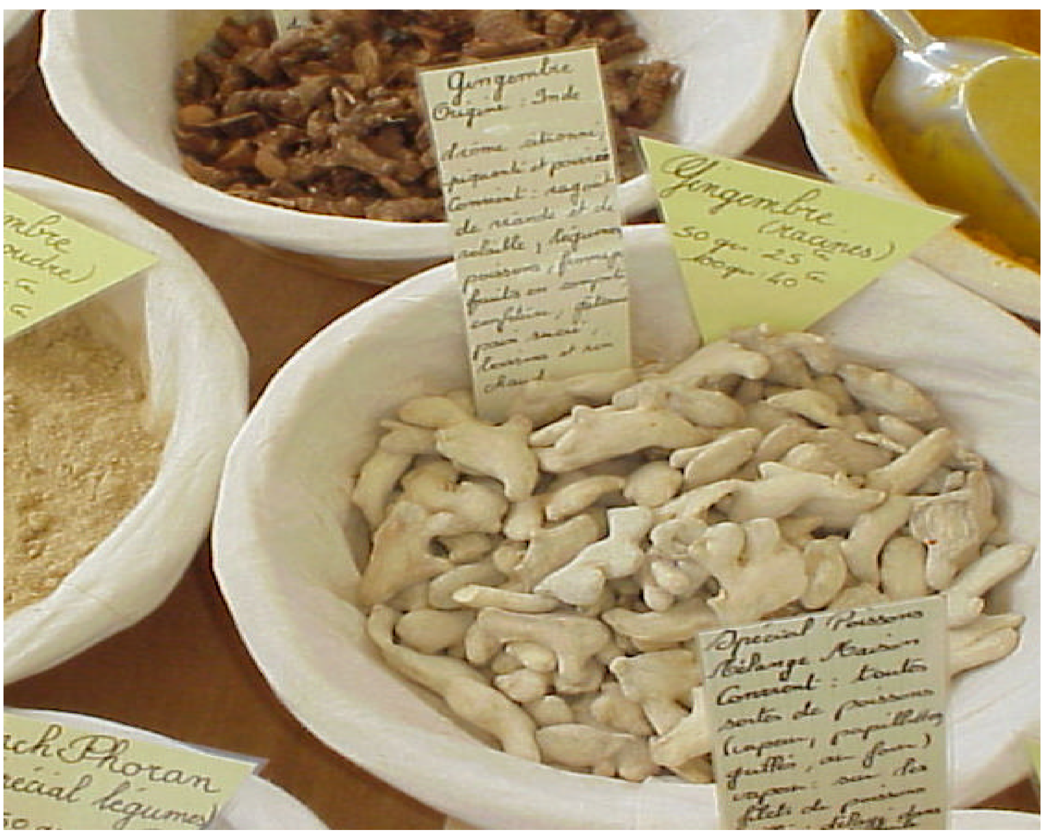
Market Brief

2001

The Market for

Dried Ginger

in the European Union



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Dried Ginger

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ITC

INTERNATIONAL TRADE CENTRE UNCTAD/WTO

GENEVA

2001

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Prepared by Dr Peter Martin Jaeger

peter@jaeger.sonnet.co.uk

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ABBREVIATIONS

AFNOR	Association Française De Normalisation
BSI	British Standards Institute
CIF	Cost, insurance and freight
CN	Combined nomenclature of the European Union
ESA	European Spice Association
EU	European Union (currently 15 member countries)
EUROSTAT	Statistical Office of the European Union
FAO	Food and Agriculture Organization of the United Nations
FOB	Free on board
HS	Harmonized System nomenclature
ISO	International Standards Organization
ITC	International Trade Centre UNCTAD/WTO
SITC	Standard International Trade Classification

The image on the cover page is of ginger provided by 'Epicez Tout.'
Email epicez-tout@wanadoo.fr

EXECUTIVE SUMMARY

The pungent rhizomes of ginger are exported to Europe from the tropics as a popular flavouring and confection for the food and drink industries. The international trade of the ginger rhizome occurs in various forms including fresh, dried, preserved in brine of sugar syrup, or frozen. However, it is only the dried ginger rhizome that is considered to be a spice, one that is imported into the European Union (EU) in excess of 5,000 tonnes per year. The proportion sold as a ground spice through retail outlets is quite small. Industrially, dried ginger is either used in a ground form or as an oil or oleoresin.

