

always preclude the seed being used, but the presence of dangerous weed-seeds should always condemn a sample, no matter whether the germination is satisfactory or not. A low germination can often be remedied by increasing the amount of seed that is sown, but there is no method of profitably employing a sample that contains dangerous and aggressive weeds. It is thus seen that the ascertaining of germination, although very important, is not the essential feature that determines the fitness of a sample for sowing. The germination, however, does decide the amount of any sample fit for sowing that it is necessary to use in order to secure a satisfactory crop.

The determining of the relative value and the price is in all cases based on the combined considerations of fitness for sowing and germination, or, in other words, on the comparative purity and germination of different samples.

THE COMPOSITION OF A SAMPLE.

Agricultural seeds that are offered for sale are, with the exception of those that are large and quite uniform in size, rarely if ever absolutely pure; and, in general, the composition of a sample may thus comprise,—

- (1.) Fully developed seed of the kind of which the sample is said to consist and capable of growing (living seed).
- (2.) Fully developed seed of the kind of which the sample is said to consist and incapable of germination (dead seed).
- (3.) Immature seed and empty husks of the kind being sold. Some of the immature seed may be capable of germination, but, presumably, they would produce weak inferior plants (chaffy seeds).
- (4.) Seeds of plants other than that which the sample is sold for and having some agricultural value (non-injurious foreign seeds).
- (5.) Seeds of plants other than that of which the sample is said to consist and having no agricultural value (weed-seeds).
- (6.) Fungus-spores, resting bodies, sclerotia, &c.
- (7.) Insects, either living (such as mites and weevils) or dead (such as the dried bodies of numerous types).
- (8.) Organic materials, such as pieces of leaves, stems, glumes, &c. (organic inert matter).
- (9.) Inorganic materials, such as rock and soil particles (inorganic inert matter).

THE INTERPRETATION OF THE TERM "PURITY."

In the analysing of agricultural seeds it is customary to divide the sample into two groups—pure seed and impurities. The purity is obtained by subtracting the percentage of impurities from 100. Thus, a sample having 10 per cent. of impurities is said to be of