

PRODUCING HEMP IN WISCONSIN

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Hemp has been grown successfully in Wisconsin for fully 30 years. There is a great deal of accumulated experience concerning the growing and handling of the crop in this state. During the last several years four hemp mills have been operating in Wisconsin. One of these mills is located at Markesan; one at Brandon; one at Beaver Dam and the other at Juneau. All of the hemp produced in Wisconsin has been grown in the areas surrounding these mills. There are other areas in Wisconsin of similar soil types which are adapted to hemp.

FERTILE SOILS NECESSARY

Experience shows that hemp should be grown on good, rich prairie silt loam soils or on the better kinds of fertile clay loam soils such as the Miami silt loam. The crop should not be grown on sandy soils, gravelly soils, heavy clay soils, or any soil that is run down or low in fertility and on soils in which there is little or no organic matter. Hemp should not be grown on any kind of peat or marsh soils. Everything considered, the soil is the most vital thing about producing a hemp crop. Under no condition should mediocre soils be used.

HEMP DOES NOT EXHAUST THE SOIL

Hemp removes about the same amount of fertility from the soil as does a good crop of corn. Because it grows rank and luxuriant, it is often incorrectly contended that it is hard on the land. Hemp requires a fertile soil for its profitable growth, but this does not mean that it exhausts fertility. Farmers, who have grown hemp for many years, unanimously agree that it is a very satisfactory crop so far as the soil is concerned; that it greatly assists in getting rid of weeds and leaves the soil in an excellent condition for succeeding crops.

HEMP ASSISTS IN CONTROLLING WEEDS

Hemp is one of the best crops we have for smothering weeds, yet weed infested soil must be properly prepared in order to give the hemp a chance.

The impression is entirely too common that quack grass and Canadian thistle lands can be cleaned by seeding them to hemp after ordinary preparation. This cannot be done. Such lands must first be thoroughly worked to subdue the weeds. Any method that will do this is satisfactory. If the land is not fertile, it should be given a heavy application of manure in the fall. Early in the spring, the soil should be worked up thoroughly and kept worked to the very time the hemp is seeded. If the quack grass or Canadian thistles are well subdued and kept under control until the hemp is planted, good results will be obtained, otherwise the weeds may choke out the hemp.

VERY LITTLE TROUBLE FROM INSECTS AND DISEASES

Hemp is rarely injured seriously by insects or fungi, but it is by no means immune. Cut-worms and white grubs destroy seedlings especially on spring-plowed sod. Grasshoppers will defoliate hemp plants along the edges of the fields which are near freshly harvested small grain crops. Borers, including the European corn borer, attack growing plants. A fungus attacking the roots, especially in wet soil, causes wilt. The greatest enemy of a hemp crop is hail.

HEMP SHOULD FOLLOW CORN OR A SOD CROP

Hemp should not be grown continuously on the same field for the same reason that corn or grain should not be so grown. It does best after corn, alfalfa, or clover. It does not follow small grain or timothy satisfactorily but may do well on good fall-plowed gluegrass sod. The usual practice is to plant the hemp after corn, followed with a small grain seeded down to clover, then the clover is followed with corn. Manure may be put on the clover sod in the fall preceding the corn.

On very fertile soils that are severely infested with weeds, hemp is occasionally grown two years in succession. When the object is to thoroughly rid the land of weeds and to lower the available nitrogen so that grain will not lodge, the practice of growing the crop two years is a good one. This should not be done, however, except on soils that are unquestionably rich.

COMMERCIAL FERTILIZERS USEFUL

Experience indicates that commercial fertilizers may be used to advantage on soils that are not well supplied with manure. Ordinarily, the best fertilizer for hemp is barnyard manure, but it is well known that commercial fertilizer can be used to advantage to supplement manure. On most soils a complete fertilizer, one containing nitrogen, phosphorous, and potassium, is most likely to give the best results. Such standard commercial fertilizers as a 3-9-18, or 3-12-12 have also been used to good advantage. The usual amount applied is around 300 pounds an acre; the use of 300 to 400 pounds an acre of 20% super-phosphate alone has also given good results on typical black prairie soils in Wisconsin. Experience indicates that it is unwise to depend upon commercial fertilizer alone to offset lack of manure or natural fertility. It is probably best not to attempt the crop on soils that will not grow hemp without using commercial fertilizer. Lime, at 3 to 4 tons an acre, may be applied on acid soils to advantage.

PREPARING THE SOIL AND SEEDING THE CROP

A good seed bed is particularly necessary for hemp. The seed bed must be uniform to produce uniform stalks. Both fall and spring plowing have been found satisfactory, but usually fall plowing seems to be best. The soil should be worked up thoroughly before planting but should be firm. A corrugated roller used just before and just after seeding will do much to put the seed bed in proper condition.

Results from seeding at different times vary in different seasons, but in the majority of years early seeding is more satisfactory. Hemp may be planted a little earlier than corn. Some plant it practically as early as oats. The usual practice is to seed hemp just after the oats are planted and before corn planting starts.

Good stands have been obtained by using either a broadcast seeder or a grain drill. The tendency, however, is toward using the drill instead of the broadcaster. If a corrugated roller is used after broadcasting, practically as good stands are obtained as with a drill. On soils that have a high proportion of clay and that are inclined to crust, broadcasting frequently gives better results. On all friable loam soils, drilling is probably the best method. A 4-inch drill is decidedly preferable to a 6-inch; an 8-inch drill should not be used. Hemp seeds should be planted not more than one inch deep.

