



Extracts from a Prize Essay on Spring Wheat.

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THE SOIL AND ITS PREPARATION.

The best soil is clay loam, with a gravelly subsoil, the surface overlaid with vegetable mold such as prairie, bordering on the burr-oak openings, common at the West. All clay soils of the West will bring good wheat for three or four years without manure, but it is better not to take off more than two or three crops without manuring. Barn-yard manure made on the farm is the best general fertilizer for wheat. When the land is much worn, two bushels of lime, and three of salt to the acre, is probably the best and cheapest fertilizer that can be used. Plow in the Fall from 4 to 10 inches deep, and sow on the lime and salt in Spring. Fall plowing often brings from five to seven bushels of wheat to the acre more than Spring plowing. Deep plowing is the best, as it lets the frost deep into the soil, preparing it for a crop the coming season, and destroying many seeds and insects.

SEEDS.

The best varieties known in the West are the Canada Club, the Canada Fife. The Rio Grande is an excellent kind for bread, but does not yield equal to either of the above named varieties. A variety known as the China, or Australian, is being introduced and promises well; it resembles the Rio Grande. That the entire harvest may not ripen at the same time, different varieties should be sown. First the Club, second China, third Fife. The sooner wheat is sown in the Spring the surer the crop, and the better the grain—another reason why the land should be plowed in the Fall.

SELECTION AND PREPARATION OF SEED.

Many ways are practiced. The best mode is as follows: Select the best and cleanest portion of the field, and let it stand until thoroughly ripe; cut and shock until quite dry, and thrash with a flail. (Thrashing with a machine often cracks the largest and best grains and destroys their germs.) The seed, though selected as thus directed, should be carefully prepared. The best way is to procure two barrels, two corn baskets, a wash-tub or a half barrel tub, a large dipper, and a half bushel measure; also plenty of salt, and one ounce of blue vitriol to each bushel. Place the tub in a convenient place, and a barrel on either side. Make four to six nail-scratches in each barrel, with two ounces of pulverized vitriol to the paulful. Fill the tub with brine, leaving space enough for one half bushel of wheat. Commence washing by pouring a half bushel of wheat into the tub near one side, in a small stream to prevent the grain from carrying down the lighter substances to the bottom. Skim off with the dipper and throw the skimmings into the basket placed on the right-hand barrel. Stir and skim until you have cleaned your seed perfectly, then pour the contents of the tub into the basket upon the left-hand barrel, and let it remain there until another washing is ready, when it must be thrown in a pile on the floor. Fill the tub from the barrels and keep good watch of the bottom of your barrels to see that the supply of salt and vitriol is constantly kept good, as otherwise the brine will soon become so weak that it will not float the heaviest oats. The vitriol acts as a preventive against smut, and the salt will pay its cost as a fertilizer. This work can be done in stormy weather, as the seed will take no harm by lying in the pile for a week or more. Lime may be used as a dryer, but should not be mixed with the wheat until the morning you commence sowing, as it will eat out the chit if left too long. When washing keep account of the bushels washed, measure the pile when you commence sowing so as to know how much it has swollen, deduct the foul mass in the basket, and by a little figuring you can ascertain how much it will require to the acre to use the same quantity as if dry. Seed cleansed in this manner does not require so much to the acre as when sown filth and all.

SOWING.

Should the ground be very uneven, it should be dragged down with a cultivator or thirty-tooth drag, in order that the grain may be covered evenly. Sowing with a seed drill is best, for the reason that it puts all the grain in at the same depth, whereby it all comes up at the same time, and ripens more evenly than when put in with a drag or cultivator. But all farmers are not forehanded enough to purchase a drill, and some must continue the old way of sowing. Many inventions for sowing have been scattered all over the country—some very good ones. I know of no better method than sowing broadcast by hand, as high winds prevail at the sowing season, and but few machines can be used in the wind to advantage.

The best method of sowing broadcast is, first to sow through with one hand then back with the other, always throwing with the wind. For instance: If the wind is blowing from the south go first to the east and throw with the right hand. Then pace off four paces or less, face about and sow to the west, shifting your bag and sowing with the left

hand. The bag should be opened at the mouth by a hoop sewed into it, tie one lower corner to the mouth and sling it over the shoulder. A man can thus sow in any wind.

COVERING, HARROWING-IN, BUSHING, ETC.

