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Black pepper known as the King of Spices and black gold provides good export revenue for our country. About 95 per cent of pepper in the world market is contributed by India, Indonesia, Malasia, Brazil, Madagaskar and Sri Lanka. Major pepper growing tracts are in Kerala from where the top grades marketed. Due to specific aroma and pungency pepper occupies a major place in Indian cuisine. Countries importing this spice use the raw spice and also its by-products like essential oil and oleoresin. In India these by-products find an important place in various medicines and also food preparations. An attempt is made to bring forth many facets of scientific developments in the processing of pepper.

The important constituents which determine the quality of pepper are essential oil, the aroma principle, piperine the pungent principle and the piperisin containing both aromatic and pungent constituents. Considering the importance of black pepper in Indian economy in general and export trade in particular producers of black pepper should be quality conscious.

Pepper is normally harvested after 10-20% of pepper spikes turned approximately 180-240 days after flowering. Chemical constituents depend on the maturity of pepper at harvest. Depending on the end use of black pepper harvest should be rescheduled.

Green berries are separated after the harvest either by trampling by foot or hand and then sun dried for 4-7 days. During post harvest operations all the external impurities should be prevented. Drying pepper on moist surfaces lead to the mould growth and aflatoxin production. Aflatoxin interference not only produce off notes in pungent and aroma principles but also prevent the produce reaching the international standards of handling. A scientific method of harvesting of green pepper and handling of the pepper at post harvest stages will be fetching both high price and international reputation. The dried berries after despiking should be cleaned and graded on the basis of size. Sun

Processing of Pepper- A Scientific Way

drying on specially constructed elevated platforms or heat drying in air circulated draft ovens will return clean good quality pepper. In larger plantations specially devised draft ovens with temperature and humidity controls is better than drying in the conventional way. The increased production costs should be compensated by the quality pepper price.

In Wynad pepper is dried in a different way. After despiking pepper berries after the initial drying for 1½ days, are kept in a gunny bag for 2 days and later under sun. The high humidity created during intermediate stage gives a shining black colour to pepper.

Another advancement in this way of getting a dark black colour to pepper is by regulated blanching of pepper and drying. Despiked berries are dipped in hot water for 1½ to 2 mts by positioning them in a gunny bag. Certain wax like substances on surface due to the exposure to high temperature and from an oily coating imparting black colour to berries. Eventhough blanching gives a shining black colour if pepper is dipped for a longer duration pepper oil and oleoresin levels drastically go down.

Scientifically dried pepper contains 12 per cent moisture. Dried pepper should always be stored in dry place to prevent any mould attack. Before marketing of dried pepper, it should be graded on the basis of size and weight. Post attacked pepper is graded as 'light pepper or pollu'. This is mainly used to extract pepper oil. The next grade is called 'half pepper'. It is half matured and shrunken giving a dark appearance and can be separated without any difficulty. This is generally used for oleoresin preparation. The small type like mustard is graded as pinhead. The bold type is graded as 'Malabar rbled' which fetches maximum price in the world market. Berries which are bigger than the above are graded as Tellicherry extra bold, 'gaint' etc. The price of black pepper depends invariably on the grade. White pepper is one commodity prepared from fully matured red berries and are the craze need in the West. The despiked berries are kept under

water in gunny bag to remove the outer part of the unmask the white coating. The moisture is removed by first air drying and then by hot air oven drying. This pepper loses its aroma due to depletion of the outer pericarp. Considering the technicality and heavy expenditure white pepper preparation is not very profitable. Green pepper in brine is another marketable commodity for Western European market. Pepper is harvested slightly immature and kept in brine, 1% vinegar and citric acid to retain its green colour.

Dried pepper contains 9-15% oleoresin, 2-4% essential oil and 3-6% piperine. Starch fibre, fixed oil etc. which are also present in black pepper do not contribute much to the black pepper quality.

Processing of pepper in a scientific way and further grading as per the Ag mark or International grading system will fetch premium price and better rationed reception. For preparing white pepper, dehydrated green pepper or pepper brine product should be much more effective.