EU Imports of ginger grew during the late 1990s; however, following some difficulties of product availability from China in 1997, traders report a stable and quiet market. Demand for ginger is influenced by a number of drivers in the flavouring market. For example, an increased requirement for authentic flavours in oriental-type meals is offset by reduced demand from the processed meat industries. Another example is the association of supposed therapeutic properties with ginger, an important opportunity for several sectors, such as the drinks industry, to expand demand in the medium term.

Two extractors have relocated their ginger processing to India, and this will have an impact on the UK requirement for imports of dried ginger. Nevertheless, the spice is an important flavour that is well known throughout Europe and demand will persist. New entrants to the market must establish a position through quality, performance and reliability linked to competitive pricing.

A. PRODUCT DESCRIPTION

This Market Brief covers the spice dried ginger, listed within the following codes:

HS	0910.10	Ginger
SITC3	075.27	Ginger except preserved in sugar or conserved in syrup

Ginger is traded internationally in a variety of formats: the fresh product, lightly processed dried rhizomes (underground root-like stems), or pieces of rhizome ground powder, extracts (ginger oil and ginger oleoresin), and preserved in brine or in sugar (in syrup or as crystallised ginger). There is also a trade in frozen ginger roots.

It is only the dried product, prepared from the tuberous rhizomes of Zingiber officinale Roscoe, which is considered to be a spice and which, unless otherwise specified, will be the main focus of this Market Brief.

Dried ginger is presented in various forms:

- As a whole rhizome, peeled or not peeled
- In split or sliced pieces, again peeled or not peeled
- Ground

Trade statistics do not distinguish the different forms, nor do they distinguish between the fresh and the dried product. Dried ginger is included in the Combined Nomenclature of the European Union under the following codes:

09.10-1011 Ginger, whole roots, pieces or slices, for the industrial manufacture of essential oils or resinoids

09.10-1019 Ginger, whole roots, pieces or slices (excluding for the industrial manufacture of essential oils or resinoids)

09.10-1090 Ginger (excluding whole roots, pieces or slices)

These categories do not refer to any of the forms of ginger in sugar or brine, but the code 09.10-1019 does include fresh ginger. This complicates the interpretation of trade statistics as ginger is a widespread crop throughout the tropics, but only China, India and Nigeria are large scale exporters of dried ginger and account for most of the international trade.

B. PRODUCTION, CONSUMPTION AND FOREIGN TRADE

Production

Zingiber officinale is a tropical crop that is tolerant of a wide range of environmental conditions. However, it grows best cultivated as a plantation crop in tropical areas of high rainfall Currently, India leads the global production of ginger.

Most of the dried ginger that is available to the international trade is simply sun dried over a few days, but artificial drying is also used in areas lacking a defined dry season to coincide with the harvest. The rhizome is dried to 10-12% moisture content.

Dried ginger is usually presented in a split or sliced form. Splitting is said to be preferred to slicing, as slicing loses more flavour, but the slices are easier to grind and this is the predominant form of dried ginger in the market at present. Whole dried rhizomes are also traded, but the drying is inefficient and expensive, and there is a risk of spoilage during the long drying time.

Sometimes ginger is peeled, but this is expensive in labour, and, although it gives a fine appearance to the rhizome, the flavour and the weight are reduced. This is a speciality product.

