

The market for

Vanilla

in the European Union



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ITC



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ABBREVIATIONS

ACP	African, Caribbean and the Pacific states
CIF	Cost, insurance and freight
EU	European Union (currently 15 member countries)
EURO STAT	Statistical Office of the European Union
FAO	Food and Agriculture Organization of the United Nations
FOB	Free on board
GSP	Generalized System of Preferences
HS	Harmonized Commodity Description and Coding System
ISO	International Standards Organization
ITC	International Trade Centre UNCTAD / WTO
LDC	Least developed countries
SITC	Standard International Trade Classification

GLOSSARY

Some of the terms used in describing vanilla are defined here. For more detail see the specification ISO 3493 (details in annex).

Bean	Same as pod; the whole fruit of vanilla
Cured vanilla	Fruit that has undergone the appropriate treatment for developing the flavour
Cut Vanilla	Parts of pods deliberately cut or broken, often to remove damaged or spoiled pieces
Frosted	Pods showing crystals of naturally exuded vanillin
Givre	Exudate of pure vanillin on the surface of the cured pod, sometimes confused with mould
Green vanilla	Fruit that has reached the correct stage of ripeness but not cured
Pod	Same as bean; the whole fruit of vanilla
Red filaments	Fine lines of reddish brown colour along the pod
Split	Pod that is naturally opening longitudinally to release the seeds
Supple vanilla	Cured vanilla that is fleshy and flexible
Woody vanilla	Highly desiccated pods, no longer supple
Vanillin	The primary flavour component of the cured bean. Vanillin can also be produced synthetically.

The image of the front cover was provided by www.orchidworks.com

EXECUTIVE SUMMARY

With vanilla prices in 2001 at \$150/kg, the highest levels in memory, the market is nervous about the prospects for this expensive flavouring. Could the prices move higher, or will the current valuation reduce demand, stimulate supply and lead to a free fall in prices?

Price volatility is a feature of the vanilla market. It is a consequence of a stable global demand supplied by a fluctuating harvest from a small number of origins. The demand for quality vanilla is largely supplied by one origin, namely Madagascar and availability is strongly influenced by climate. Periods of shortage alternate with surplus.

Although vanilla can be stored, its value is usually too high for this to be considered for any length of time: the financing costs, the risk of deteriorating quality and the possibility of an adverse price swing all add up to deter the trade from holding stocks.

To survive the fluctuations of the market, the exporter must focus on quality. The demand for quality vanilla from the extraction industries is relatively constant—the difficulty of changing recipes and the proportionately small recipe cost of vanilla underpin the demand. By focussing on quality the exporter can move away from competing on price alone, where the 'winner' is the lowest price seller. The current high price levels are a consequence of cyclone damage in Madagascar and inclement weather in Indonesia. All the major producers are now sold out. In the next 18 months, Madagascan and Indonesian output should be restored, and new plantings are developing in a number of other countries. In these circumstances, and without further climatic catastrophe, a surplus will force prices back down to floor level until the next deficit. Suppliers of quality vanilla will be the best placed to survive a period of low prices.

A. PRODUCT DESCRIPTION

This Market Brief covers the European Union market for the prepared fruits (pods or beans) of the tropical orchid genus *Vanilla*, classified under the following codes:

HS	09 05.00	Vanilla
SITC3	075.21	Vanilla

Almost all vanilla in international trade is harvested from the species *Vanilla fragrans* (Salisbury) Ames (previously *V. planifolia* Andrews). There is a small amount of production from *V. tahitensis* J.W. Moore and certain other forms of the genus *Vanilla* obtained from seeds, which may be hybrids of *V. fragrans*. The commodity trade codes of HS and SITC do not distinguish between the species.

B. PRODUCTION, CONSUMPTION AND FOREIGN TRADE

Production

Vanilla is a climbing orchid cultivated in a number of countries around the tropics. Madagascar, Indonesia, the Comores Islands and Uganda dominate global supply with production from the species *V. fragrans*. Production of other species and hybrids of *Vanilla* is limited to minor output from Tahiti and Guadeloupe.

Vanilla is planted from cuttings and requires two to three years to come into bearing. Flowers must be individually hand-pollinated and the pod (or 'bean') ripens over nine months. The ripe pods are handpicked and then cured in a process that may take several months. The cured beans are commercialised and exported. There is no further processing at origin.

