Gem State Rural

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Corn in the Inland Empire.

(By Hon. M. J. Wessels, of Cameron, Ida., before Idaho Agronomy Association.

A country where the climate and condition is such that will produce even a half crop of corn has much the advantage of a known corn producing country, in many ways. The first and probably the greatest of all is that you can till all your land every year and improve the soil at the same time, by turning your summer-fallow into a cornfield at but a trifle more expense than the regular summer fallowing, and you will have a crop almost equal to wheat in value. In some sections of Idaho where corn does best, we consider it equal in feed value to a full crop of any other grain, which would otherwise have been a total loss, at the same time you have cleaned the land from weeds and prepared the soil as well as the best of summer-fallow for the intended crop, and feed enough to make you several hundred dollars worth of pork and beef, with but a few dollars expenditure. In this country corn might be called a bi-product of the summer-fallow. It is absolutely a safe game to play. In a country where early frosts are expected and your corn gets cut before it tassels you can get it with a binder the same as you do your hay and you will be surprised at the amount of feed it makes. If it gets cut later and before the ears are ripened I would shock it the regular way and feed to the cattle in the winter or when needed. A few years ago we got in a hurry and sowed our winter wheat among the shocks, the harvesting of it was a year ago this summer, and you will remember that the crop was a little short everywhere, yet we got forty-six bushels per acre.

The year before that my renter hauled all the shocks from the field and set them up in one shock, covering less than one-eighth of an acre, but the rains and the snow settled it to the ground and it began to rot before he got much of it fed. We thought it would be a total loss, but the cattle seemed to like it; it was in a stage of silage and appeared to be relished, so he continued feeding. I never saw stock look any better in the spring: however, there is one condition to which corn is subject, that cattle do not like. That is the molded condition. In our case it being set up straight, all the rains that fell went through it before it collapsed, and it being well watered prevented it from molding much. Of course we do not recommend this mode of caring for corn. I merely speak of it as an experience that assured me of the indestructibility of the feed value in corn stocks alone. And from the splendid display that we have here in this adjoining room it is evident that the climate of our State is remarkably favorable for the development and production of corn. I notice that quite a number of samples would be a pride to a regular corn state and if we would exercise the same care in selecting our seed and varieties best adapted to our various altitudes and climates, as we do our wheat, oats, and barley I assure you that in a few years we can have a corn Carnival that would be a credit to the best corn states in the Union. When I speak of "corn states" I mean states that must grow corn as their principal crop, because they cannot grow wheat as we do. We grow corn because we wish to, and by growing corn we will increase the yield of our wheat crops, because too often wheat is grown in succession for four or five years when it would be half wild oats, especially on small farms that did not feel able to let part of the land lay idle. But the growing of corn will eliminate this.

Now in a few words, to prepare the soil, planting the seed, and cultivation. It has been my experience that corn ground should, if possible, be plowed in the fall or winter. Then, in the spring when the soil is in good condition to pulverize, doubly disk it; this will put the ground in splendid condition for the weeds to start, and when they make their appearance, I harrow the ground and kill all the weeds in sight, and if too early to plant I give it another good harrowing just before planting, and if the weather has been favorable two crops of weeds have been destroyed giving the corn an unmolested start. It will be a benefit to harrow it four or five days after planting, the harrow teeth slanting backwards, but never harrow corn while it is coming up; it is then too tender and too much is broken. After the corn has unfolded its leaves it can be harrowed with good results and if the corn has been planted in squares, say 3 1-2 feet apart each way, so it can be cross cultivated, no hoeing will be necessary. After the first cultivation I urge shallow cultivation, so as not to cut the roots of corn too much; this was very visible in a corn field of a distant neighbor who had two cultivators in the field, one on each side. One cultivated deep and the other shallow; the part cultivated deepest did not make much of a growth for several weeks and a much lesser yield in the fall. The depth of planting, I find, is very important, too. This was again the experience of only this spring in my own field. A part of the ground was very mellow and the marker made a much deeper furrow than in the remainder of the field. The planting was with a hand planter, putting the seed about 1 1-2 inches below the surface of the bottom of the mark. When we harrowed the ground a few days later putting the seeds about three to five inches in depth. Where the soil was cold and the wire worms had a better chance to destroy it, the result was a very poor stand. Corn, in my opinion, should not be planted over one to one and one-half inches in depth, and if the soil is moist enough one inch is better.

I do not mean to say that we can grow corn in every locality in the state, but if we experiment with the earliest varieties we will find that corn can be grown in many parts now deemed impossible.

