

Alcoholic extract of black pepper, dried at 100° C. before extraction.

Calculated from weight lost.....	22.27	per cent.
“ “ dry residue	11.67	“
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Volatile matter in extract.....	10.60	

I have obtained the following duplicate numbers for a sample of genuine black pepper:—

	A.	B.
Extraction from loss of weight	24.01	22.48
“ weight of residue obtained at 100° C.....	12.80	12.30
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Volatile extractive.....	11.21	10.18

Another sample of genuine black pepper gave

By loss	20.50	per cent.
By weight	8.28	“
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Difference.....	12.22	

But in this case different forms of apparatus were used in the processes.

The large quantity of volatile matter extracted by alcohol from pepper, and apparently pretty constant in amount under similar conditions, is unfortunately not distinctly characteristic for pepper. König finds 15.76 per cent. for Cayenne; 9.12 per cent. for long pepper; 11.66 per cent. for pimento.

The process is a somewhat tedious one, and since the interpretation of its indication is uncertain in the present state of our knowledge, I have not carried it out with all the samples examined. The number given in the column headed *Alcoholic Extract* is obtained by evaporating to dryness at 100° C, the alcoholic solution obtained by boiling 20 grammes of the air-dry pepper with about 110 cc. alcohol of 0.815 specific gravity for two hours, in a glass cask fitted with a back-flow condenser. For genuine pepper the table on page 117 shews this to amount to an average of 8.71 per cent. for black and 7.73 per cent. for white. The extremes in the case of black pepper are 9.06—8.28; and in the case of white pepper 8.92 to 7.22.

In order to determine the influence of rice starch and cocanut shell upon the alcoholic extract, samples of these were treated with alcohol as in the case of pepper, and the following numbers obtained:—

Alcoholic extract, rice starch	0.90	per cent.
“ “ cocanut-shell.....	23.15	“

The effect of either of these substances in admixture is therefore to lower the extractive. Since, however, black pepper shews a higher average extractive than white, it appears that the addition of pepper dust in undue amount will proportionately raise the amount of alcoholic extractive.

An examination of the synoptical tables appended will shew that in general the amount of alcohol extractive found is consistent with the above deduction, when the microscopic and other examinations furnish sufficiently definite data for an opinion. Owing, however, to the very complex character of the pepper adulterants usually present, it is difficult to interpret the meaning of the number found for alcoholic extract with as great definiteness as could be wished.