According to FAO data, the main producer of vanilla in 2000 was Indonesia with 40% of estimated world production totalling 5,312 metric tonnes, followed by Madagascar with output exceeding 30% of world production. Uganda figures as one of the principal producers of vanilla in the same year, quadrupling its output in the last decade to 40 tonnes. These figures may overestimate the actual output of vanilla, but it is difficult to quantify accurately the local consumption of vanilla that never enters the recorded international trade.

The global vanilla crop in 2000 was exceptionally low as a result of adverse weather conditions in Indonesia and cyclone damage in Madagascar.

Consumption

Global imports are estimated at over 3,500 tonnes per year. The major import markets for vanilla are the USA, with about 50% of international trade, and Europe, with about 30% of global imports. Most vanilla is extracted for use as vanilla essence by the food industries and fragrance manufacturers, but there is also retail and catering demand for the whole pods.

Vanilla flavouring is particularly important in the production of ice cream, soft drinks such as colas, bakery products and confectionery, but most of the demand for flavouring is supplied by synthetic vanillin at a fraction of the price of the natural product. The extract occupies a small high quality niche in the flavouring market. Vanilla consumption grew rapidly in both the North American and the European markets during the late 1990s, driven by the increasing demand for natural products, for luxury ice creams and yoghurts and for high quality prepared foods.

Since the extraction industries are the major consumers of vanilla pods, the vanillin content of the pods, in terms of quantity and aroma profile, is the primary consideration in quality. The total content of vanillin is determined by the production and processing of the pods - the so-called 'Bourbon' type of vanilla from the Madagascar and Comoros producers sets a benchmark for both content and profile. Indonesian vanilla, which is often harvested at an immature stage, is considered a low quality product and priced accordingly.

Apart from *V. fragrans* there is a tiny production of other species of Vanilla, which are statistically insignificant but contribute slightly different aromas for the specialised requirements of the fragrance industries.

Imports

The data in this section describe the international trade in vanilla into and within Europe.

Europe imports primarily the 'bourbon' type of vanilla as indicated by the source of supply. Total imports have grown substantially since 1995, with a sudden increase in 1999 (see Table 1 below).

Table 1 - Origin of Vanilla Imports into the European Union

	1995	1996	1997	1998	1999
Uganda	4	0	1	1	2
Madagascar	487	486	577	496	719
Comoros	58	45	86	133	109
Jamaica	0	2	10	0	10
Indonesia	36	54	28	47	24
Tonga	10	8	0	3	9
French Polynesia	5	2	6	2	2
Others	94	157	162	162	176
Total Imports	694	754	869	852	1051

Units: tonnes

Source: EURO STAT

N.B. data show imports from partners outside the EU

Table 2 (see page 4) indicates that the principal EU importers are France, Germany and the UK where the major dealers are located. The rise of imports into the UK reflects the establishment of a European trading centre in England by the largest vanilla trader in the world, Zink & Triest.

Table 2 - Destination of Vanilla Imports into the EU

	1995	1996	1997	1998	1999
France	288	344	364	380	459
Belgium/Lux	5	23	2	9	0
Netherlands	18	44	50	28	12
Germany	328	246	285	284	286
Italy	2	2	1	0	2
UK	40	63	121	141	283
Ireland	9	22	41	8	8
Denmark	2	6	4	1	0
Greece	0	1	0	0	0
Portugal	0	0	0	0	0
Spain	1	0	0	0	0
Sweden	1	0	0	0	0
Finland	0	0	0	0	0
Austria	0	3	1	1	1
Total	694	754	869	852	1051

Units: tonnes

Source: EURO STAT

N.B. data show imports from partners outside the EU

Apparent consumption

In Table 3 net import figures give some indication of the scale of consumption. This is done by deducting exports from the total imports for each member state. However, the data may be distorted by storage of vanilla over long periods of time. The strong growth in British vanilla imports, taking net imports in the UK beyond the German imports, likely reflects the build up of stocks.

Table 3 - Net Imports (apparent Consumption) of Vanilla

	1995	1996	1997	1998	1999
France	190	307	337	358	418
Belg/Lux	36	58	14	46	9
Netherlands	25	102	70	161	83
Germany	124	97	110	156	167
Italy	10	20	9	9	18
UK	55	21	68	148	277
Ireland	76	131	126	123	95
Denmark	29	14	6	4	87
Spain	169	147	264	122	91
Sweden	11	6	7	13	26
Austria	-11	40	58	49	53
Total	725	945	1072	1202	1314

Units: tonne s

Source: EURO STAT

Other important consumers include Spain and Ireland. Here vanilla is used for the preparation of concentrate for cola drinks.

