

We planted our potatoes in swarth or grass land which had been top-dressed last spring, and we have scarcely any rot in the crop, but they are not yet taken up. Though we have heard many reports of the great injury done to wheat by sprouting while harvesting, we trust it is not so bad as it is represented. We cut and harvested our wheat in September, without any injury to the crop, in the average weather of the month, and we know other farmers that have been able to do the same.

Cote St. Paul, October 2, 1845.

ON THE PREVENTION OF CURL AND DRY-ROT IN POTATOES.

It would be doing injustice to the theory before stated, if it were sent forth to the public without a brief notice of some of the objections which at once occur to those conversant with the subject. The first I shall allude to is that the management of seed potatoes during the winter, the mode of planting, and more especially the nature of the season after planting, exercises a decided influence in modifying or increasing the potato failure; which, at first sight, seems hardly reconcilable with the supposition that such failure is dependent on the degree of maturity of the seed potatoes when harvested. I at once admit that if seed potatoes are kept in too large a heap and allowed to ferment, or if kept so warm as to induce excessive growth during winter, or in any other way are so treated as to weaken their vitality, the sets will, many of them, fail, and others make weak and unhealthy shoots, very much resembling, and possibly identical with curl. It must be borne in mind, however, that though I consider overripening of the seed to be the ordinary cause of the curl, I by no means assert that it is the only one. I am well aware that deficient management will especially, if followed by long drought, produce failing crops, and whether such failure is due to curl or not I can offer no opinion; but the great puzzle to potato growers has been that with the most careful management, failures continually occur, and these failures may, I think, be traced to ripe sets. That the influence of season is great I should be the last man to deny, as in two instances my potato crop was affected with curl, (distinctly traceable to having used ripe sets,) they continued to get worse so long as the drought lasted, but on the occurrence of heavy rains they improved very much; and this is quite in keeping with my theory, as when once the plant has a stem and leaves whereby to elaborate nourishment from the atmosphere, and roots which purvey from below, a large supply of moisture will give it such an abundant flow of sap that the vitiated juices of the decaying set will both be very much diluted and the plant will derive sufficient vigour from external sources to outgrow a slight ailment; whereas in a droughty season, the plant is much more dependent on the set, and this at such a time furnishes the poison in a concentrated form.

The next objection I shall notice is, that one of the best ways of getting rid of curl hitherto known, is to grow the potatoes intended for seed on a piece of old meadow or other land that has been long uncropped. This is easy of explanation. Fresh land contains a supply of food which has been accumulating for years, and accordingly produces a more luxuriant growth and later maturity.—Every one must have remarked that in a dry season plants of all kinds are less fully developed, but ripen earlier.—This is doubtless owing to the liberal supply of nourishment which they receive; for even where the land is abundantly manured, plants cannot avail themselves of it without moisture. When a plant has attained a certain stage of growth, even though considerably below its ordinary development, should its supply of food be stunted,

either in consequence of drought, or of a scarcity of the necessary elements in the soil, it will at once proceed to form and mature its seed. This is readily observable in the case of weeds. The same species of grass which is common in our meadows will be found frequently growing by a roadside, or even on a gravel walk, and in dry weather will flower and bear seed, though so stunted and dwarfish as scarcely to be recognizable. This will occur considerably earlier in the season than the time of ripening of the same species of grass in an ordinary meadow, and again the meadow-grown plant will ripen far before another of the same species grown by a ditch side or in other moist rich soil, and this last will as much exceed the meadow plant in size and luxuriance as the one in the meadow did the one in the gravel walk. The *Poa annua* is a species of grass which may frequently be found in all of the three situations above named. That potatoes are not exempt from this law of nature I have had abundant proof. On the occasion previously mentioned, where I planted potatoes on a piece of rich old turf, soaked for years with the drainage of a farm-yard, they never did ripen, but grew on through the whole autumn, and were as green and vigorous in November as they had been in July. At last a heavy fall of snow came with a severe frost, and in forty-eight hours they were as black as if they had been burnt, but the tubers were still unripe, and were the very worst on the table, and made the best sets that I have ever possessed. In 1844 I had also a strong instance. In reclaiming an old lane some parts had to be lowered and some hollows to be filled up, and both being planted with potatoes at the same time, those planted where the old hollows had been, and which now had a considerable depth of fresh soil, grew considerably taller and ripened some weeks later than those on the ridges whence the soil had been taken; though even in these places considerable pains were taken to retain as much of the surface soil as possible; and as the ridges and depressions ran parallel to each other for forty or fifty yards together, the marked difference in the time of ripening caught the eye at once. I have also frequently observed that potatoes planted near hedgerow trees (especially ash) ripen earlier than the rest of the field. It thus appears, as well by the analogy of other plants as by direct observations of the potato itself, that a deficiency of nutriment produces early maturity, and vice versa. Fresh soil, it will at once be admitted, contains an extra supply of food; potatoes therefore grown on such soil will be in a growing state when those on old-going land will be quite ripe, and, if harvested together, the former will be unripe and make good sets. It is very probable, however, the more abundant supply of all the elements of nutrition to be found in fresh soil may have a considerable effect, and concur with the under-ripening of the seed in producing a healthy and vigorous plant.

An objection which has already proved fatal to several theories that have been brought forward to account for the potato failure, may be briefly stated as follows:—“We planted, we manured, we harvested our potatoes fifty years ago much as we do now, except that the whole was then done in a more careless, hap-hazard way; yet we were then never troubled with the complaint which is now our bane. How can this be accounted for except by the deterioration of the plant itself?” The causes which produce failure now, and which did not exist formerly, may, I think, be referred—1st, to change of climate; 2d, change of soil; 3rd, change of practice.—1st, Change of climate. The great increase of draining, enclosing, and planting for shelter, has produced a very sensible change of climate in exposed situations, which are the places most in vogue for the supply of seed potatoes. In the case of Sawdon, before mentioned, enclosure, &c., was at any rate contemporaneous with the deterioration of their seed potatoes, and the marshland districts, which were formerly supplied from Sawdon, now get their seed from Scotland. It is indisputable that both cold and wet retard the maturity of all plants; the improved practice of the present day has removed the one and very much reduced the other, and accordingly our potatoes become more thoroughly ripened and make worse sets. To those who are inclined