

show that they contain a variety of nitrogenous compounds which render them valuable as manure. By seven ton of potato tops we can add to the soil, about 23 lbs. of ammonia, which may be compared with 2 1-2 cwt. of the best guano, (1) the only difference being that we have the potato tops as part of the crop, and should have to purchase the guano.

In diseased potatoes, the albumen and gluten disappear in a great measure, but we will treat on the disease of the potato in our next.

Note by the Editor.—Sir John Lawes showed long ago that starch is "a main principle of nutrition." (2) The potato is, in our opinion, the only root that pays for cooking for stock.

## The Dairy.

### LLOYD ON CHEDDAR-CHEESE.

#### The composition of milk.

The composition of the milk with which the cheese-maker has to deal affects, as will have been seen in this report, the proportion of rennet to be used, the acidity which may be obtained in the whey before drawing off, and the acidity which should be present in the curd when this is taken to the cheese-room.

Its influence on the proportion of rennet, and on the acidity of the whey when drawn, was most marked at Haselbury in 1895, as may be seen by consulting the results for that year. The high percentage of fat in the milk, coupled with the comparatively low percentage of casein, necessitated a more careful handling of the curd than usual. Consequently, it was found necessary to draw off the whey, and take the curd from the tub from 22 to 36 minutes sooner than had been customary in former years. Hence the acidity of the

whey when drawn was always less than the acidity of the mixed milk.

The influence of the composition of the milk on the acidity of the liquid from press is shown in the following table, which gives the average amount of fat in the milk, and the average amount of acid found in the liquid from press, for the three years 1893-4-5, and for three months of 1891 :—

COMPARISON OF ACIDITIES and FAT during the Year 189 and 1893-5.

| Month.      | Year. | Locality.       | Average Percentage of Fat in Milk. | Average Acidity of liquid from Press. |
|-------------|-------|-----------------|------------------------------------|---------------------------------------|
| April.....  | 1893  | Butleigh.....   | 3.09                               | 1.08                                  |
|             | 1894  | Mark.....       | 3.29                               | 1.05                                  |
|             | 1895  | Haselbury....   | 3.70                               | 1.11                                  |
| May.....    | 1893  | Butleigh.....   | 3.05                               | 1.02                                  |
|             | 1894  | Mark.....       | 3.35                               | 1.08                                  |
|             | 1895  | Haselbury....   | 3.39                               | 1.12                                  |
| June.....   | 1893  | Butleigh*.....  | 3.08                               | 1.01                                  |
|             | 1894  | Mark.....       | 3.40                               | .99                                   |
|             | 1895  | Haselbury †.... | 3.51                               | 1.09                                  |
| July.....   | 1893  | Butleigh*.....  | 3.20                               | .89                                   |
|             | 1894  | Mark.....       | 3.47                               | 1.02                                  |
|             | 1895  | Haselbury*...   | 3.60                               | 1.12                                  |
| August..... | 1893  | Butleigh*.....  | 3.19                               | .90                                   |
|             | 1894  | Mark.....       | 3.70                               | 1.04                                  |
|             | 1895  | Haselbury†...   | 3.80                               | 1.09                                  |
|             | 1891  | Vallis.....     | 3.87                               | 1.07                                  |
| September.. | 1893  | Butleigh*.....  | 3.53                               | .94                                   |
|             | 1894  | Mark.....       | 3.93                               | 1.02                                  |
|             | 1895  | Haselbury †. .  | 3.94                               | .98                                   |
|             | 1891  | Vallis.....     | 4.13                               | 1.11                                  |
| October.... | 1893  | Butleigh*.....  | 4.30                               | .95                                   |
|             | 1894  | Mark.....       | 4.39                               | 1.04                                  |
|             | 1895  | Haselbury †...  | 4.55                               | 1.08                                  |
|             | 1891  | Vallis.....     | 4.75                               | 1.22                                  |

\* For first week in month only.

† For first and third weeks in month.

‡ For first week only; during third week there was a taint in the milk which prevented proper acidity being developed.

It is perfectly evident from the preceding facts that the greater the knowledge which a cheese maker can obtain as to the composition of the milk with which he has to deal, the better.

Unfortunately, such knowledge is not easily obtained. The most simple guide to the richness of the milk is the weight of

(1) The guano of 1850 contained 17 % of ammonia. Ed.

(2) More on this point in our next. Ed.