

turn it over a few times, that all may be made damp—let it remain so a short time; then mix lime enough with it to dry it,—after which it is ready for being sown. The reason for washing the seed wheat is to destroy the sporules of smut which adhere to the grains of wheat, and as each sporule is capable of producing its kind by coming in contact with the seed we sow, unless washed off or destroyed by some chemical agency, the crop is infested by those dark dwarfish ears, which not only mar the beauty of the growing grain, but leave its poisonous influence to lessen the value when taken to market.

In the year 1854, we sowed a field of 20 acres, with wheat prepared according to the above, except a ridge on one side of the field.

At harvest there was not a head of smut to be found in the field, except in the ridge which was sown unprepared; but in this there was 7 per cent of smut. In the preparation of seed, I know of no preventative to rust, and according to the nature of the disease, I think there can be no remedy applied at the time of sowing. Rust is a parasitic plant, that is, one which lives on, and grows from, other plants. Rust, when viewed under the microscope, presents an appearance as perfect in its form, as any other plant of the same genera.

Although it is out of order, I hope you will pardon me for making a remark or two on rust and its preventative, which I hope may be adopted by all who have it in their power. The cause of rust is a superabundance of humidity in the land, and the presence of too much ammonia. Although ammonia is the most active agent in manure, and one which produces a luxuriant vegetation, yet for a wheat crop it has a tendency of producing too much straw, and, therefore, should be sparingly used on black looking soils.

Underdraining, then, is the only reliable remedy I know of for rust, because it removes the cause of the disease, and must consequently remove the effect. In the cultivation of oats and peas, due regard should be paid to cleanliness from what might produce its species, and the remarks I made at the commencement about *matured* seed, and best quality, are equally true respecting oats and peas.

If we sow *good* seed we may reasonably expect *good* in return; but, if bad, the result *must* be different. Wheat, oats and peas, are exotic plants, and require an extra effort to prevent their degeneracy. *Care* and *judicious selection* have brought them to their present state, and *care* and *selection* must be exercised in order to retain their present perfection.

I come now to the second part of my subject, viz.: "The time of sowing." At present it is almost impossible to lay down any definite rules respecting it, because there will necessarily be so many exceptions, owing to the condition of the soil, its quality, and variety of wheat and its enemies.

If it was not for the midge, I would invariably recommend early sowing. Some of the advantages of early sowing are, a full development of the grain on account of a longer period of growth, partial immunity from rust, and likely an earlier harvest, the latter, previous to the ravages of the midge, was synonymous to a good one; but more especially because it is in conformity with its nature.

The club wheat is an excellent variety, and one which has been of great benefit to the Canadian farmer. When first introduced it was very prolific, and I believe still holds a high position on all land naturally adapted to the growth of wheat, such as porous soils and those clayey ones from which the water freely runs off after heavy rains. This variety should be sown early; at present it must contend either with the rust or the midge,—“of two evils choose the least;” sow early and avoid the rust, for experience has taught us it is more destructive in its nature, more baneful in its effects. But we have another variety of wheat which has entirely revolutionized our wheat-growing, and ushered in a new era to those farmers whose lands are located on the “black alluvial deposit.”

Land, which a few years ago would raise no wheat, but what would be shrunk and only fit for “still grain,” now produces a good crop of merchantable wheat, and is highly recommended by millers and bakers. I refer to the Fife Wheat; and, as was stated in the September No. of the *Agriculturist*, 1856, by Mr. Wade of Hamilton, “to know that we can be sure of a crop of wheat sown as late as the 10th of June, and to fill and ripe without a speck of rust, and yield from 20 to 30 bushels per acre, is *surely a consideration.*”

Those farmers who are in the habit of raising Fife Wheat know full well, by sowing late, they can escape the midge.