A cultivator in the form of a V, does very good work, but a still better one coming into use in these parts is, rectangular, three feet wide and eight feet long, with a cross-bar holding each tooth in its proper place, and furnished with a roller at each end. The ground should first be in a sufficiently dry state; as wet, clammy ground makes hard work for the team, and it is left in a poor condition for a crop. Sow from March 20th to April 15th, according to the lateness of the Spring.

Cultivate across the plowing, lapping one half, or use a thirty or forty tooth drag with the furrows, also lapping one half. The common practice of cross dragging will uncover more grain than it will cover up, therefore the dragging should be all done one way. To make the work complete, pass over it with a heavy roller. Where a roller can not be had, a brush drag made in the following manner, answers a very good purpose: Take a straight pole, five or six inches through, and bore holes about eighteen inches apart, into which insert bushes or small trees 10 or 12 feet long, with as branching tops as can conveniently be found. Then fasten a rope 16 or 20 feet long from one end of the pole to the other forming a bail, to the center of which attach the team. One horse can draw the drag, and a boy ten years old can drive it, and do the work. The pole mashes the lumps, and the brush whips the dirt into a fine state and leaves the field very smooth, and is better for land in a wet state than a roller.

AFTER TREATMENT AND INSECTS.

Very little is to be done after sowing a well cultivated farm. Clean out all brush or stones in the way of the reaper. Should the weather be dry, fields that were bushed may require rolling. This depends on the state of the soil. Should it appear too light and mellow, don't be afraid to put on a good heavy roller, even after the wheat is six inches high. When heading out, all oats and fowl weeds should be pulled out, where it can be done without trampling down the wheat. A hooked knife attached to the end of a long pole can be used to a good purpose in cleaning fields, by walking through the dead furrows and reaching to the right and left cutting off the oats and fowl stuff close to the ground, letting them fall in the grain, unless ripe enough to germinate, when they should be picked out and taken off. I know but little of insects, as nothing troubles our wheat but Chinch bugs. I know no remedy for these. Lime and salt may cure them as effectually as any thing. They evidently do not like the salt. Early sowing of the early varieties may be practiced with good success in guarding against insects of almost all sorts, the weevil excepted.

THE HARVESTING

is a very important part of wheat raising. From the time the wheat begins to turn, the farmer has much anxiety. His fields are closely watched, while he is preparing to perform the hardest work of the season. Every thing must be put in perfect order. Help must be secured, (and what is also important, preparations be made to pay help). Wheat cut too green will shrink, and if too ripe it will shell. But there is little danger of making the mistake of cutting too green. Most wheat is cut too ripe. The earliest sown fields should be visited from day to day, the kernels examined, and as soon as the wheat is out of the milk, and fairly in the dough, cutting should commence. Wheat cut in this stage is whiter, will weigh more to the bushel, yield less bran, more and better flour, and sell better—as is well known to all who have tried the experiment. Cutting should be done with neatness and dispatch. Never purchase a reaper until you have tried the identical machine you intend to purchase. Reapers of the same manufacturer will not work equally well, therefore try different ones, until you get one that will do the work well and fast. When you have a reaper keep it in repair, and if you are not capable of doing it yourself, put it in charge of a man that is. A poor cradle, or a good one in poor repair is the greatest nuisance a farmer can have in his fields, except a poor hand. A cradler should understand keeping his cradle in working order, for a cradle or rather its fingers want altering in changing from light to heavy grain, or from wet to dry grain. Then again the scythe may be too long so as to cut more grain than the fingers will gather; in this case cut off the point of the scythe, and if the fingers are too long serve them in the same way, otherwise they will haul in the standing grain and make hard work, and at the same time a waste. And this is not all—the grain thus pulled down will lie under the next swath and hinder the binder.

BINDING.

