 3480
<http://www.ircc.iitb.ac.in/webnew/>

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Further reading

Drying Practical Action Technical Brief

Spice processing Practical Action Technical Brief

Labeling food products Practical Action Technical Brief

This document was produced by Dr. S Azam Ali for Practical Action in March 2007. Dr. S Azam-Ali is a consultant in food processing and nutrition with over 15 years experience of working with small-scale processors in developing

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