C. MARKET CHARACTERISTICS

The EU market for vanilla is dominated by the demand from extractors. The demand for whole pods for catering and household use is relatively small and largely confined to France and Germany. There is increasing interest in vanilla pods in the retail market in the UK, inspired by promotion from celebrity chefs on television, but traditionally British households employ vanilla extract.

Therefore, demand in Europe for vanilla is largely industrial. Of this demand, a small proportion is for the fragrance and perfumery; the main use lies in flavouring. The industry prefers to work with the bourbon style vanilla with its higher vanillin content and its preferable aroma profile. While there is only limited demand for the top quality 'gourmet' pods, the European industries are not generally prepared to work with the inferior Indonesian grades.

Vanilla production is notoriously variable, and at times the industry has exhibited a lack of reliability, giving it a poor reputation. The flavour industries prefer to focus on the processing rather than the sourcing of raw material and generally avoid holding stocks. Specialist dealers therefore handle the import of vanilla.

The principal threat to vanilla demand comes from the possibility of substitution with the synthetic vanillin. The continued demand for the considerably more expensive vanilla extract derives from the manufacturers' reluctance to change recipes and from the continued preference of consumers for natural products. Legal requirements for products sold as based on natural products to use solely natural materials underpin this demand.

D. MARKET ACCESS

Tariffs

An import duty of 6% is added to the invoice value of vanilla imports to the European Union. Preferential duty rates are applied to a number of supplying countries: vanilla exports from ACP and LDC countries enter the EU free of duty, while a duty of 2.1% is applied to GSP origins. Exporters, looking to market within the EU rather than selling FOB, should confirm in advance the duty rate applicable to their territory. This may be done through potential trading partners within Europe, or some tariff information is available on http://europa.eu.int/com m /taxation_custom s

In order to benefit from preferential duty rates, shipments must be accompanied by the appropriate proof of origin. ACP shipments should be accompanied by Form EUR1 while LDC exports should use Form A.

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 regarding food regulation is now appearing, covering for example:

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

While there are national standards that apply in different markets, generally they are based on those of the International Standards Organisation. References for these can be found in the 'List of Sources' (see page 12). These are the minimum acceptable standards, but it is equally important to establish and match the customer's requirements.

E. PRICES

Early 2001, prices in the vanilla market were at historically high levels at \$150/kg. Crop failures in Indonesia, cyclone damage in Madagascar and some squeezing of the market led to a severe shortage in global availability. Currently, mid-2001, Madagascan and Comorian suppliers are sold out and no new supplies can be expected before late in the year. There is, therefore, further upward potential in prices in the near term, but the market will be watching the success of the 2001 harvest from July onwards for a guide to availability in early 2002.

Table 4 shows the unit import value of vanilla calculated from the EU import data. This gives an indication of CIF values over time for different origins. These are not real prices, and there may be inaccuracies in reporting, but they do indicate trends. They also reflect more typical values of vanilla.

Table 4 - Unit Import Value of Vanilla

	1995	1996	1997	1998	1999
Madagascar	35.00	23.46	18.99	21.24	20.92
Comoros	37.81	32.31	29.30	24.71	27.17
Indonesia	27.50	23.59	28.50	18.53	21.42

Units: ECU/kg

Source: Calculated from EURO STAT

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

The Market News Service of the ITC and the Public Ledger (see List of Sources, page 9) publish up-to-date quotes for vanilla in a number of markets. These are useful for monitoring current conditions, but have less relevance from a historical perspective due to the speculative nature of the trade.

F. DISTRIBUTION CHANNELS AND COMMERCIAL PRACTICES

A few specialised dealers handle most of the world-wide trade in vanilla. The most important European traders are listed here under 'Importers' (see page 11) and are located in Germany, France and the UK. Vanilla is imported and stored in their warehouses and re-distributed to the end-users, resulting in little second-hand trade in vanilla.

The extractors, processors and wholesalers of vanilla do not buy directly from origin to avoid carrying expensive stock. This allows them to focus their attention on their core activities and limits the risks and distractions of buying and shipping from overseas. In consequence, any attempt to sell directly to the end-user can only be successful if stocks are held in the destination market. Holding stock is however expensive and high risk.

A number of other trading companies may enter the market from time to time, but they only handle small quantities and may avoid the market, for example when prices are very high, in order to focus resources on other business.

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 CAO BISCO Standard Reference C502-51-sj.

Current national packaging standards should be verified – for example, there is a French standard V32 for selected spices including vanilla.