Poor binding spoils every thing from cutting to feeding the bundles into the thrashing machine. In binding after a cradler, while raking the swath into a sheaf, the butts should be kept against the leg and the grain slid together, instead of rolling it, so as to keep the butts even and the sheaf of its proper length. A band should be made in such a way that one part will draw across the heads in the band and hold them firm against the sheaf. Too much straw in a band is a detriment, as it can not be drawn tightly enough;—no more than fifty straws should be used. To make a stout band quickly, gripe the straw in the left

hand just below the heads; divide it with the right hand; pass one half around the other and over the thumb; take it in the right, near enough to the middle to clasp the thumb on the heads, and thus hold them firm. Place the band over the bundle, and at the same time pass the left hand under it with the back next the ground, grasping the lower end of the band half way from the heads to the tie, and draw it under the sheaf, as near the middle as possible. As the tie in the band becomes firmly set against the sheaf, slip the hands together, holding on with the three lower fingers of the left hand, draw the end in the right hand between the thumb and forefinger of left; then tuck the ends under with the thumb of the left hand; throwing it a little back, then clap your rake on the but of the sheaf, draw it towards you, dropping the rake off the bundle on the ground so as to catch the scatterings and pass on to the next. What I have been so long in describing can all be done in half a minute. Binding done in this way will stand the test of handling, and every farmer knows it must undergo a good deal before it reaches the thrashing machine. Just consider, Mr. Binder, how much you may hinder the operations of the harvest by slovenly binding. The sheaves must be carried together, perhaps by boys, then shocked and capped; next pitched on the wagon or cart, then pitched to the stacker on the mow, thence to the band cutter. Should only one bundle in twenty give out in passing through all these various moves, it wastes much time and grain. One man stopping to bind a bundle binders not only himself but another man and team. It requires much time to gather up the scatterings, and these put into a stack often causes it to slide out of shape, which lets in the water and sometimes destroys a large quantity of grain. Then, again, the thrashing is hindered, as it takes much longer to thrash loose grain than bound. A thrashing machine running at half speed hinders half the time of ten or twelve hands and eight horses, and all in consequence of a poor slovenly binder. Brother farmer, just watch your binders, and if you can't persuade them to do their work well, pay them off and let them tramp. [Provided you can get better ones.—Ed.]

SHOCKING.

Large fields of wheat are often seen thrown together, two and two, and then, in consequence of the hurry and scarcity of hands, the grain is allowed to remain for weeks, and unless a man is employed to go over the ground after every blow or rain, it must damage to a considerable extent, for the heads can not remain long lying on the ground without growing. By wetting and drying a number of times it becomes bleached, the bran shrivels, and the grain loses its vitality—called among farmers being "banged."

Grain of all kinds, and more particularly spring wheat, should be put up in round shocks and capped with a double cap. Commence by setting four bundles in a square, and then four more, one in each corner thus: * * * setting the butts firm on the ground and * * * pressing the heads together. Select two * * * smallish, long, slim bundles, break one across one arm by handfuls until the whole is broken. Then lay it on the shock, spreading the heads and but as much as possible. Then take the other bundle and slip the band well towards the but, and proceed as before, placing the heads in the opposite direction from the other, letting the heads cover the bands of the first one. Wheat shocked in this way will stand a long time, and any storm, except a hard blow, without damaging. It will dry out in a shorter time than if set two and two, for the reason that water can not penetrate any part of the shock. Wheat cut very green will cure in this way as soon as any, as any one can see that all the bands are left to the air. It will not shell as badly when handling, and is not exposed to birds and vermin as when set two and two. Should the grain be very ripe and dry, fourteen sheaves may as well be put in a shock as ten.

STACKING, ETC.,

requires care, skill, watchfulness and cautious judgment. The careless and slovenly manner in which stacking is often done is the cause of much loss of grain and time. Stacks thrown hurriedly and loosely together are sure to damage, unless the weather holds dry for ten or twelve days until the stacks are sufficiently set to shed water. Farmers are often deceived in stacks. Men coming from a distance to work in harvest, and anxious to make as long a job as possible, "crack themselves up" as stackers; they are set to work, and the farmers knowing them to be good hands otherwise, have confidence in them, and take little notice how the work is done, and at thrashing time, lo and behold wet stacks from top to bottom, three or four hundred bushels of wheat to be kept separate and dried; then, after two or three weeks of perplexing care, and loss of time, he has that amount of damaged grain for market, which injures his reputation as a good wheat grower.