On average hemp soils, from 4 to 5 pecks of good seed to the acre seems to give the best results. On excessively fertile soils, 5 pecks are advisable. On soils less fertile than the average, 5 pecks are sufficient. Experience indicates that less than 4 pecks is rarely advisable on any soil. Hemp seed weighs 44 pounds to the bushel, or 11 pounds to the peck. On average soils, therefore, 44 to 55 pounds to the acre is needed. On less fertile soils, 44 pounds, and on very fertile soils 55 pounds are suggested.

KENTUCKY VARIETY OF SEED

Nearly all hemp seed recommended for planting in the United States is grown in Kentucky. The seed crop is planted in hills and cultivated like corn. If the broadcast or drilled fiber crop is allowed to reach full maturity for the purpose of producing both fiber and seed, the fiber is of poor quality and considered practically worthless in this country. Hemp seed from foreign countries cannot be relied upon to produce satisfactory crops. Attempts to grow fiber crops from hemp seed of direct importation have not been very satisfactory. Most of the hemp grown in this country is from seed which is the progeny of adapted selections. In numerous tests such seed has proved decidedly superior to that from other countries.

EARLY HARVESTING DESIRABLE

Hemp should be harvested when the pollen bearing plants are in full bloom. At this stage, the lower leaves have mostly fallen and the leaves near the top are yellowing. Generally, hemp harvested early has the best season for retting, consequently it is better to harvest a little on the early side than to wait until it is too mature. So far as the quality and yield of fiber are concerned, it appears that the crop may be harvested any time between blossoming and the formation of seed. This means that there is a period of fully three weeks during which the crop may be harvested. Over-ripe hemp does not ret well and it produces a harsh fiber.

Hemp must be harvested with machines designed for the purpose. In very small fields, the self-rake reaper is used to advantage. Fields of 5 acres or more are harvested with a special hemp harvester. This machine has been used for many years and is now standard equipment in hemp producing sections. It harvests the hemp and spreads it in one operation, thus doing away with hand labor. The hemp harvester operated by a tractor will harvest from 5 to 10 acres a day.

PROPER RETTING MOST IMPORTANT

The retting of the hemp straw is the most important item in handling the crop, for the kind of retting obtained determines to a large extent the quality and value of the fiber and also the ease of preparation. The green stalks, after they are spread on the stubble, are allowed to remain there until they have been sufficiently decomposed so that the bark can be readily separated from the stems. The time required for retting varies according to weather conditions. If warm moist weather occurs just after the crop is spread, retting will be very rapid and may be complete in 10 or 15 days. If it is dry and cool, retting may be delayed until very late in the fall. Usually the early fall is moist and warm, consequently early harvesting has a distinct advantage. In unfavorable retting seasons, there is a tendency to lift the hemp before it is retted. This should not be done. The hemp should be left spread out in the field until the bark can be readily removed. It is better to leave the crop in the field even though it becomes covered with snow than to take it up when it is underretted. Except when very quick retting occurs, this straw should be turned in the field.

RETTED STRAW BOUND, SHOCKED AND STACKED

When the hemp straw is properly retted, it is lifted and bound in bundles. This is done either by hand or with a special hemp binder ("Picker"). When labor is plentiful, binding by hand is a common practice; otherwise the machine binder is used. This machine has been well developed and is used wherever hemp is grown to any considerable extent.

The bound bundles are placed in shocks a little larger than those used for corn. When the bundles are well cured they may be either stacked on the farm or hauled

to the hemp mill and stacked there. Some retting may take place in the stack and usually the fiber is more easily separated and cleaned after the straw has been in the stack a month or more.

Great care should be exercised in building stacks. They should be so constructed that each layer of bundles has a very pronounced pitch. The center should always be kept high. In lapping, but little of the butts of each layer should be exposed to the weather, as exposed parts will decompose if left long in the stack. There is too much careless stacking both on the farms and at the mills. Too much is invested in the retted straw to stack it carelessly. A little time devoted to careful stacking will remove a source of considerable loss to both hemp grower and miller.

When the retted hemp is delivered at the mill, the farmer's part of the work is completed.

RETTED STALKS PROCESSED INTO FIBER AT HEMP MILL

In the Wisconsin hemp mills, the retted straw is put through long drying kilns. This removes practically all of the moisture. The dried straw is then thoroughly crushed by a machine known as a "hemp brake." After the straw is crushed, the broken material is cleaned by brushing and combing. This process is known as "scutching," and the machine on which the work is done is known as a "hemp scutcher." The long fiber as it comes from the scutcher, is twisted into "hands", graded, and baled. This long, straight fiber is known as "line."

In scutching, a part of the fiber is brushed and combed out with the woody portion of the plant. This part of the fiber is short, tangled, and snarled, and is known as "tow." Such fiber is also produced from short or tangled stalks. The tow is cleaned and prepared for baling in a special machine.. It is not twisted into "hands" but is baled in the form in which it comes from the tow machine.

SUITABLE SOILS PRODUCE HIGH YIELDS OF HEMP

Hemp yields well under favorable conditions. On suitable soils in Wisconsin, hemp has rarely failed to produce a good crop. Yields have usually averaged around 800 to 1000 pounds of fiber per acre. The average yield of dry stalks after dew-retting as the farmer delivers them to the scutching mill is about 3 tons per acre.

HEMP NOT A PERISHABLE CROP

Hemp has a distinct advantage over many crop products in that it is not readily damaged and may be held for a long time either in the straw, or in the fiber. Hemp straw properly stacked, will keep for many months with very little loss. Baled hemp may be stored for several years without damage. The fire hazard is about the same as for baled cotton.