

declared, but a statement of the amount of each ingredient as well, in order that the public be properly informed as to the article supplied.

If we accept as normal such samples as contain not less than 14 per cent of volatile oil, 78 samples of this collection will be classed as normal. Among these, however, there are great differences in quality as may be seen below:—

14 to 15 p.c. volatile oil in..	27 samples.
16 to 17 " "	19 "
18 to 19 " "	22 "
20 or more p.c. "	10 "

It would therefore appear reasonable to require a minimum of at least 14 per cent volatile oil for ground cloves. Many samples herein marked 'normal' exhibit large admixture of pimento starch; and since pimento contains from 3 to 6 per cent of Eugenol, it might be possible for a mixture of cloves having 20 per cent oil with pimento having 5 per cent oil, to contain 40 per cent of pimento and still yield 14 per cent of Essential Oil on analysis.

The following scheme of standards for Ground Cloves is suggested as consistent with the knowledge we possess of the commercial article:—

1. *Cloves*.—The flower-buds of *Caryophyllus Aromaticus*, L., containing not more than (5) per cent of Clove stems; dried but not otherwise treated.

2. *Ground Cloves*.—Cloves, reduced to powder by grinding, without addition of other matters; and possessing the following characters:—

	Per cent.
(a) Total ash, not exceeding..	8
(b) Sand, not exceeding..	0.5
(c) Moisture, not exceeding..	10
(d) Volatile Oil, not less than..	14
(e) Tannic Acid, not less than..	12
(f) Crude fibre, not more than..	10

3. *Ground Cloves, compound or mixture*.—Cloves reduced to powder by grinding, in admixture with not more than 50 per cent of a harmless substance or substances of a stated nature.

The work now recorded will form the basis of recommendations for standardization of this article with as little delay as possible.

I beg to recommend publication of this as Bulletin No. 252.

I have the honour to be, Sir,

Your Obedient Servant,

A. MCGILL,

Chief Analyst.