

### Preparing for Another Wheat Crop.

It is generally admitted that too much work cannot be put upon ground intended for fall wheat. There is no doubt but on hard baked land a deal is needed to obtain a properly mellowed seedbed, which must be had if possible. In getting this the desirable firm bottom is also secured. Years ago almost all the fall wheat grown was on summer-fallow, but it is now conceded that two seasons cannot be afforded to obtain a single crop, especially one that is somewhat uncertain, and the price for which is as low as wheat has ruled for a long time. Anything less than a large yield of good wheat will not pay.

Where summer-fallowing has been done this season, the most successful wheat growers would say, do not plow very near the time of sowing, but give frequent surface cultivation during the last three or four weeks.

A popular spot for fall wheat is upon pea ground that was plowed out of sod last spring. Not only does such land work up well, but the decaying vegetable matter from the sod sends the wheat plants along at a good rate. When such a field is very clean, many good farmers favor not plowing it at all, but simply cultivating well with a disk or other good cultivator several times over. If it is to be plowed it cannot be done too soon after the peas are off. One dislikes to plow down scattering peas that the pigs might pick up, but if wheat is to be prepared for the peas will have to be sacrificed.

It is hardly worth while sowing fall wheat after oats or barley unless a dressing of manure can be given, and that is an unlikely possibility with most farmers this year. Where early clover was taken off, the second growth may be plowed down for wheat, but it is almost too late to think of that just now.

The advantage of a fine surface and firm bottom lies in the fact that when the seed is put in the ground that is sufficiently moist, in a few days it will put forth its main root pointing downwards, and its cotyledon or spear pointing upwards. This main root will grow straight down until it strikes the compact soil, which checks its growth. Being thus restrained in its downward extension, the root gives off a great number of laterals, running in all directions. Hence, the roots of the young plant lie almost entirely in the loose, fine soil during the fall and winter. When the ground freezes, this loose soil heaves in a mass, taking with it the roots of the plant in a body without tearing them, thus enabling it to better withstand the freezing and thawing of winter and spring. When the frost is out of the ground the under soil is soft, and the sun of spring tells nature to wake up and do something. The roots then begin to grow and penetrate the lower soil. The finer this soil is and the more vegetable matter it contains, the more porous it will be, which facilitates the ramifying of the roots through it. The time of sowing varies with localities, but from the last week in August until the 10th of September seems to be the favored time. This season, in many sections, such as Western Ontario, vegetation is two weeks in advance of other years, so that fall wheat seedling will be correspondingly early.

To sum up: (1) Sow early; (2) have a thoroughly pulverized seedbed; (3) soil enriched by manuring; (4) sow a good sample of seed of a variety that has proved meritorious under conditions similar to your own.

### Big Yield and Good Prices for Sorghum Syrup.

To the Editor FARMER'S ADVOCATE:

SIR,—I have had five years' experience in growing and making sorghum into syrup. We think it a first-class syrup in our section, and I make into syrup on an average about seven hundred gallons each year. The kind of seed we use is the Early Amber. I think it makes the best quality of syrup. The Early Orange is a good kind, and will produce more syrup per acre, but not of so good a quality. If it is a good crop, an acre will run about three hundred gallons; that is, in rows three feet apart, hills two feet apart. Cultivate the same as corn; when three or four inches high, thin out and leave five or six of the largest stalks in the hill. Plant about the first or middle of May, if the weather is warm; if not, do not plant till the first of June, as it will not grow in cold weather. As to harvesting, when the seed gets black and hard cut off the top (that is, the seed) and strip off the leaves. Cut, tie in bundles, and take right to the mill, being careful not to get sand or dirt on the cane, as sand will not mix well with syrup. I use one of the Grimm evaporators, and they are the best machine made for either maple or sorghum syrup. I can make sorghum as clear as any honey, and could sell more than I could make, at 50 and 60 cents per gallon. Dunwich Tp., Ont. C. SMITH.

### Sorghum Syrup—Nine Years Experience.

To the Editor FARMER'S ADVOCATE:

DEAR SIR,—I have had nine years' experience in making sorghum syrup. The variety I find most suitable is the Early Amber. Any good soil is suitable. The best way to grow it is in drills, about three feet apart; then thin to about three or four inches apart. I have made over two hundred gallons per acre planted this way. I have used the G. H. Grimm Champion Evaporator two seasons and find it to be the best. I can make from forty to fifty gallons per day. J. C. KEILLOR. Elgin Co., Ont.