There are no prescriptive standards for packaging vanilla, but it is important to consider the following issues:

- The value of the product
- The possibility of deterioration through drying or mould
- The purchasers' requirements

Vanilla pods are graded by length and whether or not they are split. Pods of the same grade are tied together in bundles of about 250g. Traditionally, bundles in Madagascar are then packed in metal containers lined with waxed paper, but poly-lined cardboard cartons are now often used. Boxes or cartons usually weigh approximately 10kg net.

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

With the international vanilla trade largely channelled through a few major dealers, the opportunities for promotion are limited. However, in years of surplus production, when prices are depressed, there are more opportunities to market vanilla actively amongst a greater number of players. Above all, an established reputation for quality and reliability will enhance the chances of successful promotion.

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

Note that the 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/E-mail
Alimentaria	Spain /Portugal	March – Annual	alim.lisboa@mifiberia.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.fevents.com

IFE	UK	March - Biennial	www.ife.co.uk
SIAL	France	October - Biennial	www.sial.fr/indexe.htm

J MARKET PROSPECTS

With prices in 2001 at the highest levels in memory, the market is nervous about the prospects for vanilla. Could the prices move higher, or will the current level reduce demand and stimulate supply, leading to a free fall in prices?

In the short term, there is concern that Madagascar and the Comores are sold out, and, with no prospect of fresh supplies before the end of the year, prices may yet move higher. The market's attention in 2001 is on the developing crop, and by July 2001, when the harvest is well progressed, the production potential should be known.

The price rise in most of Europe has been made more severe by the comparative weakness of the Euro. Since vanilla is priced in US dollars, the purchasing power of the European extractors has fallen by 20% over two years. For much of the period, UK buyers have benefited from the relative strength of sterling, though the UK pound, as well, has weakened lately. In the medium term, there is concern that the high prices will encourage users to experiment with alternative recipes or with synthetic products. This could reduce demand. However, this concern may not be merited because the vanilla extract is usually used in small proportion in most recipes, and the quadrupling of the price does not have a correspondingly disastrous effect on the end price of the product. In addition, the alteration of recipes is difficult, often even prevented under labelling regulations effective when 'natural' products are specified. Where vanilla demand is, therefore, relatively stable, production fluctuates and the recent shortfall in output is likely to be more than replaced in the next few seasons. Firstly, existing plantings should return to former production levels by 2002, and so prices should move back down to more usual levels. However, by the 2002 season, new plantings from the late 1990s will also come into bearing from projects in China, India, Sri Lanka, and particularly Madagascar where the EU has supported substantial new production capacity. Thus the market is believed likely to move rapidly into surplus during 2002/2003. Any reduction in demand will compound this problem, and, under a structural surplus, there will be further downward pressure on prices.

The prospects for producers in the longer term are not encouraging. The price volatility of this market is difficult for small holders to endure. However, as noted above, the volatility is a consequence of the fluctuations in production while demand for vanilla remains relatively stable. It is therefore critical to aim to supply a quality product. Quality is achieved by good husbandry, strict attention to harvesting at the correct stage of ripening and properly conducted curing and packing. Low-grade vanilla can only compete in a market on price and in an oversupplied market will yield profitable returns.

K. IMPORTANT ADRESSES

Importers

The following list provides contact details for the major importers of vanilla in Europe. The vanilla trade is highly specialised, and while a number of companies handle small volumes from time to time, the companies listed here are consistently present in the market, handle significant volumes and set the market.

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.

Arco Océan Indien 61 av. de la Libération 0613 Grasse France	Tel: + 33 (0)4 93 42 41 00 Fax: + 33 (0)4 93 40 47 79 http://www.arco-ocean-indien.fr
Aust & Hachmann Ankerstrasse 23 0537 Hamburg Germany	Tel: + 49 (0)40 31 16 70 0 Fax: + 49 (0)40 31 16 70 51
Eurovanille 61 quai de Seine 75019 Paris France	Tel: + 33 (0)1 53 35 80 95 Fax: + 33 (0)1 53 35 80 99 http://www.eurovanille.com
Gebrüder Wollnhaupt Gutenbergstrasse 33-35 21465 Reinbek Germany	Tel: + 49 (0)40 72 83 00 Fax: + 49 (0)40 72 83 01 13 Info@wollnhaupt.com
Zink & Triest Shepton Mallet Somerset England	Tel: + 44 (0)1749 880 618 Fax: + 44 (0)1749 880 419 http://www.folexco.com

