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by using a specially-prepared and colored mix for the face of the block, to produce blocks of any desired color. After a layer of facing is placed in the machine, concrete is filled in and tamped by layers, the tamping being done by hand or by power stamps. This is an important item, and one that must be considered carefully, as poor tamping will spoil blocks perfect in mix and mold. Pressure will not form good blocks, as under pressure the concrete will be made compact at the top and bottom in thin layers which will act as a seal to prevent the air from escaping. Continued pressure will compress the air, and when the pressure is removed, the air expands, forcing its way through the particles of sand and making a weak, porous stone, easily subject to disintegration.

Light and frequent tamping, however works the air out and packs the grains of sand tightly in the voids of the aggregates. When the mold is well filled and tamped, the block should be released from the machine and set aside to be cured. At this point it will be wise to remember that a newly-made block has no more strength than so much damp sand, and it should not be disturbed by handling after being molded, as a crack once started will never unite, and will utterly destroy the value of the block as a building factor.

As soon as the block has set enough to prevent the surface and corners being washed off, the sprinkling should begin, and the block kept well sprinkled for the first day. After that time it should be covered with hay, straw, burlap, or any material capable of retaining moisture and this covering kept moist for six days. If this is not possible, the blocks should be sprayed by a flowing stream continuously for that time. It should always be remembered that the interior of the block is wet through and through by the nature of the mixture and to insure uniform crystallization, the exterior should be as thoroughly moist as the interior. After having been cured for seven days in the shade, the block should be placed in the sun and dried for ten days, after which time the block will be ready for use on the wall. A well made block will easily have a tensile strength of 240 pounds to the square inch and a crushing strength of 1,000 pounds to the cubic inch, thus proving itself far superior to brick, while it is now well known that concrete building blocks will outlive any kind of natural stone. On an improved machine four men can make in one day, blocks that will equal 6,000 bricks, wall measure. These blocks can be laid in one-third of the time required to lay the same wall measure of brick, and by inexperienced labor, with one-quarter of the mortar required for the brick. The hollow concrete building block has the decided advantage of insuring a good circulation of air inside the wall to prevent dampness, and presents possibilities, by its method of manufacture that are peculiar to no other building factor. Cut stone of any nature can be imitated so successfully as to defy detection, and an imitation brownstone house can be made from concrete blocks cheaper than an ordinary brick house. The three main things to consider in this manufacture, are mixing, tamping, and curing, careful attention to these three points going far to insure the best quality of product.

It is interesting to note that where formerly a European Portland cement was specified as the standard of excellence, in recent years American Portland cement has been so improved by exhaustive and expensive experiments that the domestic production is now conceded to be superior in every way to the foreign article.

SCIENTIFIC AMERICAN.

A subscriber in referring to cement blocks suggested using a piece of two by four in the machine the length of the block, so that when the top row of blocks are laid all the hollow spaces will communicate by a passage underneath the plate and thus render the system of hollow space ventilation complete.

A Much Neglected Grain.

A valuable leguminous cereal which has suffered by neglect at the hands of farmers is the field pea. There are several reasons for such neglect, notably the idea that the crop is difficult to harvest. In the old days, stories have been told of a farmer growing peas in Manitoba, and how when pulled, a stiff wind removed the peas miles away, à la tumbling mustard, and the farmer saw them no more; that of course was before the days of fences. That excuse is hardly tenable now, if Supt. Bedford's suggestion is followed, namely to sow a peck of oats along with the peas and thus hold them up, so that they can be cut by a binder. The writer has tried the method and finds it workable, but made the mistake of not sowing sufficient seed. Peas should be sown at a rate, not below, three bushels per acre to which one should add one or even two pecks of clean white oats.

The ordinary separator will thresh the peas, if the concaves are set wide, a few will be split, but will do for feed; with a screen of a large mesh and plenty of wind, the fanning mill will easily separate the split from the whole peas.

The cultivated varieties of peas are usually supposed to belong to two species, namely: (1) the FIELD PEA (*Pisum arvense* L.), which is said to be found in a wild state in the south of Europe, and (2) the GARDEN PEA (*Pisum sativum* L.), which is not known wild, and may possibly be a modified form of the former species.