In driving to the stack, care should be had not to drive the load too near the stack or hit it, for after a stack is once started a small jog or push may cause a slide, which will create a shoulder and a leak, besides making much trouble for the stacker. Commence your stack by setting a bundle erect in the centre of the ground on which you wish to build the stack, then set around it, going round and round keeping the sheaves as perpendicular as possible until you have attained a diameter of about fourteen feet; still continue to en-

large the bottom but press the heads inward setting the butts out until the bottom will measure sixteen feet across, bringing the outside course quite flat. A few rails or boards may advantageously be used under the stack. Now commence on the outside, laying the second course upon your knee, putting your whole weight on each bundle and packing them firmly together. The second row must be placed upon the first, covering the heads of the first and laying the butts even with the bands, if the bundles are of ordinary size and length of straw. Should the straw be long and loose, cover the bands from sight; if short, leave them in full view pressing them firmly with the knees, and continue to go around in this way until the centre is reached. Keep constantly in mind that the centre must be kept full and solid. To effect this more perfectly, the outside rows may be laid loosely and packed a little as the centre is approached, so that when the stack settles the outside course may settle faster than the centre, thus giving the butts of the outside courses a downward inclination, which will carry off the water perfectly. Build the stack perpendicularly four to six courses; then lay out, very slowly at first, five or six courses more; then three courses, one above the other, after which draw in, gradually at first. As soon as you commence drawing in, fill the middle fuller or pack tighter. A stack may be rounded off on the top, for convenience, and be perfectly safe from wet, by capping with hay or straw. If carried to a peak, a cap can be made of a sheaf and put on butts up.

It is very inconvenient to put a sharp top on a large stack, oftentimes requiring a third hand, and the work is no better.

Should your stack become lower on one side than the other, avoid the foolish practice of laying on two courses, for by doing so you often cause a slide, but pack the lower side tighter, and the opposite looser until your stack is level, then proceed as before. The pitcher should have his mind on his work and keep a constant watch of the stacker. Care should be always taken not to throw the bundles on the outside course, after the stacker is off, and before the second course is placed upon it, for the reason that it may get a start outward, throwing the stack out of shape, so that it will settle with a shoulder and make a leak. Always throw the bundle in the most convenient way for the stacker. Never throw the second bundle until the first is disposed of. Mowing away wheat in barns I say nothing of, as it is safe in almost any way, but is done most conveniently in regular courses.

THRASHING.

Probably no work is more dreaded by the farmer than thrashing, why it is so, I hardly know, unless for the reason that there are so many slovenly, lawless thrashers. The remarks made on running a reaper will apply to the thrashing machine. Farmers that know nothing of machinery often purchase thrashing machines and go forth with all confidence imaginable, but soon, for want of care and the requisite knowledge of their machine, it becomes rickety and badly worn. Thus delapidated, stoppages frequently occur, making the job long and tedious. One experienced thrasher that has the faculty of keeping his machine in repair, is worth more to a farming community than six of the opposite stripe. Thrashers with good new machines are the most profitable to employ, provided they understand their business.

The farmer should have hands enough at thrashing to relieve him from any fixed position, so as to make himself a "spare hand." This gives him an opportunity to look around and see that the work is well done. Examine the straw, and see that the wheat is thrashed clean; examine the sieve and see that the wheat does not blow over in the chaff. Look to it and see that the wheat is not cut by the cylinder, and if so, order the concave lowered.

Thrashing should never be done until the stacks are through sweating. Stacks after standing one week, commence sweating and continue to sweat about two weeks, so that it is not safe to thrash until the stacks have stood for about four weeks. Wheat thrashed while sweating is sure to be damp and liable to must in the bins; but thrashing after the sweating process is over, it is better for milling than when thrashed before, from the fact that the bran is softer, and the flour is easier separated from it, thus giving a better yield, and whiter flour. Should your wheat be damp and it be necessary to put it in bins without drying, avoid the foolish practice of putting in lime to absorb the moisture. Throw in a few stones or bricks, which will draw the moisture from the wheat, having the same effect as the lime, and leave the grain clean and smooth; which will please the miller much better than lime and rough dirty wheat. To clean it of smut for seed roll in lime for twenty-four hours, which will burst the smut balls; then you can blow them out with a good mill.

GENERAL REMARKS.

No farmer can succeed any great length of time in wheat growing by following that branch of agriculture alone. Fertilizers must be had sooner or later, and the straw alone and manure of the teams afford but a small supply. Therefore a farm of two hundred acres should be so arranged as to keep at least one hundred sheep, five cows, and raise heifers enough to keep the stock of cows good. Also raise a yoke of oxen as often as once in six years. Keep a good pair of mares and from them raise, occasionally, a span of colts for market, or to remain on the farm. Six to ten swine may be fattened yearly. From that amount of stock, if the straw is properly