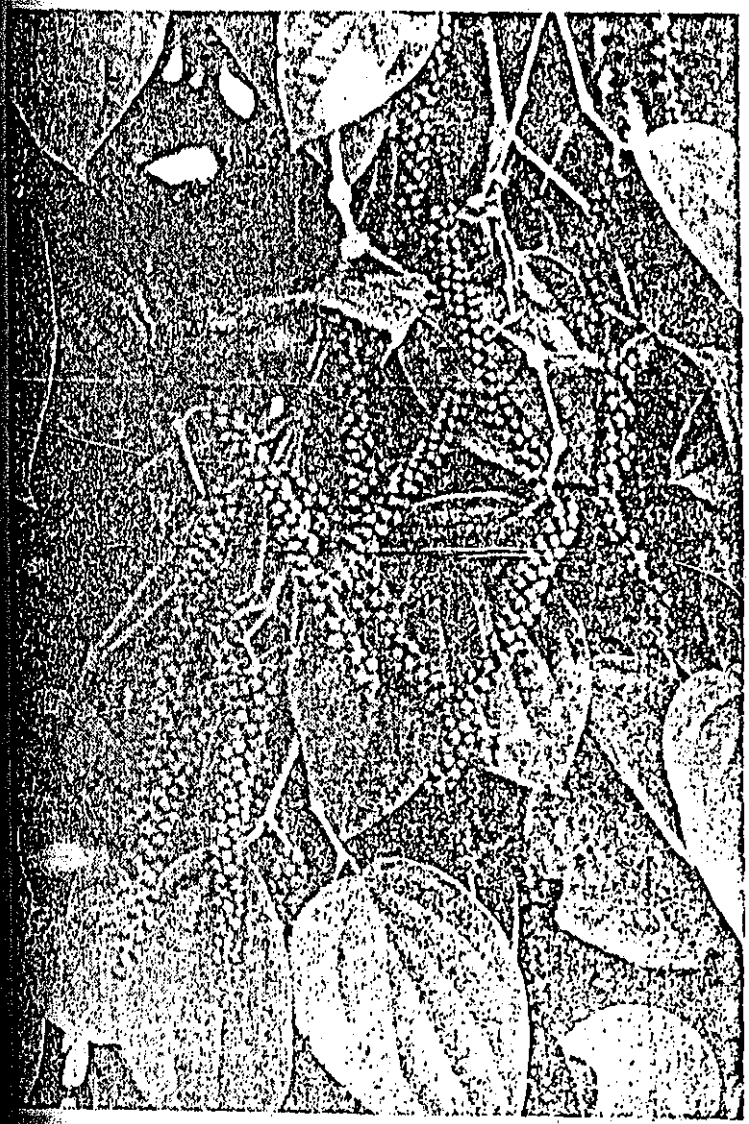

HEMIEAL QUALITY OF ACK AND WHITE PEPPER

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ck pepper is the whole dried whereas white pepper is the rom which the mesocarp has removed The market price produce is always related to hysical and chemical quality same. More than 75 ated types of pepper are available in India. High degree of variation is noted in the yielding ability and quality characters among the different cultivars and hence and attempt was made to evaluate the most popular cultivars for their quality characters.

MATERIALS AND METHODS

Fifteen popular pepper cultivars maintained by the genetic section of the National Research Centre for Spices, Calicut were evaluated for their chemical quality after processing them for black pepper and white pepper. The berry characters of these cultivars are given in Table 1.

White pepper was prepared by boiling the matured green pepper (indexed by the presence of one or two r p'eries) for 15 minutes followed by rolling in running water to remove the outer skin (V. S. Govindarajan, 1977). The brightness of the produce was enhanced by washing with 5 percent hydrogen peroxide solution and dried in sunlight to a moisture level of 12 percent.

For evaluating the chemical quality, piperine (I. S. I. 1984)' oleoresin (A.O.A.C) and essential oil (A.O.A.C) were determined. Oleoresin was extracted by cold acetone percolation of the comminuted sample and removal

Table - 1. Classification of pepper cultivars (*Piper nigrum*) based on berry size.

