

THE GLEANER:

AND NORTHUMBERLAND, KENT, GLOUCESTER AND RESTIGOUCHE
COMMERCIAL AND AGRICULTURAL JOURNAL.

OLD SERIES] *Nec aratorum sane textus ideo melior, quia ex se fila gignunt, nec noster vilior quia ex alienis libamus ut apes.* [COMPRISED 13 VOLUMES.

NEW SERIES, VOL. VI.]

MIRAMICHI, TUESDAY EVENING, JULY 31, 1846.

[NUMBER 43.

Agricultural Journal.

From the London Farmers' Magazine for June.

SUGGESTIONS FOR EXPERIMENTS IN THE CULTIVATION OF TURNIPS.

We not unfrequently hear of the leaves of mangold wurzel and turnips being pulled as food for cattle, and some cultivators have contended that the growth of the plants was not apparently checked by this practice. But from what is generally understood to be the functions and use of leaves, it might reasonably be concluded that a plant like the turnip, whose most valuable product is the root, could not be deprived of mature and efficient leaves during the active season of the growth, without retarding its progress, and thereby rendering the crop less profitable.

Many, it is to be feared, will be led to doubt the accuracy of this conclusion who have read the history of the swedes exhibited at a recent meeting of the Rhine Farmers' Club. They had not been deprived of a few outside leaves merely, but had been cut over three times, yet the roots attained a considerable size; they were indeed said to have increased in a much greater ratio than other uncut swedes grown in the same field, but later sown.

A result so unusual, and in this case unlooked for, has naturally excited considerable attention, and as many may be induced to repeat the experiment; but, as the secretary very judiciously remarked, the comparative success obtained might depend upon a variety of circumstances which it would be well to investigate before the experiment is repeated on an extensive scale.

A favourable opportunity seems now to be afforded, and which has long been wanted, of instituting a searching inquiry with a view to ascertain the precise effects of pulling or mowing the leaves of turnips. The members of the Rhine Farmers' Club manifest a laudable desire to obtain information on the subject, and possibly it may not be taken amiss to suggest how desirable it is that several of them should try a small comparative experiment next year, in order fairly to test the merits of this new system of turnip culture.

Several similar experiments, made on different farms, in the same season, and carefully attended to throughout, must, if the result should prove the same in all cases, be far more satisfactory and conclusive to most minds, than an experiment, however well-managed, it made by one individual, on one farm only.

These gentlemen have proposed to themselves two main questions for solution:—

1. Can the turnip be profitably grown as a substitute for rape, &c.?

2. Will the roots of plants, frequently deprived of leaves, keep as well and prove as nutritious, as roots grown in the usual way?

The following experiments seem to me best calculated to afford satisfactory answers to these questions, and they may possibly indicate that there is some general rule or principle, by which any man may hereafter know in what respect, or under what conditions, it would be produced or otherwise to deviate from the mode of culture usually practiced.

Doubts are expressed as to what cause the comparative success of Mr. Johnston's experiment was owing; whether to early sowing, to transplanting, or to covering over the plants soon after flowering. To determine these points two sowings at least are required, say one in the first week of April, the other in the first week of May.

I propose that the experiment should consist of fifteen drills, in the centre of a field of Swedish turnips. With a view to guard as much as possible against the influence of disturbing causes, the following precautions should be attended to:—

1. The land required should be manur-

ed with the same kind and quantity of manure, otherwise the difference in the results obtained might be owing to the action of the manure, and not to the difference in the modes of culture, which we desire to investigate.

2. The seed must be from the same sample, because the seeds of different samples vary in quality and purity.

3. The drills must be at the same distance apart, and the plants at the same distance from each other in the drills, in order that they may have the same extent of pasture for their roots, and equal share of light for their leaves, which are points of considerable importance.

4. Let all the drills be thinned by one man, and as nearly as possible in the same way.

5. Keep the plants free from weeds throughout.

6. They should be equally free from the shade of trees, because the amount of sap which a plant can elaborate and store in its tissue is, all other circumstances being similar, in direct proportion to the breadth of foliage it can expose to the light; hence trees impede the growth of turnips and other plants, in their immediate neighbourhood, by intercepting the rays of light.