Industrial Alcohol.

(By Prof. J. Shirley Jones, chemist of University of Idaho Agricultural College Experiment Station).

The passage by Congress on June 7th last of what is commonly known as the Denatured Alcohol Act, has seemingly been the cause of a great deal of more or less popular literature upon the subject. Indeed it is to be feared that the popular side has been over exploited and as a result certain erroneous impressions have gotten established among people in general. Some magazine and other writers in their zeal for a popular cause have told in glowing terms of the benefits to be derived from the use of tax-free alcohol in the arts and industries, too much has been written with all too little attention being paid to the rules and regulations which have been formulated for carrying into effect the provisions of the bill, i. e., to the conditions under which alcohol may be made and used without the payment of a tax. A great many persons seemingly have the impression that from now on almost any one can quickly qualify himself to be able to convert almost any refuse you can name, quickly and cheaply into a substance which, because of its cheapness, would compete with coal oil and gasoline as to bring the latter down to prices commensurate with their utility. With the idea in view of correcting any mistaken idea upon the subject which may exist, I have gleaned from what I believe to be reliable and trustworthy sources the more important facts concerned in the making and use of Industrial Alcohol.

The Act in question simply provides that from and after Jan. 1, 1907, under such regulations as the commissioner of Internal Revenue may prescribe, domestic alcohol of a certain degree of proof, if it is to be used in the arts and industries and for fuel and light and denatured before such use, may be withdrawn from a bonded warehouse, without the payment of the government tax. Provisions are made for carrying out the intent of the law as to the privilege of withdrawal, denaturizing, etc., and providing punishment for offenders against it.

Our government has been anything but liberal in its laws relating to the subject. In this she is far less progressive than European nations. For years the people of England, Belgium, France, Germany and other countries have profited enormously by the wise and beneficial laws of their respective governments relating to the manufacture and use of alcohol in the arts and industries. Our government put a heavy tax upon alcohol in 1864, and in spite of the hardships it has worked and hindrance it has been to industries in general, has steadily maintained that tax, evidently believing that the revenue so derived was of more importance than the impetus which would be given to certain lines of industry by more liberal laws upon the subject. It has taken years of labor on the part of the friends of tax free alcohol to get even the provisions contained in the present law acted upon favorably by Congress. In its zeal for revenue our government has worked a great injustice upon the industries of its people. Let us hope that the present law is only a beginning in the right direction.

As is generally known, alcohol is the intoxicating principle found in our common beverages. It is a definite chemical compound, having well defined characteristics, and can readily be obtained in a high degree of purity. It is formed from many sources, such as fruits, roots, tubers, grains, etc. Since it is made so commonly from the latter, i. e., barley, corn, etc., it is generally called grain alcohol. It should not be confused with "wood alcohol" which is obtained from other sources and has just as definite chemical characteristics, although the latter is often made to take the place of the former for certain industrial uses. On account of the great variety of sources from which "grain alcohol" can be made, it ought to be quite cheap. At present for most purposes it costs about $2.50 per gallon, two dollars of which cost represents the government tax.

By the term Industrial Alcohol we mean grain alcohol that has been denatured, either wholly or in part. The denaturing process consists simply in adding to the alcohol certain substances which are soluble in it and have a disagreeable taste or smell of such an intensity as to render the alcohol so treated totally unfit for beverages. When so treated alcohol loses none of its useful properties for certain industrial purposes. For special purposes, the regulations prescribe that it may be denatured by specially authorized denaturists. It should be noted that alcohol has been made synthetically, i. e., by direct combination of its elements. But because of the expense attached to this method of manufacture, it is not likely to effect its use to any extent at least for the present, and needs no further mention here.

Broadly speaking, industrial alcohol can be made from any substance that contains a fermentable sugar, or one that contains a substance which can be converted into a fermentable sugar. Whether or not such alcohol can be profitably made from these substances depends upon the ease with which they may be so converted and the amount of alcohol that can be obtained from it, i. e., it is a question for the manufacturer. Farmers are naturally chiefly interested in learning what crops may prove to be profitable when raised for the purpose of being converted into alcohol. These crops may be classified under one of three general heads, viz., starchy products, ie., such as roots, grain, rice and those containing sugar, such as sugar beets, cane, and those of a fibrous nature, such as refuse from saw mills, sawdust, etc. Fortunately Idaho would be represented under each head.

It is not at all likely that sugar beets will be grown for alcohol making purposes alone. More likely an attempt will be made to utilize some