Some dried ginger is ground at origin. The process is simple, requiring only a hammer mill or equivalent; however, the product loses flavour quite rapidly and the risk of hygiene problems outweighs the cost-saving to the importer.

Dried ginger from the three main origins has the following distinctive characteristics, all of which are important to the end-users:

- Nigerian ginger rhizomes have the highest oil and extract content. The dried ginger is usually sold in split form. No bleaching is carried out and the colour is yellow. The Nigerian flavour is more pungent and has lemony tones.

- Indian ginger rhizomes (often designated Cochin or Calicut) are not bleached and usually sold split. The product is pale yellow with a good flavour, with a lemon undertone and lacking the pungency of the West African product.

- Chinese ginger rhizomes are sliced. The colour is pale as the product is bleached. The rhizome is often more fibrous.

Foreign trade

China, India and Nigeria are the main suppliers of dried ginger to world trade. The largest import markets are North America and Europe. Dried ginger is easily stored for long periods and there is no seasonality to the trade, either in supply or demand.

Imports

Imports of dried ginger into the EU are estimated at 5,000 tonnes per year. The estimation is based on recorded imports sourced from Nigeria, India and China. Trade sources confirm that these are the major origins supplying dried ginger and that their exports are predominantly of the dried product. Table 1 indicates the progress of dried ginger imports from these three origins over the past five years.

There is an upward trend to total imports, and the Nigerian product shows substantial gains in market share:

Table 1 – Selected Origins of Dried Ginger Imports into the European Union

Origins	1995	1996	1997	1998	1999
China	3,330	2,306	809	2,334	2,422
India	371	556	1,044	710	685
Nigeria	972	1,051	2,501	2,823	1,934
Total	4,673	3,913	4,354	5,867	5,041

Units: tonnes — ***Source***: EUROSTAT

N.B. Total shows total imports to the EU from these three origins

Dried ginger from Nigeria, India and China enters the EU primarily via the UK, the Netherlands and Germany (see Table 2 below).

Table 2 – Main Destinations of Dried Ginger Imports into the European Union

	1995	1996	1997	1998	1999
France	246	246	337	479	307
Germany	1,184	756	880	1,051	926
Netherlands	941	1,073	1,128	1,622	1,177
UK	2,074	1,533	1,832	2,361	2,194
Other	228	305	177	354	436
Total	4,673	3,913	4,354	5,867	5,041

Units: tonnes — ***Source***: EUROSTAT

N.B. data show imports from Nigeria, India and China

The UK is the major import destination, with the Netherlands in second place. However, these figures may be somewhat misleading as they do not take into account re-exports, which include unidentified fresh ginger, as well as the export of processed dried ginger (in mixed spices for example). There is, therefore, no means of quantifying neither the dried ginger trade within the EU nor national consumption.

Consumption

Dried ginger is used in many different cooking styles. It is an important spice in Asian, Caribbean and African cooking. In Europe, the spice is used in home bakery; within European food manufacturing and catering, it is an important additive to a wide range of ethnic products as well as to processed meats and soft drinks, such as ginger ale. Latterly, the requirement for ginger in teas and infusions has grown due to its reputation as a medicinal plant associated with digestive health.

C. MARKET CHARACTERISTICS

The spice market requires varieties with a high yield of oil (at least 2%) or extract (at least 6%).

The primary use of dried ginger in Europe is industrial with the extraction, distillation and food processing industries using most of the product. Grinding and packaging for the retail market is of less importance, although there is an increasing demand for ginger in curry mixes.