Large size (>4 25 mm)	Medium size (3.25-4.25 mm)	Small size (<3.25 mm)
Panniyur 1	Karimunda	Kurielmundi
Valiakaniakadan	Arakulamunda	Narayakodi
Vadakkan	Vattamunda	
Kuruvilanchi	Ottapalackal	
	Kuthiravally	
	Thevanmundi	
	Kaniakadan	
	Neelamundi	
	Balankotta	

Table 2. CHEMICAL QUALITY OF WHITE AND BLACK PEPPER IN SOME SELECTED POPULAR CULTIVARS (EXPRESSED AS%DRY WEIGHT)

Constituent / Cultivar		Piperine (%)	Oleoresin (%)	Essential Oil (%)
Panniyur-1	W	3.60	8.6	2.4
	B	3.72	9.1	3.6
Valliakaniakadan	W	3.50	7.7	2.6
	B	3.60	8.2	4.0
Vadakkan	W	3 29	9.1	2.0
	B	3.90	10.6	3.5
Kuruvilanchy	W	3.15	9.7	3.2
	B	3.16	12.4	4.3
Karimunda	W	2.93	7.8	2.5
	B	3.86	9.3	4.2
Arakulamunda	W	3.47	10.0	2.9
	B	3.82	11.11	3.6
Vattamunda	W	5.85	6.8	2.6
	B	5.94	8.8	3.8
Ottapalakkal	W	4.50	7.6	2.3
	B	4.80	10.2	4.6
Kuthiravally	W	3.2	6.3	2.6
	B	5.9	8.9	4.6
Thevanmuddi	W	2.7	6.4	2.2
	B	3.7	8.6	3.1
Kaniakadan	W	4.6	10.3	2.0
	B	6.0	11.6	4.8
Neelamundi	W	2.7	8.3	2.7

of solvent by vacuum distillation. The oleoresin content was determined by gravimetry, Essential oil was determined by hydrodistillation of pre-weighted quantity of powdered pepper using clevenger trap (lighter than water type). Essential oil was computed as volume per weight.

RESULTS AND DISCUSSION

The chemical quality of pepper is indicative of suitability of the specific pepper for industrial product or byproduct utilisation. The results are presented in Table 2. Among the large berry size cultivars, piperine content ranged from 3.15% to 3.60% in white pepper and 3.16% to 3.09% in black pepper. Oleresin in white white pepper ranged from 7.7% to 9.7% and in black pepper the variation was 8.2% to 12.4%. Essential oil content ranged from 2.4% to 3.2% in white pepper and 3.5% to 4.3% in black pepper. The proximity of the chemical composition in white and black pepper in these group of cultivars indicated that removal of skin has not significantly affected the chemical quality. However the depreciation in essential oil is remarkable as some of the essential oil cells are located very close to the mesocarp. Kuruvilanchi contained similar composition in respect of piperine and essential oil content. Proximity of oleoresin

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	B	3.2		

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ttapalackal are more or less imilar. Oleoresin ranged from 6.3% to 10.0% in white pepper and 8.6% to 11.6% in black pepper Essential oil ranged from 2.0% to 2.9% in white pepper and 3.3% to 4.8% in black pepper. In all the cultivars white pepper possessed a lower essential oil. the reason for the effect is cited above. In cvs. Neelamundi and Arakulamunda, the margin in essential oil content is minimum.

Cultivars whose berry size is 3.25 mm ie. Kurielmundi and Narayakodi, white and black pepper contained same piperine content Variation in oleoresin and essential oil contents in CV Kurielmundi is marginal. Essential oil in CV CV Narayakodi is 40% less than that in its black pepper. White pepper with the colour of Karimunda and the size of Panniyur is preferred in International market (Personal communication). Based on the colour and size of the berry, pepper cultivars found suitable for white pepper preparation are Panniyur-1 and Valiakanlakadan from the large berry cultivars Arakulamunda and Balankotta from he medium, sized cultivars. Though the Karimunda white pepper is very appealing, qualitatively it is slightly inferior to the other cultivars

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