In the first week of April sow the three drills marked No. 1 in the summary; and at the same time sow a similar quantity of seed in a nursery bed, to raise plants for the purpose of transplanting in the last week of May, to the drills marked No. 2. Take the plants direct from the seed-bed to the drills, so that they may be as short a time as possible out of the ground. The object of these two experiments is partly to ascertain the effect of transplanting on produce and whether premature flowering is chiefly the result of transplanting.

It may be well, however to remark, that the evidence obtained on these points in one season only cannot be implicitly relied upon; because much will depend on the nature of the weather. If warm showery weather should be experienced soon after transplanting, the plant may succeed well, the reverse might be the case if the weather should prove bright and dry.

Premature flowering is also induced by various causes. It may be the result of the plant remaining too long crowded in the seed-bed, or of hot sunny weather soon after planting, or of too early sowing. The last is a well known cause of the premature blossoming turneps, but in this case it is usual for them to flower towards autumn rather than in early summer.

To determine whether the turnips can be profitably grown as a substitute for rape.

—The leaves of the plants No. 1 and No. 2 are to be cut over three times, and it is desirable that each should be cut at the same time. If the plants of both attempt to blossom, cut the flower-stems of two drills of each about an inch and a half above the crown of the root, cut the leaves of the remaining drill nearly close down.

Amongst the turnips grown by Mr. Johnston some were cut down closer than others. When the stems were cut an inch or more high, lateral shoots were produced from the part of the stem left, but when they had been cut near the crown, lateral buds, situated in the neck of the root, a little beyond the base of the stem, were observed to vegetate, and additional bundles of fibrous roots, seemingly in connection with these buds were developed outside the original taproot. The soil would thus seemingly be more widely searched, and as some of the finest roots or bulbs, as they are commonly called, were those of plants so treated, it was thought that the mode of cutting down the stems might exercise some influence on the amount of produce. These experiments will prove the accuracy, or otherwise, of this conjecture.

In the first week of May sow the drills No. 3, 4, and five. No leaves are to be removed from the plant marked No. 3: they are required as a standard of com-

parison. Cut off all the leaves of No. 4 in the last week of July; and at the same time, pull off the large outside leaves of the plants of No. 5, leaving the young leaves in the centre untouched.

The experiments Nos. 4 and 5 may show that a distinction should be made in the treatment of crops which are blossoming, and of those which do not show any disposition to flower. There can be little doubt that the growth of the root would be promoted by depriving turnips of their flowers; and the roots may even grow to a larger size when deprived of leaves and flowers two or three times, than if allowed to perfect their seeds at the first attempt. It may nevertheless, be equally true, that plants which show no symptoms of blossoming cannot be divested of the whole, or even a part of their foliage, without the cultivation incurring a certain loss. The eye must not be depended upon to estimate the relative value of the produce of these experiments. All the leaves should be carefully weighed, and a portion thoroughly dried and weighed again. Keep notes of the dates when the leaves are cut, and of the weight produced by each of the three drills. It is requisite that the produce of the drill cut close in the experiment No. 1 and No. 2, should be weighed separately. The leaves should be cut from all the plants, and weighed when the roots are taken up. The roots must be weighed also.

As there may be some difference in the solidity and keeping properties of the roots of No. 1, and No. 2, it is desirable, in order that a just estimate may be formed of the relative value of these modes of culture, that two roots of each should be analyzed, and the specific gravity ascertained. If the quantity grown is sufficient, it would be well to further test the economical value of the roots of No. 1 and No. 3 by putting up two oxen; one to be fed on No. 1, the other on No. 3: notes to be taken of the weight of the animals at the beginning and end of the experiment, and of the weight of turnips consumed.

A quantity of these roots should also be pitted till spring, to ascertain their keeping properties.

When the experiments are finished, it will of course be an easy matter to calculate the aggregate value of the produce of leaves and roots per acre, afforded by each section; and whether after deducting the expense of cutting and carting the leaves, any mode of culture tried is likely to be more beneficial than that of No. 3 usually practiced; and if no other is so profitable, then what would be the probable loss per acre to the farmer if he were to practice any of the other methods as compared with No. 3.