Indian dried ginger is usually considered too expensive for the mainstream spice trade. Much of the Indian product stays within traditional linkages between exporters and market-based suppliers of ingredients to manufacturers and retailers of Asian foods. Dried ginger originating from Nigeria is currently the principal type of ginger on the European market, in part because of the high oil and extract content, but mainly because it is significantly cheaper than other grades. The product is said to offer a better flavour than Chinese dried ginger, but the balance of price and oil content has been a particular characteristic of the dried ginger market in Europe. When Chinese prices were significantly lower, European importers preferred this grade. Furthermore the Nigerian exports suffered a poor reputation for quality and performance. More recently, now that the Chinese product has become relatively expensive, the Nigerian ginger is preferred, and a noted improvement in performance should help maintain this gain in market share. The grinders of dried ginger have tended to favour the Chinese product, which has a paler colour that is achieved by treating the rhizome with sulphur dioxide (SO_2). In addition, SO_2 has anti-microbial properties, resulting in fewer microbiological quality problems. However, the EU regulations on permitted levels of SO_2 residues have been tightened and are now a concern with this origin.

Some dried ginger is imported in ground form, traditionally by ethnic communities with links to suppliers, but this trade is of limited significance. Some extraction of ginger has been moved to the producing countries. Two major UK extractors have relocated facilities to India and indeed India now imports Nigerian dried ginger for extraction.

D. MARKET ACCESS

Tariffs

Dried ginger enters the European Union free of any import duties and quotas.

Regulations

The harmonisation of legislation across the EU has simplified the entry and circulation of goods into the EU, and tariffs are gradually being reduced. However, a second generation of issues in food regulation is now appearing, for example:

- Labelling
- Food additives
- Pesticides and contaminants
- Packaging waste
- Hygiene
- Organic products
- Standards
- Phytosanitary questions
- Ethical issues.

Specifications & Standards

The industry specifications for dried ginger are quite simple. There should be no visible mould and minimal extraneous matter. It is important that the moisture content remains between 10-12% since higher levels will lead to mould problems. The product should be 'crispy' but becomes brittle at lower moisture levels. The principal issues relate to cleanliness, hygiene, mould and aflatoxin levels.

The International Standardisation Organisation has issued specifications that can be applied to ginger. It is however, as important to match the customers' requirements.

The European Spice Association has also developed a list of Quality Minima for spices (see Annex 1).

E. PRICES

Annual average unit import values are shown in Table 3 (below). The figures are calculated from EU import data to give an indication of values over time for different origins. These are not real prices, and there may be inaccuracies in reporting, but they do indicate trends.

Table 3 - Unit Import Value of Dried Ginger

Origins	1995	1996	1997	1998	1999
Nigeria	0.66	0.91	1.21	1.01	0.8
India	1.65	1.54	1.68	1.97	2.60
China	0.88	1.10	2.32	1.39	1.21

Units: ECU/kg **Source**: Calculated from EUROSTAT

1 ECU/USD for 1995-1999 respectively: 1.308,1.270,1.134, 1.121, and 1.066

From 1995 to 1997 the value of Chinese ginger rose substantially. While the trade had been heavily dependent on Chinese suppliers, the price rise provoked an appraisal of alternatives. Imports of Indian and Nigerian ginger increased substantially in 1997 to make up the shortfall of the Chinese product. Market suspicion of Nigerian ginger, which had had a poor reputation, was overcome and the traders reported an improvement in Nigerian ginger quality. The increased demand led to a rise in Nigerian exports.

From 1998, the availability of Chinese ginger improved, leading to a decline in value, and the Chinese exporters regained some market share. Pressure of supplies from both China and Nigeria from 1998 onwards forced Nigerian prices down again, and it continued to trade at a discount to the Chinese product.

Lately, traders reported a continuing demand for Nigerian ginger, particularly from the distillers and extractors, where the improved quality on the market and the discount to the Chinese product have led to a preference for this type. Import statistics to confirm this point have not yet been released.

The Market News Service of the ITC and the Public Ledger (see details in 'List of sources') publish up-to-date quotes for ginger in a number of markets. These are useful for monitoring current conditions.

Table 4 is compiled from market prices in November for each of the passed three years. The series shows that the decline in values of the Nigerian and Chinese gingers noted above continued into 2000. Nigerian values fell particularly low, but were reported by traders as rising again by the first quarter of 2001.