### Winter Wheat Experiments.

BY C. A. ZAVITZ, B. S. A., EXPERIMENTALIST, ONTARIO AGRICULTURAL COLLEGE, GUELPH.

In view of the excessively low price of wheat, it is certainly clear that every practicable means must be adopted to grow the largest possible yield of wheat per acre, and of the best quality. The farmer cannot afford to grow grain by hit-or-miss. If he expects to meet with the best success he must make use of every available means which will be helpful in obtaining the best results. A little carelessness in the choice of varieties, in the selection of seed, in the dates of seeding, or in any one of a number of other things, might easily cause a failure where skill and carefulness would have been rewarded with a bountiful harvest.

Within the last seven years very careful and systematic experimental work has been conducted at the College with winter wheat. All the procurable varieties throughout Canada have been obtained, and also leading varieties have been brought in from Germany, France, Russia, England, etc., and also from the United States. These varieties are all grown on plots exactly the same in size and as nearly uniform in every respect as it is possible to have them. New varieties are added year by year, and nearly all kinds are grown in the trial grounds for at least five years, and the leading varieties for even a longer period of time. Upwards of one hundred and twenty varieties have been tested within the past seven years. Some of the most successful kinds of winter wheat among the above number are as follows:—

**Dawson's Golden Chaff.**—The Dawson's Golden Chaff has given the largest average yield of grain per acre among fifty-three varieties of winter wheat grown for four years in succession previous to 1896. This variety was also placed first in general appearance from among eighty-two varieties grown during the present year and examined by five judges. It is a wheat which possesses a stiff straw, a red chaff, a bald head, and a white grain. The straw is usually not more than medium in height and the crop is perhaps less subject to lodge than any other variety that has been tested, thus making this a variety well suited to both rich and average soils. The grain weighs on the average about sixty pounds per measured bushel, which is a little less than some of the other varieties. The weight per measured bushel this season, however, is about sixty-one pounds.

**Early Red Clawson.**—The Early Red Clawson has been grown for seven years in succession and is a good yielder. It is, however, rather weak in the straw and somewhat soft in the grain. The weight per measured bushel of this variety in the average of four years experimental work is only fifty-eight and a half pounds. In localities where winter wheat is almost sure to stand up well, and where the grain is usually very plump, the Early Red Clawson would no doubt be a valuable variety.

**Early Genesee Giant.**—The variety known as the Early Genesee Giant is a close rival of Dawson's Golden Chaff for the first place among all our varieties of winter wheat. We have had this variety for four years in succession, and it has certainly made a good record. It possesses a stiff straw, a short, thick, bearded head, and a white grain, which usually weighs well. The straw is long and rather coarser in growth than that of the Dawson's Golden Chaff. The Early Genesee Giant was placed second in general appearance by five judges who examined the eighty-two varieties of winter wheat under test this season. Both the Dawson's Golden Chaff and Early Genesee Giant will be very prominent varieties in the comparative results of the varieties grown in 1896, the results of which will be made public as soon as possible. These two varieties were grown in the large fields at the College this year, and the crops have just been threshed. The yield per acre of each variety is about thirty-five bushels, and the quality is good.

**Other Prominent Varieties in 1896.**—Some of the other varieties which will likely stand high in the comparative results of the present year are the Russian Amber, Poole, Simcoe Red, New Columbia, American Bronze, Reliable, and Golden Drop. The Andrews' No. 4, Giant Square-Head, and Queen Meg are all very similar to the Early Genesee Giant.

**Co-operative Experiments.**—After testing different varieties of winter wheat in the experimental department at the College for a few years in succession, the best varieties are selected and distributed to farmers throughout Ontario. Eleven varieties were thus distributed in 1893, nine varieties in 1894, and nine varieties in 1895. The Dawson's Golden Chaff gave the largest average yield per acre among these leading varieties in each of the years mentioned. The Early Genesee Giant was distributed in the fall of 1894 for the first time, and stood next to the Dawson's Golden Chaff in average yield per acre in 1895; the Early Red Clawson standing third. Only a few of the reports of the co-operative experimental work for 1896 have yet been received, but so far the Dawson's Golden Chaff in particular is making a good record. The results of the co-operative work will be made known as soon as the reports are received. It will be remembered that the Dawson's Golden Chaff, which was tested at the Central Experimental Farm, Ottawa, in 1895, for the first time, gave the largest average yield of grain per acre among twenty-six varieties grown in their trial grounds during that year. The Early Genesee Giant was also grown in 1895 for the first time, and stood third in point of yield of grain per acre.

