Cleaning Seed Grain

A Two Mill and Grading System used by a Saskatchewan Farmer

By Paul Gerlach, Allan, Sask.

Winner of First Prize for World's Best Wheat in 1913 at International Dry Farming Congress

The question of grain cleaning at this time of the year is an important one with the grain growers, and too often this is not given the attention it should have.

When one considers the great amount of wheat grown in the western provinces and the difficult problem of securing good, pure seed, free from other grains, weed seeds, etc., some time may be profitably spent looking into this matter.

Personally, I do not consider it at all sufficient to rely on the various mills I possess to do my re-cleaning and grading. The first step toward good seed should be hand selection of plants in the field, and the product from them allowed to multiply until sufficient has been secured to furnish seed enough for my whole requirement. Hand culling in the field is resorted to before and during harvest and threshing is done with a small machine which permits me to use ample care in keeping my seeds pure and clean. I use a small grain cleaner for re-cleaning seeds from my plots.

For years I have made a specialty of growing seed wheat and have not been able to secure a mill that would do the cleaning and grading to my satisfaction. Nearly every careful farmer realizes how difficult it is to remove cockle, buckwheat, barley and oats from wheat. Some of these seeds are long and slender, others are short and thick. When seeds have the same thickness and weight of the wheat kernels a screen cannot remove them. I have four different mills and graders and by passing the seed thru a combination of three of them I can do very good work, provided I have the right grade to begin with.

I have prepared a chart which will give an idea of my plan of operation.

How The Cleaning Is Done

The grain is first elevated from the bin into the hopper of a mill from which it passes over a short screen having triangular holes, 3-16 inch from point to point, and the apex of the hole extends toward the higher part of the screen. Buckwheat is nearly all taken out here owing to the shape of the hole which permits this troublesome seed to pass thru and only the smallest wheat and such seeds as mustard, lamb's-quarter, etc., will be removed and conducted into a box.

The grain next passes over a screen having perforations large enough to permit all wheat to pass thru and large obstructions, etc., go over. To assist in removing any oats, an oil cloth apron rests over the screen which causes many of the oat seeds to pass flatly over the holes.

The wheat, after passing thru the screen, drops on a shelf and is guided to the rear of the mill where it is permitted to drop thru a strong blast of air to the long-mesh screen, having large enough apertures to remove any grains not suitable for seed as regards thickness. The blast of wind must have sufficient strength to blow out any grains not heavy enough for seed purposes. It is highy important that the speed of the machine be very uniform—only some power such as a gas engine is reliable.

By lowering or raising the rear end of the long-mesh screen quite a variation is made in the amount of seeds screened out. The shake of the mill should not be too vigorous to cause seeds to dance about too much. The mill I have is equipped with automatic cleaner under this screen which prevents it from becoming clogged. This extent of re-cleaning is about all the ordinary grain ever receives and very much of it never obtains that.

1.—A segment of one of the cleaning drums. Note separation of long and short grains. 2.—Shows cells in the walls of one of the drums.

After the wheat has passed thru mill number one it is elevated and passed thru an imported mill, made in Dresden, Germany, which is devoid of any fans or screens, but does most excellent work. In theory it is radically different from all other mills. Instead of making a separation of grain by weight or size, the length of the kernels is taken into consideration, and the grading is done by taking advantage of that fact.

The mill is composed of two drums which are united together by a band of steel having large holes, making one continuous cylinder. The material of which the drums are made is zinc, about 3-16 inch in thickness and honeycombed with cells. The cells in the first section are deep enough to permit a grain of wheat to find lodgment within, while oats, barley, etc., project beyond the cells. The drum revolves seventeen revolutions per minute and in revolving the normal wheat grains, or anything smaller, are elevated to a height of 90 degrees or over and are then dropped on a pan and conveyed by means of a spiral conveyor, to the second drum. Then they are released and permitted to drop to the bottom where another separation takes place. The cells in this drum are shallower, only half grains of wheat, or very short ones, buckwheat, cockle, etc., are permitted to enter deep enough into the cells that when elevated they will remain inside until sufficient height is attained that they, when released, fall on the pan and are conveyed by lower or rear end of the cylinder and means of the spiral conveyor to the

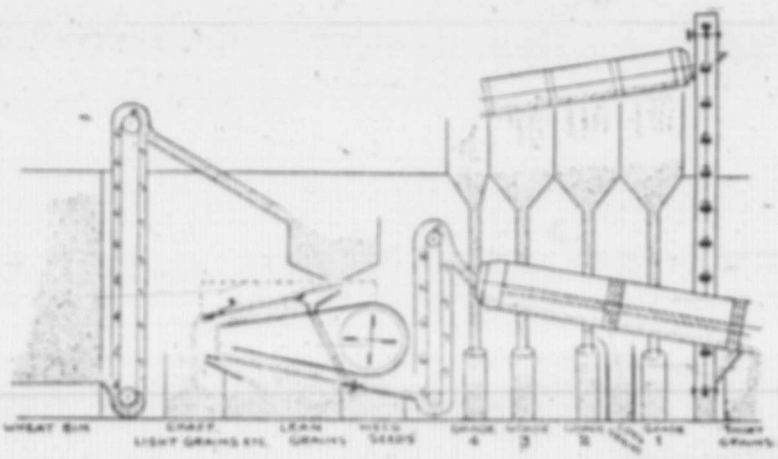

Diagram of the mills and grader used by Mr. Gerlach. The bin of grain to be cleaned is on the left

Continued on Page 21