Table 4 - Importer Selling Prices for Dried Ginger

Origins	1998	1999	2000
Nigeria	1100	550-800	525-700
India	1600	2100-2200	2000
China Sliced	1650-1750	1200-1300	1100

Units: US $/tonne **Source**: Market News Service Bulletin 45

F. DISTRIBUTION CHANNELS

Importers based in London, Rotterdam and Hamburg handle the major part of the dried ginger trade. Some grinders also import directly but they usually prefer to leave the risk and the stock holding with trading companies.

Dried ginger is a stable product and stores well so there is no seasonality to the trade.

G. PACKAGING AND LABELLING

Most standards, both national and international, require the spice to be packed in clean and hygienic materials which do not interact with the product and which protect it from both moisture pick-up and loss of essential oils.

The nature and characteristics of the packaging are not always specified, but rather left to the buyer and seller. The only exception relates to packaging material of jute or sisal in which case the European Spice Association (ESA) specification states that this type of packaging should conform to CAOBISCO Standard Reference C502-51-sj.

Whole, sliced or split dried ginger is packed in woven polypropylene sacks with a net weight of 25kg.

Labelling requirements include:

- Name of the product
- Name and address of producer or packer
- Date of packing
- Net mass (kg)
- Country of origin
- Code or Batch number
- Year of harvest
- Details of any special treatment
- Any other information requested by the purchaser

H. SALES PROMOTION

As a general rule, end-users do not buy directly from origin, preferring not to carry the risk or hold expensive stock. Any export marketing effort directed at the users themselves must, therefore, take into account the need to hold stock in the destination market to allow a regular draw down of supplies of known quality.

Alternatively, promotion must be aimed at the dealers (see list of importers). Exporters can distinguish themselves by developing a reputation for reliability and high quality.

A visit to a European trade fair can provide the exporter with valuable knowledge of the trade beyond immediate experience as well as introducing new contacts. In particular, trade fairs can give insight to competitors' capabilities and the market issues of the moment.

Exhibitors are generally sales orientated and less likely to be discussing their purchasing requirements.

Exhibiting at a trade show can provide an excellent showcase, but must be done professionally for a positive effect. While the expense may be beyond the means of individual exporting companies, a co-operative effort between companies, or as a trade association, can divide the costs to a more manageable level.

The following trade fairs/exhibitions are the main events of interest to EU spice imports:

Title	Country	Month	URL/email
Alimentaria	Spain / Portugal	March – Annual	alimlisboa@mfiberia.es
ANUGA	Germany	Oct – Biennial	anuga@koelnmesse.de
Biofach	Germany	Annual	www.biofach.de
European Ethnic Food, Drink, Restaurant and Catering	UK	Annual	www.europeanethnicfood.co.uk
Food Ingredients – Europe	UK (2001) but location varies	Biennial	www.fi-events.com
IFE	UK	March - Biennial	www.ife.co.uk
SIAL	France	Oct-biennial	www.sial.fr/indexs.htm

I. MARKET PROSPECTS

Traders describe the market for ginger as stable and quiet. There is some background growth evident in the import statistics, but this is a complex market with end users responding to different drivers. On the up side, an increase in demand is claimed in the food preparation sector, as the consumer becomes more adventurous in seeking new flavours. Thai food for example, which uses ginger, is gaining popularity. Similarly, there is an increasing demand for ginger from the drinks industry in the form of teas and also health drinks where ginger is considered to have a positive effect.

On the down side, the suppliers to the processed meats industries, particularly in Germany, report a slack demand for meat spices – typically pepper, nutmeg but also ginger – caused by consumer fears over meat consumption and safety. The German processed meat industry has suffered drastically over fears in the market of BSE (Mad Cow disease) and with the current outbreak of Foot and Mouth disease - this may have an impact on the German demand for ginger. The recent move to processing ginger in India for oil has yet to show any effect in the import statistics, but relocation by two UK extraction companies will have an impact on the UK import requirement for dried ginger.