THE GARDEN PEAS, of which there are endless varieties, have white flowers, and seeds of uniform yellowish white or bluish green color; they are also more delicate and suffer more readily from frost and drought than the field pea.

Some of the garden forms for human consumption are grown on farms near large towns, and are a profitable crop on suitable lands under such circumstances.

THE FIELD PEA, of which there are comparatively few varieties, is more hardy than the garden pea, and the flowers have purple or lavender colored 'standards' and 'wings' of deeper purplish red; the color of the seeds is greyish brown, dun-colored, or grey speckled with fine spots.

SEED AND GERMINATION.—The seeds do not germinate freely below a temperature of 5 degrees C.

The young seedling resembles that of the bean in general structure. It possesses a strong tap root, two cotyledons which remain permanently below ground, enclosed by the testa of the seed, and an epicotyl, which comes above ground in a curved form.

ROOT, STEM AND LEAVES.—The pea possesses a marked tap root and a number of branching secondary roots. The stems are round and too weak to stand erect without a support.

The end of the leaf possesses one or more opposite pairs of tendrils and a terminal one, all of which are modified leaflets. The tendrils are sensitive to contact, and wind round any small support which they touch; by their aid the plant is enabled to support itself in a more or less erect position by clinging to neighboring objects.

SOIL.—Peas give the most satisfactory yield of seeds upon soils of a medium character. In all cases it is necessary that the ground should contain a considerable proportion of lime. Upon good rich soils or those of a peaty and damp character the stems and leaves grow too long and become laid; the crop then yields few peas.

SOWING.—The seed is best sown early, with a drill. The amount needed is 2½ to 4 bushels per acre, according to the size of the individual seeds. On very clean ground the seed is occasionally sown broadcast at the rate of 4 or 5 bushels per acre.

YIELD.—Peas are one of the most uncertain of

farm crops, only one crop out of every three or four being satisfactory. The yield on the best soil adapted to the crop averages about 30 or 35 bushels. Supt. Bedford reports yields of from 50 to 85 bushels per acre, of an excellent sample, and that the grain is nearly always very productive, and that it is free from the pea weevil; the weight per bushel being from 62 to 65½ lbs., grown on summer fallow.

Very few of the Seed Fairs seem to consider peas as worthy a place on their prize lists, an omission, where of all places such should not occur.

COMPOSITION.—Peas are slightly less nitrogenous than beans, but they contain more soluble carbohydrates and less 'fibre' than the latter.

Peas contain on an average 14 per cent of water, 20 per cent of albuminoid, about 54 per cent of soluble carbohydrates, and 5½ per cent of 'fibre.'

The feeding value of peas and the beneficial effect on the land, entitle this cereal to more consideration at farmers' hands, especially when it is remembered how speltz or emmer was boomed a few years ago, a grain in our estimation much inferior to peas.

Would Abolish Grading System.

EDITOR FARMER'S ADVOCATE:

I have read with a good deal of interest your article on "Grades, as an Advertisement" in the Advocate of the 24th inst. The question is a very important one, as there certainly is a screw loose very seriously somewhere. There must be something radically wrong with a system by which farmers lose perhaps millions of dollars a year. At the Grain Growers' Annual Convention at Regina last year, there were several lots of Official grades placed upon the table. The No. 1 hard was not by any means as good as thousands of bushels raised and shipped from this neighborhood. On returning home I brought a quantity of it with me, and without saying where it came from submitted it to our local buyers for grading. One said it may go 1 Northern, two promptly graded it 2 Northern, but not a man would make it 1 hard. And it is a doubtful question whether a car load, equally good, shipped from here would have netted the shippers more than 2 Northern at Winnipeg.

Let me give another illustration from my own experience. In 1891 I shipped a carload from Qu'Appelle Station which I thought to be as good as any ever shipped from that point. On getting returns from the firm to which I had consigned it at Toronto, I found it had been graded at 2 Northern, and I was out 12 cents per bushel. The next car, of the same wheat, I shipped straight through to L. Coffee & Co. on sample, and got the highest price on Toronto market. So much for grading.

