

### WHAT IS WANTED

THE MAN WHO KEEPS A LARGE HERD OF COWS FOR THE PURPOSE OF MAKING BUTTER.

The man who keeps a large herd of cows for the purpose of making butter, needs a cow from a strain that has for many generations been bred and fed for that purpose, and in that he would seldom fail to find either the Jersey or the Guernsey to meet his requirements, the only trouble with the latter being to find them at a price low enough to meet the size of his pocketbook. If they were as commonly offered for sale and at as low prices as good Jerseys we are inclined to think we would prefer the Guernsey, both for the butter dairy and the poor man's cow. But the man who keeps his herd to sell milk, whose amount of butter fat in it is not a factor in the price he will do well to look for the Ayrshire or the Holstein blood. For light soils and scanty hillside pastures, such as prevail in eastern New England, we would prefer the Ayrshire, but upon rich pastures, where feed was abundant and plenty of grain could be had, we should incline toward the larger and handsomer Holstein. We do not mean to say there are not good milking strains of good butter making Guernsey and Jersey cows, but we would not feel sure of obtaining

### Individual farmer's ditches are required to convey the water from community laterals to places on the area to be irrigated, from which it can be most advantageously spread over the ground for the irrigation of the various crops.

These ditches should generally follow the ridges and higher contour of the area to be watered, and great care should be exercised in their location, so that all the land can be covered, but not over-irrigated, and frequently burned up through the careless and faulty location of these small ditches.

The diverting works on lateral and individual ditches are most often wooden boxes with sliding regulating gates. These are arranged in general and rolling ground it is frequently found necessary to divert water from several places on the main lateral to secure the proper irrigation of a single farm. The proper location of all distributing ditches is possible only after a very careful study of the topography of the ground in each particular case.

The irrigator having his stream of water in his own lateral, which is connected across the highest ridge of the field to be covered, is now ready for its actual application to the growing crops. If his land is very favorably located, with comparatively uniform slopes, his lateral is probably in a straight line across the highest ridge of his field, with the greatest slope of the land at right angles to it. If his lateral has not so uniform a surface, his lateral may follow its irregular contour or be kept straight by digging it across the low places. In general the lateral ditches, from which actual application of the water to the crop is accomplished, should follow the line of least descent from the highest point of the field, the greatest slope being perpendicular to them.—J. C. Ulrich.

### A Handy Corn Marker

An easily made labor saving device for marking corn ground before planting is shown in the illustration. If the rows are to be 3 1/2 feet apart, make as follows: From a two inch plank cut four wheels (B) 14 inches in diameter and make a frame (A) of 1 1/2 inch iron pipe or steel pipe long enough to hold the wheels when 3 1/2 feet apart. Now take a 2 by 4 piece (A) 10 1/2 feet long and mortise edgewise across from wheel to wheel, so as to project one inch from the edge of each wheel. The axle (C) can be a scantling two or three inches square and rounded at the ends. Put the tongue in the frame, and in the back piece of the frame put two pegs to handle it.

In using this marker raise up when the edge of the plate is reached, and the weight of the crosspiece will cause it to swing to under side. Have cross marks right, when beginning at the sides of the plot, and drive straight. If rows are to be three feet apart, cut the wheels 12 inches in diameter and set three feet apart in the frame. The edges of the wheels and of the crosspiece should be sharpened slightly with a drawing knife. The illustration shows only one end of the marker and one of the four wheels.

### The Black Hulled Kaffir Corn

The white hulled variety of kaffir corn has been entirely supplanted by the black hulled variety in his section of Oklahoma, according to a writer in Farm, Field and Fireside, who says: There is a perceptible difference in the grain, but one has a black hull or chaff, while the other has a white hull or chaff.

While this is the only difference in outward appearance, except the black hulled grain has a little taller, the real difference is of much more importance and makes the black hulled of much greater worth.

If a dry spell occurs at the time of heading, growth is then slow or stops altogether, and the head of the white hulled variety often fails to push entirely out from the encircling leaves commonly known as the boot or sheath. The part of the head not pushed out fails to produce grains if it remains dry, or if rains come they are quite apt to rot, and so a light yield is had. The black hulled variety, having a longer stalk or stem to the head, seldom fails to push the head clear of the encircling boot or sheath, and so the whole head forms alk and comes to maturity.

This does not imply that there is never a failure or partial failure, but the chances are best with black hulled white Kaffir for a good crop.

### GROWING BARLEY

Fitting the Seed Bed and When to Sow—A Fine Hog Feed.

We have grown considerable barley in past years, and we think it pays to grow it for feeding stock, especially hogs. Barley almost always yields fairly well and is not as hard on our land as oats, writes a farmer to The National Stockman.

The time for sowing barley is just as early in spring as the soil can be properly fitted, and it pays to fit the soil well. I have seen quite good yields of barley which was sown very late, but as a rule the earlier it can be sown the better. Again, the time to sow depends on weather conditions and location. Here in central Michigan we can usually sow our barley from first to middle of April.

We plow our ground in the spring and think one year with another this is the best time to plow, as the ground can be worked to a nice seed bed easier and quicker.

The time of ripening is just about the same as wheat, sometimes a few days before and sometimes a little later, and the yield of course depends on condition of season, richness of soil, etc. I do not think that the old fashioned bearded barley yields quite as much as the beardless barley. In 1897 a measured acre yielded for us 57 1/2 bushels by machine measure. By weight it went considerably over these figures, and in 1898 about 30 bushels by machine or from a thrashing machine.