The net result is a stable market in Europe for dried ginger showing some background growth. In order to compete successfully, any new exporters to the market must aim at providing a quality and service that will distinguish them from the existing players.

J. IMPORTANT ADDRESSES

Importers

The following list provides contact details for some of the major importers and processors of dried ginger in Europe. A more complete list may be obtained from national trade associations.

No recommendation to trade is intended with this list, and all sellers are advised to make their own checks prior to entering into any financial commitments.

Germany (+49)	
Fuchs Gewürze GmbH Westring 15-17 D-49201 Dissen	Tel 054 21 30 90 Fax: 054 21 30 91 11 http://www.fuchs-gewuerze.de
Hamburger Gewürz-Mühle Hermann Schulz GmbH Grossmanstrasse 221 D-20539 Hamburg	Tel 040 78 97 01 30 Fax: 040 78 97 01 31
Hermann Laue GmbH Beimoorweg 11 D-22923 Ahrensburg	Tel 041 02 49 60 Fax: 041 02 49 61 04 http://www.hela-food.de
Poppe & Groninger Stadtdeich 4 D-20097 Hamburg	Tel 040 23 62 070 Fax: 040 23 62 07 77
Schwab GmbH Postfach 11 03 84 D-20403 Hamburg	Tel 040 36 49 71 Fax: 040 36 77 90
Netherlands (+31)	
Catz International BV PO Box 180 3000 AD Rotterdam	Tel 10 411 3440 Fax: 10 411 89 13 http://www.catz.nl
Man Producten Rotterdam BV PO Box 253 3000 AG Rotterdam	Tel 10 417 7377 Fax: 10 414 7550 http://www.manproducten.nl
Van Sillevoldt BV PO Box 64 3350 AB Papendrecht	Tel 78 615 1755 Fax: 78 615 3107

United Kingdom (+ 44)	
Blair Impex Ltd 72 Bolton Road Windsor Berkshire SL4 3JL	Tel 01753 831 344 Fax: 01753 830 128
British Pepper & Spice Rhosil Road Brackmills Northampton NN4 7AN	Tel 01604 766 461 Fax: 01604 763 156
Chambers & Knight Thames House 18 Park Street London SE1 9EL	Tel 020 7357 7821 Fax: 020 7378 8582
Deltacrown Fooks & French Linton House 164-180 Union Street London SE1 0LH	Tel 020 7928 0404 Fax: 020 7926 1238
McCormick Thame Road Haddenham Buckinghamshire HP17 8LB	Tel 01844 292930 Fax: 01844 294294 http://www.cpd.mccormick.com
T Choithram & Sons Choithram House Lancelot road Wembley Middlesex HA0 2BG	Tel 020 8903 8311 Fax: 020 8900 1426

EUROPE	**ITALY (+ 39)**
European Spice Association 6 Catherine Street London WC2B 5JJ England Tel 44 (0)20 7836 2460 *Fax: 44 (0)20 7836 0580*	AIIPA - Associazione Italana Industrie Prodotti Almentari Corse di Porta Nuova 34 I-20121 Milan Tel 02 65 41 84 Fax: 02 65 48 22
BELGIUM (+ 32)	**NETHERLANDS (+ 31)**
AFISPA Roodebeekelaan 30 B-1030 Brussels Tel (0)2 743 87 46 Fax: (0)2 736 81 75	Nederlandse Vereniging voor de specerijhandel PO Box 64 3350 AB Papendrecht Tel (0)78 615 17 55 Fax: (0)78 615 31 07
FRANCE (+ 31)	**SPAIN (+ 34)**
Syndicat National des Transformateurs de Poivres, Epices, Aromates et Vanille 8, Rue de llsly F-75008 Paris Tel (0)1 53 42 33 80 Fax: (0)1 53 42 33 81 *Email covip@wanadoo.fr*	Afexpo Calle de Santa Catalna 1 3 E –30004 Murcia *Tel (0)9 68 21 40 89* *Fax: (0)9 68 21 9 6 77*
GERMANY (+ 49)	**UNITED KINGDOM (+ 44)**
FACHVERBAND DER GEWURZINDUSTRIE E.v. Reuterstrasse 151 D-5300 Bonn 1 Tel (0)228 21 61 62 Fax: (0)228 22 9 4 60	International General Produce Association Ltd Gafta House 6 Chapel Court London EC2A 3DQ Tel (0)20 7814 9666 Fax: (0)20 7814 8383 http://www.igpa.com Seasoning and Spice Association 6 Catherine Street London WC2B JJ Tel (0)20 7836 2460 Fax: (0)20 7836 0580

