

no

BC

BC-24 - 2014

Spices : Vol.1 (619-753)

Editors : V. A. Parthasarathy, A. I. Bhat and Utpala Parthasarathy  
Today & Tomorrow's Printers and Publ. (India)

## VANILLA

R. R. Nair and R. Suseela Bhai

### 1.0 Introduction

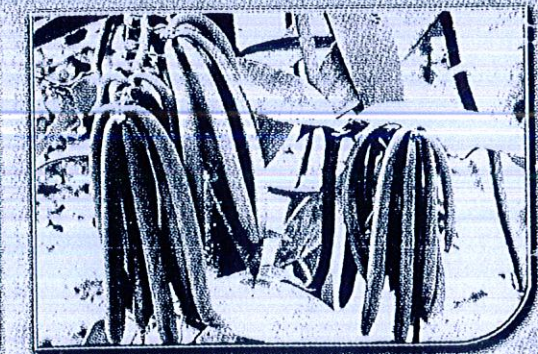
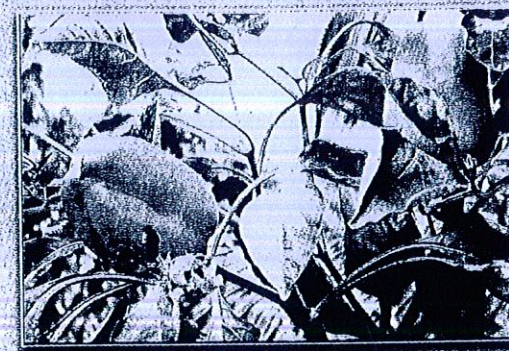
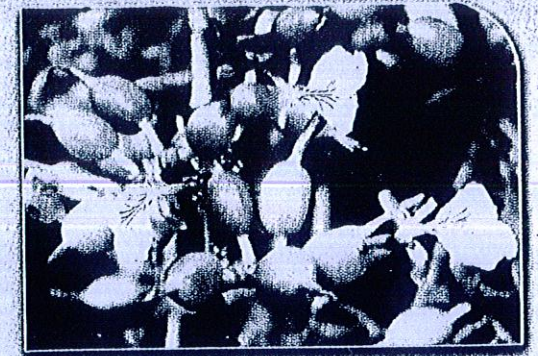
Vanilla, the most important and popular flavoring material and spice of commerce is primarily obtained from the fully grown but unripened fruits (capsules, commonly referred to as beans) of the climbing orchid *Vanilla planifolia* Andrews (syn. *V. fragrans* Salisb.), after fermentation-curing process produce the characteristic aroma. Orchids are best known for their beautiful flowers, which are economically valuable to the horticultural industry. However, *Vanilla* is the only genus of *Orchidaceae* which is useful as a spice and has a real economic value in the food industry and perfumery, owing to its unique flavor and pleasant aroma. Other species of *Vanilla* which are capable of producing vanilla beans are *V. pompona* Shiede. (West Indian vanilla) and *V. tahitensis* J. M. Moore (Tahiti vanilla). But, vanilla produced by these species are considered to be inferior in quality compared to the high quality vanilla produced by *V. planifolia* (Mexican vanilla). There are few other species which have more or less fragrant pods, but none of which ever seem to have valued as spices. The most extensively cultivated species is *V. planifolia*, a native of South-eastern Mexico, British Honduras, Guatemala and Costa Rica (Ridley 1912). This plant has been introduced into all parts of the tropics, and has been cultivated extensively in Malagasy Republic (Madagascar), Reunion and the Comoro Islands (Purseglove *et al.* 1981). At present, the major vanilla growing countries are Madagascar, Indonesia, Mexico, India, China, The Comoros and Réunion. Other countries where vanilla is cultivated to a limited extent are French Polynesia, Tonga, Guadeloupe



# SPICE CROPS

*Major Spices*

Volume - 1



## **Editors**

V.A. Parthasarathy  
A.I. Bhat, Utpala Parthasarathy



TODAY & TOMORROW'S PRINTERS AND PUBLISHERS (INDIA)