**Different Dates of Seeding.**—An experiment has been conducted in our trial grounds for four years in succession in growing wheat at different dates of seeding, extending from the latter part of August until the 26th of September, and we find that the best results have been obtained from seeding about the first of September, and it is usually unsafe to sow winter wheat in the neighborhood of Guelph after the first week in September. A number of other experiments have also been conducted, but the results have not yet been sufficiently worked out for presentation to the public.

**Distribution of Seed in 1896.**—Persons who wish to receive small packages of seeds of leading varieties should apply to the Experimentalist for a circular which will describe the method of distribution, and which will also indicate the varieties which will be distributed this season.

### Road Rolling.

BY A. W. CAMPBELL, PROVINCIAL ROAD INSTRUCTOR FOR ONTARIO.

The roller as a roadmaking machine is entirely ignored in the rural districts of Ontario, and very few of the larger towns and cities know its real value. It is safe to say that a municipality can make no investment that will yield more abundant returns than the purchase of a road-roller. A popular belief is that they are intended to be used in cities only, but wherever good roads are of value, in that locality will the right machinery to build them be necessary.

Machinery is as needful in building roads as in building any other form of structure. To try to build a good road without a roller is as sensible as for a carpenter to try to build a house without a hammer, or for a farmer to cut a field of oats with the old-time sickle in place of the self-binder.

A road, in order to be good and remain good, must be kept dry. Every precaution must be taken to keep as much water as possible out of it. This is effected by subdrainage, to maintain a solid earth foundation and prevent the natural soil being softened by water soaking in from the sides and below; and by surface drainage, to carry the water quickly to and along the side gutters and prevent it passing into and through the road metal. Crowning or rounding the roadway gives the proper fall to shed the water to the side gutters. But if the roadbed is rutted or has hollows in the surface, or is pervious to water, crowning is of little service.

The common way of making an earth roadway, especially in rural districts, is to throw the earth from the ditches to the center of the road. This soft material is left for traffic to consolidate. But traffic at once creates tracks and hollows, which, holding the water in wet weather, quickly become ruts and pitchholes, and the road is soon a spongy mass, scarcely passable. When gravel is applied, this is again left just as it falls from the wagon for traffic to consolidate. But traffic again in this soft material repeats the story of wheel-tracks and hollows, of ruts, pitchholes, and impassable roads. At the same time the water is absorbed by the loose material, passes into the earth foundation, the gravel is worked downward into the mud, and the mud is pressed upwards into the gravel. When it is understood that the gravel (crushed stone, or whatever road metal may be used) should be kept as clean as possible to insure permanent consolidation, the perniciousness of this method (or, rather, absence of method) is more apparent.

If, instead, a roller had been used until the earth foundation and the metal placed upon it were as hard and compact as rolling could make them, the result would be very different. Wheel-tracks would not have been formed; the water would be shed readily over the smooth surface to the sides; the surface, having been made compact, would not admit the water into or through it; so that neither the road surface nor the soil under it would be softened—sinking, mixing, and wearing easily beneath traffic. The road would be traveled easily immediately after being constructed, and would be more easily and cheaply maintained.

A number of municipalities in the Province have recently purchased rollers, or are on the eve of doing so; but in France and in England, rolling is as much a part of roadmaking as is the putting on of gravel, broken stone or other road metal; and if Ontario is to have good roads, the example these countries have set us in this respect must be followed.

A new process of buttermaking, whereby it is said butter can be produced in a minute, has been invented by Herr Salenius, a Swedish engineer. The butter is made from sterilized milk, the milk being heated to a temperature of 100 degrees and then suddenly cooled to a temperature of 50 degrees, by means of small cooling-frames through which iced water is constantly run. The cream which rises is taken by a skimmer and raised to the churning-chamber of the machine. The cream is then forced into a tub, which is perforated with tiny holes, and emerges with great force onto each fresh layer of cream as it rises, converting it into butter by concussion. The butter is then in the form of granules, and is drawn into a tub, where it is mixed with buttermilk. After a thorough mixing, it is put under pressure in a butter-worker and almost all the buttermilk is squeezed out. The butter is then placed on ice, where it is kept for two hours. It is then worked over again and made up.