The amount of seed used both years was about 100 pounds per acre as the drill would sow. The beardless barley grows somewhat larger than the old variety and stands up better, and in regard to handling we would just as soon handle this barley as wheat and rather handle it than bearded wheat, to say nothing of bearded barley. Of course the ground for barley should be rich, as poor ground will not give good yield of barley or anything else. If farmers would grow more barley, I think they would be well paid, for barley makes fine hog feed.

### Methods of Applying Water in Arid Rocky Mountain States

Where an irrigator's land is contiguous to the main canal or distributary he may have independent diverting works or lateral ditches. Where, however, as usually happens, their position and the topography of the ground are such that a number of farms can be served by the construction of a single lateral ditch is usually the method adopted. These laterals are usually constructed as partnership or community ditches and are frequently extended to meet the necessities of additional farms.

Where there are many users from a common lateral they usually select one of their number to take charge of the distribution of the water, whose duty it is to see that sufficient water is turned into the lateral by the company's ditch rider and that it is equitably distributed. The proper location of these laterals is a matter of great importance, and too great care cannot be exercised in planning them both to obviate the necessity for a multiplicity of ditches and secure the best possible advantages for diverting the water over the lands to be irrigated.

### FARM GARDEN

#### GRAIN SMUTS.

And the Hot Water Treatment For Their Prevention.

Grain smuts have for years caused enormous damage. Two classes of smuts attack the commonly cereals—wheat and corn, which attack wheat only, and loose smuts, which occur on wheat, oats and barley. The second cut shows a good arrangement for the



hot water treatment of seed, which is one of the important remedies with wheat and oats. The two large kettles or barrels should hold 20 gallons where treatment is on a large scale. No. 1 containing warm water, 110 to 120 degrees F., is for the purpose of arranging the seed before dipping it into the second, which contains hot water at 132 to 133 degrees F. Unless precaution is taken it is difficult to keep the water in the second vessel at the proper temperature. A pail of cold water and a kettle of boiling water should be kept at hand to draw from when necessary to raise or lower the temperature.

The seed, at the rate of half a bushel or more at a time, is placed in a basket made of heavy wire with wire netting spread inside. A pole or beam having a hole at one end is passed over the top of the first pot. The hole should be large enough to allow the pole to be moved up and down and sideways. By swinging the pole around the basket can be filled at the bin, then immersed a moment in vessel No. 1, and then swung over to vessel No. 2, where the grain is treated ten minutes. Every minute or so the basket must be raised entirely above the water and allowed to drain. The pole can be supported on a peg in the second pot. Finally the pole is lifted entirely over the second pot and the grain removed and spread out to dry.

In dipping the grain into the warm water the basket is immersed, lifted and allowed to drain, then plunged again, and so on, but less than a minute is given to this preparatory treatment.

The important points are as follows: (1) Maintain the proper temperature of the water (132 to 133 degrees F.) in no case allowing it to rise higher than 135 degrees or to fall below 130; (2) see that the volume of hot water is at least six or eight times greater than that of the seed treated at any time; (3) never completely fill the basket or sack used for treating the seed, but leave room for the grain to move about freely; (4) leave the seed ten minutes in the vessel of hot water.

In drying treated seed spread the grain in a layer two or three inches deep and shovel over twice a day. A clean floor is a good place on which to dry the grain, but it is better to put it on canvas sheets, spread in the sun upon latticework a few feet from the ground, as this greatly facilitates drying. In the latter case the sheets, with the grain, can be taken in at night. The grain can be sown broadcast before being thoroughly dry, but in case a drill is used, it must be thoroughly dry. The seed may be treated months before being sown.

### ARRANGEMENT FOR TREATING SEED.

ing used if well dried before being stored. All tools and sacks should be disinfected, and the floor should be washed with a solution of bluestone (one pound to ten gallons of water) before spreading the grain. Canvas sheets and sacks can be disinfected by plunging them into boiling water.

The foregoing is among preventive methods recommended by W. T. Swingle in a bulletin on the grain smuts.

### Hogs in the Orchard.

In regard to the hogs skinning the orchard trees, if you put a dozen or two of hogs on an acre of land, or two likely they will skin the trees, or a flock of sheep would also. They must have room. There must not be too many in a bunch. It is said that hogs will tear down a pigpen to get the wood to eat. If you throw them a little lime, they will let the pen alone. I know that they have been known to dig out a stone wall for the lime. If you feed a hog some corn and don't starve him to death, he will eat your trees alone. Give the hog room enough and give him something to eat.—J. J. Blackwell.

### Nitrate of Soda.

The question of the availability of the nitrogen in a fertilizer is a very important one, because nitrogen is the most expensive constituent of fertilizers and also the one most easily lost from the soil. The substances used as sources of nitrogen in fertilizers are many. One of the stations in a series

### RESULTS FROM NITRATE OF SODA.

of experiments found the order of availability of nitrogen in certain of

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8 p. m.	Ocean Steamships, for San Francisco, calls every five days.		4 p. m.
8 p. m.	Columbia River, to Astoria and way Landings.	Ex. Sunday	4 p. m. Ex. Sunday
6 a. m.	Willamette River, Oregon City, Newberg, Salem & way landings.	Ex. Sunday	4:30 p. m. Ex. Sunday
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