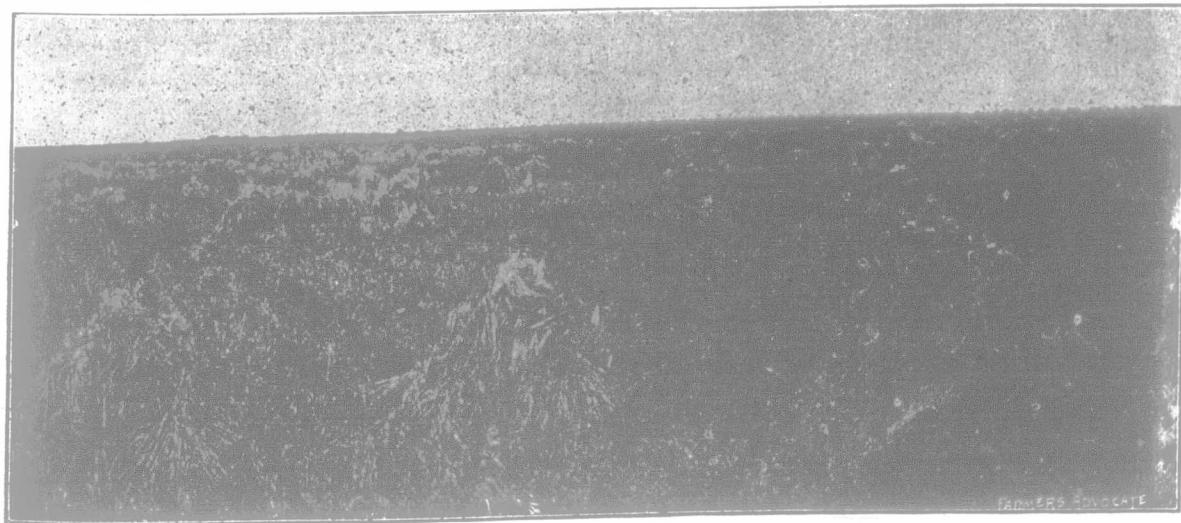
It is assumed that the quality of our wheat has deteriorated greatly in the last few years. The inspection reports published in the newspapers appear to bear out this assumption. And you say, "Later when the quality of our wheat deteriorated" etc. But what evidence is there that our wheat has deteriorated? Would the average bushel of wheat grown last year make less flour than the average bushel grown ten or fifteen years ago? Is the quality of the flour made from the crop of 1905 inferior to that made from the crop of 1895? Is "Mantioba Strong bakers" a poorer grade than it was then? Are we eating poorer bread than in years gone by? Has the flour made by the Ogilvie, Lake of the Woods or other milling concerns, from last year's crop, been graded down in the markets of the world as of inferior quality to that made ten years previously? There is not a tittle of evidence under heaven that I have ever seen or heard, that such is the case. I have been growing wheat in this country for fourteen years, and the wheat I raised last year was as good as any raised during all those years and a load of 1905 wheat taken to the mill will procure me as much flour of as good quality as it did in 1895. And if a bushel of wheat makes as much flour, of as good quality as it did in years gone by, where does the deterioration of our wheat come in?

The Grain Growers' Convention last year strongly endorsed the proposition of a Sample Market for wheat at Winnipeg. How any farmer's representatives could have been persuaded by the railway companies that "it would be to the producers interest to continue to sell on grade" as your article states, is utterly incomprehensible. That any farmer would rather run the risk of grading than sell his wheat for its straight milling value, can scarcely be believed. He may be certain his wheat will not be graded above its value, is he sure it will not be graded far below it?

Mr. John Love is reported as saying at the Annual Meeting of the Winnipeg Grain Exchange, that the country lost twenty millions of dollars through rust in 1904. The loss from smut in 1905 must have been quite as great as from rust in 1904. But who lost it? Did the buyers? Did the millers? If they did, they kept very quiet about it. The fact is, this whole grading system needs a thorough overhauling or to be completely abolished. However it may affect the grain dealer or miller, it certainly hits the farmer hard every time and all the time.

Grenfell Municipality. JNO. NICHOLLS.
(Note. We should have been more specific and said according to the standards of our grades, our wheat has deteriorated.)

Seed fairs are popular and deserve support, especially the fanning mill and grain pickle demonstrations and exhibit.



FIELD OF BARLEY AT LACOMBE, ALTA