

## WEEDS.

The present season is conspicuously distinguished by its wet weather and weeds. The relation of weeds to wet weather is well indicated by the results of Sir J. B. Lawes' observations on weeds and nitrates, briefly detailed in the *Agricultural Gazette*, last year:—

In common with many other farmers, I have found it exceedingly difficult to keep my mangels—under crop I have at present on the farm about 30 acres—free from weeds.

I have, however, about 8 acres of mangels under experiment, on land which has grown nothing but roots for more than forty years, and here, in consequence of the careful attention which it is absolutely necessary to employ in carrying out an experiment, the mangels are almost entirely free from weeds.

The farm mangels have been heavily dunged, and when the plant was fairly established about 1½ cwt. of nitrate of soda was applied as a top-dressing.

In walking over the two fields I have been very much struck by the more rapid progress of the experimental roots, as compared with those grown in the ordinary cultivation of the farm, and the fact has led me to consider how far the growth of the latter has been retarded by the presence of the weeds.

Assuming that the soil contains a sufficient supply of alkalies and phosphates, it may be said that the weight of the crop would depend upon the amount of nitric acid which the mangels could take up from the soil.

The nitric acid may be derived from various sources—(1) from the stock of organic nitrogen in the soil; (2) from previous applications of manure; (3) from the manure applied in the present season; (4) from the nitrate applied as a top dressing.

Now as weeds take up large amounts of nitric acid, their roots and finer fibres when destroyed under ground, may nitrify and serve as food for the mangels grown this year. But the bulk of the weeds which are destroyed by hand, or by horse-hoeing remain on the surface and do not nitrify until they are ploughed under the soil.

This conversion of nitric acid into organic nitrogen in the form of weeds, instead of crop,—although in some cases unavoidable—becomes a source of considerable loss, and in my own case I have very little doubt that on some parts of the field, the weeds have taken up as much nitric acid as was contained in the nitrate of soda applied as a top dressing, and that the crop of mangels will be so much the lighter for the loss.

The rapid appropriation of nitric acid this year by weeds is very apparent in

our wheat fields where the plant is thin. When the crop is in bloom, it usually takes but little nitric acid from the soil; but if at this time the surface soil is moist, nitrification takes place rapidly, and a field which was comparatively clean when the wheat was in bloom, may have become one mass of luxuriant weeds when the crop is cut.

## BUTTER TEST OF NAIAD OF ST. LAMBERT, H. R. 12965.

John I. Holly, Esq., President A. J. C. C.

Dear Sir:—The undersigned at your request, as a committee for the American Jersey Cattle Club, visited "Oaklands" the farm of Valancey E. Fuller, Esq., at Hamilton, Ont., for the purpose of inspecting the test for butter of the cow Naiad of St. Lambert.

The results of the milkings and churnings, with the times at which they were done, the character of the weather, its temperature at noon, the temperature of the cow, and the special witnesses, are presented in tabular form.

The test was conducted by the manager of the farm and herd, Mr. William T. Norton, who had the entire management of the test, under the guidance of the proprietor, who was personally present every day at least one milking, as well as at the drawing-off of the cream, and at the first churning.

The test commenced at 6 p. m. on Thursday, the 5th of June at which time the cow was milked as usual, and proved to be stripped dry by Mr. Weld at exactly 6 o'clock and 10 minutes. After that she was milked at 6 o'clock, morning and evening, for seven days, the last strippings being taken at 10 minutes past 6 p. m., on Thursday, June 12th.

The milk was weighed, as soon as drawn, on a spring balance, hanging in the stable, and used for weighing the milk of other cows. This balance was tested and found reasonably accurate. The milk was taken at once to the dairy, where it was strained into one of the cans of a four-can Cooley Creamer in ice water. The creamer was locked and sealed at once, being banded with tape after locking, and was perfectly secure.

The cream was removed once a day, at evening, after the second day, the milk having been set twenty-four and thirty-six hours. It was placed in another creamer containing two cans, and kept at the ordinary temperature of the atmosphere. This creamer was also securely locked, banded with tape, and sealed.

The milk, before setting, when the locks were off, as well as during skimming and churning the milk, cream and butter, and all the operations, were con-

stantly under the inspection of one or the other, and usually of both of us.

New locks were purchased, and a seal used bearing the initials of the Club.

The butter from the first churning, when removed from the churn, was very firm and cold, and, though it appeared to be well worked and dry, really contained too much water and buttermilk, as shown by the slight gain from salting and re-working.

The butter from the second churning was not so cold, gained more weight in salting, and is of better quality. We submit samples of both.

The salt added was an ounce to the pound.

The table-scales used for weighing the butter was tested by a pound weight, purchased as a standard, and having the Canadian official seal in lead upon it.

Naiad was fed by Mr. Morton at his discretion. She was kept with the herd both in the stable and at pasture, but brought in to be fed.

The pasture was, part of the day, a field of heavy red clover, with timothy and other grasses, the clover just coming into bloom at the end of the test, and part of each day and at night the cows were turned into a large lot which had been several years in grass, and from which the clover had nearly disappeared or was no longer conspicuous, but in which a variety of grasses, with the white clover, afforded abundant feed for twice as many cows.

During the last three days of the test we arranged to have a quantity of each kind of meal weighed, and from these weighed quantities Mr. Morton used as much as he pleased, the bags being weighed at evening. This gave us accurately the amount of grainfeed consumed daily during this part of the test, when the cow was, no doubt, fed more than before. The various quantities of each kind of feed given daily for the fifth, sixth and seventh days of the test are submitted in tabular form herewith.

The weather for the first three days was fair, but hot and sultry, while that of the rest of the week was rainy, foggy, and cold for the season. The change seemed favorable to the production of milk, but the butter product seems not to have been affected either by the increase of feed or by the change in the weather.

The last day there were intimations that Naiad was coming in heat, and on the following day, at the morning milking, her milk fell off to about ten pounds.

(Signed) M. C. WELD,  
HENRY E. ALVORD.

New York, June 19, 1884.

Naiad of St. Lambert 12965, solid gray, shading to fawn, bred by Romeo H. Stephens, is a finely formed cow,