Other organizations

CBI **Centre for the Promotion of Imports from Developing Countries** P.O. Box 30009 3001 DA Rotterdam the Netherlands Tel + 31 10 201 3434 Fax: + 31 10 411 4081 http://www.cbi.nl	**ISO** **International Standardisation Organisation** PO Box 56 CH-1211 Geneva Tel + 41 22 749 01 11 Fax: + 41 22 733 34 30 http://www.iso.ch
CTA **Technical Centre for Agricultural and Rural Co-operation** P.O. Box 380 6700 AJ Wageningen the Netherlands	**ITC** **International Trade Centre** Palais des Nations P.O. Box 10 1211 Geneva 10 Switzerland Tel + 41 22 730 0111 Fax: + 41 22 733 4439 http://www.intracen.org
European Commission Rue de la Loi 200 B-1049 Brussels, Belgium Tel + 32-2 299-1111 (switchboard) Fax: + 32-2 295-0138 / 39 / 40 http://europa.eu.int/comm/index_en.htm	**Deutsche Gesellschaft für Technische Zusammenarb. (GTZ) GmbH** Economic Devpt and Employment Prom Dag-Hammarskjöld-Weg 1-5 Postfach 51 80 D-65726 ESCHBORN Germany Tel: (0049 6196) 79 1229, 79 0 Fax : (0049 6196) 79 6150 Email: jochem.lange@gtz.de URL: http://www.gtz.de

K. LIST OF SOURCES

Publications:

- On-line bookstores such as www.amazon.com, provide the best means of searching for subjects or titles.
- Spices - Volume 2 - (1987) Longman Group Ltd, Harlow, England
- Guidelines for Exporters of Spices to the European Union - Commonwealth Secretariat, London, UK
- Market Research File on Spices – Overview of the EU, Poland, Hungary, Czech Republic, Russian Federation - International Trade Centre, Geneva, Switzerland
- Dried Herbs & Spices – A packaging Manual - (1999) International Trade Centre, Geneva, Switzerland
- Handbook of Spices, Seasonings, & Flavorings - (2000) Technomic Publishing Company, Inc, Lancaster USA

Periodicals:

Food News
80 Calverley Road
Tunbridge Wells
Kent TN1 2UN
UK

Tel + 44 (0)1892 533 813
Fax:+ 44 (0)1892 511 803
http://www.agra-food-news.com

International Food Ingredients
Miller Freeman BV
PO Box 200
3600 AE Maarssen
The Netherlands

Tel + 31 (0)346 55 94 44
Fax: + 31 (0)346 57 38 11
http://www.mfbv.com

Marchés Tropicaux
190 Boulevard Haussmann
75008 Paris
France

Tel + 33 (0)1 44 95 99 50
Fax: + 33 (0)1 44 95 99 79
http://www.marches-tropicaux.com

Market News Service
International Trade Centre
Palais des Nations
P.O. Box 10
1211 Geneva 10
Switzerland

