

WHITE PEPPER



*W*hite pepper is a major value added product obtained by removing the outer skin of ripe pepper berries. White pepper is preferred in most of the European and middle eastern countries for its attractive colour and fermented flavour. Pepper powder is generally added to food at the end of its preparation in these countries and hence white pepper is preferred to black pepper. The flavour and taste of white pepper is similar to that of black pepper except its volatile oil content (which provides aroma) and some of the flavouring compounds like pinene and sabinene which are slightly low in white pepper compared to black pepper.

Processing techniques

Retting

Several methods are available for preparation of white pepper, among which the retting method is the most preferred. Since pepper does not ripen uniformly in a spike, they are harvested and heaped for 1–2 days under shade for ripening. The ripe berries are selectively removed from the spike and collected in gunny bags. The bags containing ripe pepper berries are sealed and immersed in water in tanks, that is replaced every day, or in streams or rivulets. The outer skin of the berries undergoes microbial degradation in 7–8 days, which is then removed by rubbing them against a wire mesh. The skinned pepper is washed thoroughly and sun dried to a moisture level of 8–10%. A retting period of 7–8 days is essential to obtain an attractive colour and adequately fermented product. By adopting this method 240–280 grams of white pepper can be obtained from 1 kg of ripe berries.

Ethylene spray and retting

Mature unripe pepper berries are sprayed with ethrel 2000 ppm after harvest for ripening and then subjected to the retting process for 5 days. As ethylene escapes during the retting process, no residue of the chemical remains in the product.

Boiling

Fully mature, but not ripe, bold pepper berries are boiled for 10 minutes and the outer skin is removed using a fruit pulping machine or by rubbing the berries against a wire mesh. The ensuing product has a buff colour and about 1.0–1.5% volatile oil is lost during the process.

Decortication

The outer skin of ripe pepper berries is removed using a decorticating machine. The product has a grey colour and hence does not possess much consumer and market acceptability.

Retting and boiling

Pepper berries are soaked for 5 days in water and then boiled for 5–10 minutes. The berries are then washed with 2% caustic soda and the outer skin is removed. However, because of the addition of caustic soda and loss of oil during boiling, this product also does not have much marketability.

Varieties ideal for preparation of white pepper

Among the black pepper varieties evaluated based on size, colour and quality, Panniyur-I and Valiakaniakkadan are ideal for preparation of white pepper.

Changes in chemical quality

There is no significant difference in quality of white and black pepper except for a slight reduction of volatile oil in the former due to the removal of skin. White pepper contains 50–55% starch while black pepper has 30–40% starch.

White pepper generally fetches 50% more price than that of black pepper. The cost of production of white pepper is high and becomes economical only in areas where perennial water sources and cheap labour are available.

Text prepared by : T. John Zachariah
Edited by : J. Rema and P. Rajeev
Published by : Y. R. Sarma, Director
Indian Institute of Spices Research, Calicut, Kerala
March 2002

For further information, contact

Agriculture Technology Information Centre
Indian Institute of Spices Research
Calicut - 673 012, Kerala
Ph: 0495-731410 / 730704. Fax: 495-730294
E-mail: iisrclt@md3.vsnl.net.in
Website: www.iisr.org