With a view to illustrate or better explain the results obtained by the field experiments, I would recommend that twelve or twenty-four plants raised in the seed-bed, should be divided into four equal lots, and planted in open space in the garden. One-fourth to be allowed to grow naturally—that is, no flowers are to be taken from them for the purpose of showing the effect of seed bearing; and that transplanting alone, as was suggested, will not cause turnips which blossom to attain a large size. The second portion are to be cut over once when they show flower. Lateral flowering stems will soon after be produced. Let the plants now perfect their seeds, to ascertain by a comparison with the plants of No. 6 what is the effect of postponing the production of seed on the growth of the roots, and if the growth of the roots is not checked as soon as the plant directs its energies to the formation of its seeds. When the plants of the third division throw up their flowering stems, strip off all the leaves. Do not afterwards suffer any other leaves to grow. It will then be seen that without leaves roots make no further progress. If the flower buds are nipped off the fourth portion as soon as perceived throughout the season, and if they are allowed to retain the whole of their foliage, the roots will probably continue to grow steadily and attain a com-

paratively large size; thereby showing that the beneficial effect of mowing the leaves of flowering turnips is chiefly the result of preventing the formation of seeds.

If it should prove that the turnip cannot be advantageously grown as a substitute for rape, it may be a question whether, when turnips are running prematurely to seed, it will not be more profitable to employ children to remove the flowers, than to mow the leaves as well as flowers. A comparison of the last mentioned plants, with those of No. 1 and No. 2 of the field experiments, may indicate which of the two practices is likely to be most beneficial.

If, again, there is a probability of the turnip being grown partly for the sake of its leaves, as cattle food, it is a question whether it would not be more profitable to sow immediately after harvest than in April, and to sow in rows much closer than usual; the roots of every other row to be taken up as wanted after the first mowing of the leaves in spring.

Much useful information, it may be hoped, then, will be obtained from these experiments, if fairly tried. If they should do no more than prove the superiority of the mode of culture usually practiced by the best farmers, they will not be made in vain, as they would save many from trying on an extensive scale a method less profitable, but which, before being submitted to the test of exact comparative experiment, seemed to offer greater advantages. They may dissuade others from persisting in practices which must tend to diminish the aggregate value of their crops. They may establish the importance of destroying the premature blossoms of turnips, by showing that crops in this condition which have hitherto been considered as almost lost, may, by this simple means, be turned to a comparatively profitable account; and they may possibly afford to most men a clearer perception of some of the more important laws of vegetable life, which can hardly be otherwise than beneficial to the cultivation of plants.

The experiments I have ventured to suggest will not cost much. They have been framed also with a view to obtain the greatest amount of information at the least expense—a point which should ever be kept in view by those who desire to further the progress of agricultural improvement.

From the Albany Cultivator ASHES AND PLASTER FOR MANURE.

J. Johnston, of Geneva, says that on his soil, which is gravelly clay, one bushel of plaster will do more good to his clover than 40 bushels of ashes—and that on ruck soils he never perceived any benefit from plaster, though ashes may be useful. All the experiments we have tried on sandy and gravelly loam, shows the superiority of plaster to ashes, applied to grass lands. J. Johnston also says, that he has found the best way of applying stable manure in autumn, is to spread it over the surface, and plow it in the next spring. This entirely accords with our own experience whatever hypothetical reasoning may say to the contrary. It is perfectly evident, however that little evaporation can take place during winter, while much that is soluble may become diffused through the soil.

RICH-ARTIFICIAL MANURE.

Samuel Davidson, of Greece, N. Y., obtained one hundred and twenty-two bushels of corn per acre on land to which three bushels of the following manure was applied:—One barrel of human urine, to which was added six pounds of dissolved sulphate of magnesia (epsom salts,) was mixed with enough gypsum to moisten the whole. On another acre which had three bushels of dry plaster, there were ninety bushels. What part of the difference in the crops of these two acres, the mixture produced, would be interesting to know.