Tel + 41 22 730 0111
Fax:+ 41 22 733 4439
http://www.intracen.org

The Public Ledger
80 Calverley Road
Tunbridge Wells
Kent TN1 2UN
UK

Tel + 44 (0)1892 533 813
Fax: + 44 (0)1892 544 895
http://www.public-ledger.com

Standards:

▪ ISO 1003:1980 Spices and condiments	ginger, whole, in pieces or ground - specification
▪ ISO 13685:1997 Ginger and its oleoresins	determination of the main pungent components (gingerols and shogaols) Method using high-performance liquid chromatography

Websites:

Sites of interest, often with good links to other sites, include:

▪ http://ipm_www.ncsu.edu/cernag/cern.html	virtual library of agriculture
▪ http://www.fintrac.com/gain/	wide range of horticultural information from production through to marketing
▪ http://www.natural-products.net	useful address lists
▪ http://www.raise.org	USAID funded initiative, providing market information and technical assistance to increase Rural and Agricultural Incomes with a Sustainable Environment
▪ http://www.ucdavis.edu	Website of the University of Davis in California. Extensive publications and resources

ANNEX 1

EUROPEAN SPICE ASSOCIATION SPECIFICATIONS OF QUALITY MINIMA FOR HERBS AND SPICES - GINGER

Abbreviations: weight by weight (W/W), ash insoluble acid (AIA), volatile oil (V/O), volume by weight (V/O)

SUBJECT	SPECIFICATIONS
Extraneous matter	Herbs 2%, Spices 1%
Sampling	For routine sampling) Square root of units/lots to a maximum of 10 samples. (For arbitration purposes) Square root of all containers E.g. 1 lot of pepper may = 400 bags, therefore square root = 20 samples.
Foreign Matter	maximum 2%
Ash	(ISO) maximum 8% W/W
Acid Insoluble Ash	(ESA) maximum 2% W/W
H_2O	(ISO) maximum 12% W/W
Packaging	Should be agreed between buyer and seller. If made of jute and sisal, they should conform to the standards set by CAOBISCO Ref C502-51 -sj of 20-02-95. However, these materials are not favoured by the industry, as they are a source of product contamination, with loose fibres from the sacking entering the product.
Heavy Metals	Shall comply with national/EU legislation.
Pesticides	Shall be utilised in accordance with manufacturers' recommendations and good agricultural practice and comply with existing national and/or EU legislation.
Treatments	Use of any EC approved fumigants in accordance with manufacturers' instructions, to be indicated on accompanying documents. (Irradiation should not be used unless agreed between buyer and seller).
Microbiology	Salmonella absent in (at least) 25g. Yeast & Moulds 10^5/g target, 10^6/g absolute maximum E Coli. 10^2/g target, 10^3/g absolute maximum Other requirements to be agreed between buyer and seller.
Off Odours	Shall be free from off odour or taste.
Infestation	Should be free in practical terms from live and/or dead insects, insect fragments and rodent contamination visible to the naked eye (corrected if necessary for abnormal vision).
Aflatoxins	Should be grown, harvested, handled and stored in such a manner as to prevent the occurrence of aflatoxins or minimise the risk of occurrence. If found, levels should comply with existing national and / or EU legislation. In the case of ginger, EU Directive 3347/99 of 1 January 2001 applies: max. 10 ppb total aflatoxin max. 5 ppb B1 aflatoxin Extensive sampling plan
Volatile Oil	(ISO) 1.5% V/W min
Adulteration	Shall be free from.
Bulk Density	To be agreed between buyer and seller.
Species	To be agreed between buyer and seller.
Documents	Should provide - details of any treatments the product has undergone; name of product; weight; country of origin; lot identification/batch number; year of harvest.

Notes on Methodology Used in setting Standards

Please refer to the following methods when analysing products:

Moisture	ISO 939
Total Ash	ISO 928
Acid Insoluble Ash	ISO 930
Volatile Oil	ISO 6571

The co-ordinates of the European Spice Organization are listed under 'Trade Associations.'