Trade associations

<p>EURO FÉ European Spice Association 6 Catherine Street London W C2B 5JJ England Tel: 44 (0)20 7836 2460 Fax: 44 (0)20 7836 0580</p>	<p>ITALY (+ 39) AIIPA - Associazione Italiana Industrie Prodotti Alimentari Corse di Porta Nuova 34 I-20121 Milan Tel: 02 65 41 84 Fax: 02 65 48 22</p>
<p>BELGIUM (+ 32) AFSPA Roode beekelaan 30 B-1030 Brussels Tel: (0)2 743 87 46 Fax: (0)2 736 81 75</p>	<p>NETHERLANDS (+ 31) Nederlandse Vereniging voor de specerijhandel PO Box 64 3350 AB Papendrecht Tel: (0)78 615 17 55 Fax: (0)78 615 31 07</p>
<p>FRANCE (+ 31) Syndicat National des Transformateurs de Poivres, Epices, Aromates et Vanille 8, Rue de l'Isly F75008 Paris Tel: (0)1 53 42 33 80 Fax: (0)1 53 42 33 81 Email: covip@wanadoo.fr</p>	<p>SPAIN (+ 34) Afxpo Calle de Santa Catalina 13 E - 30004 Murcia Tel: (0)96 821 40 89 Fax: (0)96 821 96 77</p>
<p>GERMANY (+ 49) FAH VERBAND DER GEWURZINDUSTRIE E.V. Reutersstrasse 151 D -5300 Bonn 1 Tel: (0)228 21 61 62 Fax: (0)228 22 94 60</p>	<p>UNITED KINGDOM (+ 44) International General Produce Association Ltd Grafton 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 W C2B JJ Tel: (0)20 7836 2460 Fax: (0)20 7836 0580</p>

Other organisations

<p>CBI Centre for the Promotion of Imports from Developing Countries P.O. Box 30009 3001 DA Rotterdam The Netherlands</p>	<p>Tel: + 31 10 201 3434 Fax: + 31 10 411 4081 http://www.cbi.nl</p>
<p>CTA Technical Centre for Agricultural and Rural Co-operation P.O. Box 380 6700 AJ Wageningen The Netherlands</p>	<p>Not available</p>
<p>European Commission Rue de la Loi 200 B-1049 Brussels, Belgium</p>	<p>Tel: + 32-2 299-1111 (switch board) Fax: + 32-2 295-0138 /39 /40 http://europa.eu.int/com/index_en.htm</p>
<p>ISO International Standardisation Organisation P.O. Box 56 CH-1211 Geneva</p>	<p>Tel: + 41 22 749 01 11 Fax: + 41 22 733 34 30 http://www.iso.ch</p>
<p>ITC International Trade Centre Palais des Nations P.O. Box 10 1211 Geneva 10 Switzerland</p>	<p>Tel: + 41 22 730 0111 Fax: + 41 22 733 4439 http://www.intracen.org</p>
<p>Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH Economic Development and Employment Promotion Dag-Hammarskjöld-Weg 1-5 Postfach 51 80 D - 65726 Eschborn Germany</p>	<p>Tel: (0049 619 6) 79 1229 , 79 0 Fax: (0049 619 6) 79 6150 Email: jochem.lange@gtz.de URL: http://www.gtz.de</p>

L I S T O F S O U R C E S

Publications:

Online book stores such as www.amazon.com, provide a 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)189 2 533 813 Fax: + 44 (0)189 2 511 803 http://www.agra-food-news.com
International Food Ingredients Miller Freeman BV PO Box 200 3600 AE Maarsse n The Netherlands	Tel: + 31 (0)346 55 9 4 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 9 5 9 9 50 Fax: + 33 (0)1 44 9 5 9 9 79 http://www.marches-tropicaux.com
Market News Service International Trade Centre Palais des Nations PO . Box 10 1211 Geneva 10 Switzerland	Tel: + 41 22 730 0111 Fax: + 41 22 733 4439 http://www.intracen.org
The Ledger 80 Calverley Road Tunbridge Wells Kent TN1 2UN UK	Tel: + 44 (0)189 2 533 813 Fax: + 44 (0)189 2 544 89 5 http://www.public-ledger.com

Standards:

ISO 3493:1999 Vanilla – Vocabulary

ISO 5565-1:1999 Vanilla (Vanilla fragrans (Salisbury) Ames) – Part 1 Specification

ISO 5565-2:1999 Vanilla (Vanilla fragrans (Salisbury) Ames) – Part 2: Test Methods

Web sites:

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

- http://ipm_www.ncsu.edu/cemag/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