- Himejima, M., Hobson, K.R., Otsuka, T., Wood, D.L., Kubo, I., 1992. Antimicrobial terpenes from oleoresins of Ponderosa pine tree *Pinus ponderosa*: a defence mechanism against microbial invasion. *J. Chem. Ecol.* 18, 1809–1818 (AMICBASE).
- Hirasa, K., Takemasa, M. (Eds.), 1998. Antimicrobial and Antioxidant Properties of Spice Oils. *Spice Science and Technology*. Marcel Dekker, New York. pp. 163–200.
- Jelinek, C.F., Pohland, A.E., Wood, G.E., 1989. World wide occurrence of mycotoxins in foods and feeds—an update. *J. Assoc. Off. Anal. Chem.* 72, 223–230.
- Keenan, J.I., Savage, G.P., 1994. Mycotoxins in groundnuts with special reference to aflatoxins. In: Smart, J. (Ed.), *The Groundnut Crop, a Scientific Basis for Improvement*. Chapman and Hall, London, pp. 509–551.
- Kurita, N., Miyaji, M., Kurane, R., Takahara, Y., 1981. Antifungal activity of essential oil components. *Agric. Biol. Chem.* 45, 945–952.
- Mallozzi, M.A.B., Correa, B., Haraguchi, M., Brignani, F.N., 1996. Effect of flavonoids on *Aspergillus flavus* growth and aflatoxin production. *Rev. Microbiol.* 27, 161–167.
- Massod, A., Ranjan, K.S., 1991. The effect of aqueous plant extracts on growth and aflatoxin production by *Aspergillus flavus*. *Lett. Appl. Microbiol.* 13, 32–34.
- Nakatani, N., 1994. Antioxidative and Antimicrobial Constituents of Herbs and Spices, Herbs and Edible Fungi. Elsevier Science, Amsterdam.
- Norton, R.A., 1999. Inhibition of aflatoxin B<sub>1</sub> biosynthesis in *Aspergillus flavus* by anthocyanidins and related flavonoids. *J. Agric. Food Chem* 47 (3), 1230–1235.
- Nwachukwu, E.O., Umechurupa, O.I., 2001. Anti-fungal activities of some leaf extracts on seed-borne fungi of African yam bean seeds, seed germination and seedling emergence. *J. Appl. Sci. Manag.* 5, 24–32.
- Oluma, H.O.A., Garba, I.U., 2004. Screening of *Eucalyptus globules* and *Ocimum gratissimum* against *Phythium aphanidermatum*. *Niger. J. Plant Prot.* 21, 109–114.
- Park, D.L., 1993. Controlling aflatoxin in food and feed. *Food Biotechnol.* 47 (10), 92–96.
- Ramachandraiah, O.S., Azeemoddin, G., Krishnama Charyulu, J., 1998. Turmeric (*Curcuma longa* L.) leaf oil, a new essential oil or perfumery industry. *Indian Perfumer* 42 (3), 124–127.
- Rusal, G., Marth, E.H., 1988. Food additives and plant components control, growth and aflatoxin production by toxigenic *Aspergilli*: review. *Mycopathologia* 101, 13–23.
- Salunkhe, D.K., Adsule, R.N., Padule, D.N., 1987. Occurrence of aflatoxin. In: Salunkhe, D.K., Adsule, R.N., Padule, D.N. (Eds.), *Aflatoxin in Foods and Feeds*. Wiley Interscience Publications, pp. 44–92.
- Schatzki, T.F., 2001. Dependence of aflatoxin in almonds on the type and amount of insect damage. *J. Agri. Food. Chem.* 49, 4513–4519.
- Shelef, L.A., 1984. Antimicrobial effects of spices. *J. Food safety* 6, 29–44.
- Sobolev, V.S., Cole, J.R., Dorner, J.W., 1995. Isolation, purification, and liquid chromatographic determination of stilbene phytoalexins in peanuts. *J. AOAC* 78 (5), 1177–1182.
- Steinhart, C.E., Doyle, M.E., Cochrane, B.A., 1996. In: Steinhart, C.E., Doyle, M.E., Cochrane, B.A. (Eds.), *Food Safety*. Marcel Dekker, New York, pp. 376–394.
- Thanaboripat, D., Nontabenjawan, K., Lessin, K., Teerapiannont, D., Sukchareon, O., Ruangrattanamatee, V., 1997. Inhibitory effects of garlic, clove and carrot on growth of *Aspergillus flavus* and aflatoxin production. *J. For. Res.* 8, 39–42.
- Van Rensburg, S.J., Cook-Mozaffari, P., Schalkwyk, Van., 1985. Hepatocellular carcinoma and dietary aflatoxin in Mozambique and Transkei. *Br. J. Cancer* 51, 713–726.
- Wilson, C.J., Wisniewski, M.E., 1992. Further alternatives to synthetic fungicides for control of postharvest diseases. In: Tjamos, E.T. (Ed.), *Biological Control of Plant Diseases*. Plenum Press, New York.