

## WHEAT FARMING.

The choice of seed is an important point in wheat farming. The best, heaviest and hardest grain should always be selected for this purpose. It is said that old wheat, if kept in the straw unthrashed till wanted, is greatly superior to new seed, the former germinating more speedily than the latter, which will not come away without rain. There is reason to believe, says Sir John Sinclair, that old seed wheat is not so liable to the smut as new seed, and that it produces straw of a stronger quality, and not so apt to lodge, although many intelligent farmers doubt these advantages, and contend that keeping old seed in the straw must occasion a loss of at least 25 per cent. on the quantity kept.

The soil and climate from which the seed-wheat is obtained are likewise matters of solicitude with the farmer. The wheat plant is not a native production with us, but comes from a warmer climate, having a longer and more genial season than Nova Scotia, so that while we give to the cultivated plant a rich soil to prevent its deterioration or reversion to the parent stock, we have at the same time to provide, as we best may, for the want of a climate suitable in all respects for its healthy development. It has been supposed by some cultivators (reasoning from insufficient data) that plants are capable of being acclimatised; on the contrary we find that although many plants are capable of growing in colder countries than those to which they are indigenous, nevertheless every plant has a certain limited range, beyond which it cannot pass; and all the exertions of the cultivator, by gradually removing it to a colder climate by repeated transplanting, do not suffice to render it a whit the more hardy. It accords with general experience in regard to exotic plants, that the longer they are cultivated in a climate less genial than their native one, the less healthy and fruitful they become. The wheat crop does not afford an exception to this rule. Agriculturists are therefore in the habit of occasionally changing their seed wheat by importations from foreign countries.

Wheat is especially liable to degenerate when sown continuously, not only in the same climate, but on the same soil; which renders a change of seed even from one farm to another desirable. And in obtaining changes of seed, the farmer ought constantly to keep in view that the value of the change mainly depends upon the superior character of the climate and soil from which it is obtained. In Miller's Gardeners' Dictionary, it is remarked on this point:—"The most skillful farmers purchase seed, at least every other year by way of change; for they find that the seed continued long upon the same land

will not succeed so well, as when they procure a change of seed from a distant country; and the same is practised by the husbandmen of the Low Countries, who commonly procure fresh seeds from Sicily, every second or third year, which they find succeed better with them than the seeds of their own country." In Nova Scotia the best results have been obtained from seed imported from Western Canada.

A writer in the *North British Agriculturist* observes in reference to the quantity of seed, that it is in general considerably more than what is proper to produce the most abundant crop. The quantity of seed may vary from about 7 pecks to 18 pecks and more per acre; but farmers generally agree that we have seed enough when we employ about two bushels to the acre. This is the quantity used by Boussingault at Bechelbronn, but in the same district, and even on contiguous fields, the proportions of seed employed vary in the ratio of from one-half to twice the quantity specified, without any sufficient reason for this parsimony or prodigality. Donaldson recommends three bushels to the acre. The proper quantity of seed depends in a great measure on the state of cultivation and price of land and labour in a country. In countries where land is cheap it may be more profitable to scatter thinly over a great area; but where the price of land is high, it must be sown more thickly and receive a higher style of culture to bring in a profitable return. "Exposure and climate," moreover, "are important elements in judging of the quantity of seed. In Spring most soils are easily acted upon by alternate frosts and thaws, and if sunshine follows frosty nights, the young plants are injured and sometimes killed, thus the crop is thinned out when it is on the eve of tillering; to prevent this the seed should either be drilled or ploughed in. Land which has been summer fallowed requires less seed than land which has produced potatoes, and it again less than clover lea. The period of sowing also forms an element; when sown early it gives greater scope for tillering, while the plant obtains a vigour which enables it to resist adverse circumstances. The quantity of moisture in the soil is still another. If it is either deficient or in excess, the seed will fail to vegetate so vigorously. If the land is either very dry or very wet, sowing should be delayed. There are several other circumstances, such as the method of sowing, the quality of the seed, plumpness of pickle, and variety grown."

In Scotland, seed-wheat is not often committed to the soil without some previous preparation, even when the very best grain is obtained for the purpose.

Various methods have been adopted to preserve the wheat crop from smut,—the

most prevalent of which is pickling or steeping. We shall here follow the concise directions of M. Boussingault, in the *Economie Rurale*:—"Farmers are wont before putting their seed wheat into the ground, to prepare it in various ways with a view to destroy the germs of certain parasites which are believed to adhere to it externally. The process is generally called pickling, or liming, because milk of lime, in which the seeds are put to steep for twelve or fifteen hours, is often employed in its course. Means that are said to be more efficacious have also been recommended; some make use of alum, others of sulphate of iron, sulphate of zinc, sulphate of copper, sulphate of soda, and even white oxide of arsenic. All these means appear to conduce to the same result. We employ sulphate of copper, which indeed is the custom in a considerable part of Alsace, and I can assure the reader that our fields of wheat are never infected. 100 grammes (or about 3½ oz. troy, are allowed to a hectolitre or sack of nearly three bushels of wheat; the salt is dissolved in as much water as is held requisite for the submersion of the grain, which is steeped in the solution for about three quarters of an hour, after which it is thrown into baskets to drain, and being then spread out on the floor, is dried before being sown."

The following is the process of pickling with chamber lye as described by Mr. Ferguson of Glasgow:—"Pour 10 or 12 gallons into a large tub, and then a bushel of wheat; stir the whole with a short stick, several times round; then raise the tub, and pour off the light wheat and spores that float on the surface, into a riddle, whose bottom is covered with a thin gauze cloth. This riddle is supported by two sticks laid across the mouth of an empty tub. The liquid running through, leaves the refuse, which is carefully thrown aside, so as not to mix with the sound wheat. The contents of the first tub is then emptied into a willow basket, where it remains for a minute or two to drain off superfluous moisture. Then the basket is emptied on the floor, and a shovelful of hot lime sifted over it, and afterwards the whole is turned over three or four times, until it be observed that every ear of grain has taken on a coating of lime. This process is continued till the quantity for a day's sowing is completed, when the whole is put into sacks, and sown in an hour or as soon afterwards as possible. If sown by hand the sower requires to protect his eyes by a thin gauze veil, but the drilling machine does the work well.

The kiln-drying of seed wheat has been recommended as an equal, if not better preservative against smut, than the usual practice of pickling,—being preferable in one respect, namely, that after kiln-drying the seed can be kept unsown with-