

What about growing **HEMP?**



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WISCONSIN farmers are the leading hemp fiber producers for America. They are using methods based on thirty years of experience and experiment in growing and handling the crop. The American navy and army needs hemp — vast amounts of it for rope, cordage and threads.

Four hemp mills are running in Wisconsin — at Markesan, Brandon, Beaver Dam, and Juneau. Although other parts of Wisconsin have soil adapted to the crop, all the hemp in the state has largely been grown around these mills.

Hemp yields well under favorable conditions. On suitable soils in the state, hemp has rarely failed to produce a good crop. Yields have usually ranged from 700 to 1000 pounds of fiber to the acre. The average yield of dry stalks after dew-retting as the farmer delivers them to the mill is from two and a half to three tons an acre.

Hemp is seeded solid in the spring; is harvested and spread out on the stubble in the early fall; the straw (stalks) is allowed to ret (partially rot) while still spread out; is picked up, bound and shocked after retting, then hauled to the processing mill where it is stacked.

What the Hemp Crop Needs

- *fertile soils*
- *plenty of moisture*
- *rotation with other crops*
- *complete fertilizers*
- *good seed bed*
- *early seeding*
- *early harvesting*
- *proper retting*

Fertile Soils — Dark prairie silt loam soils — *uniform and fertile* — are best for hemp. Reasonably level clay loams are good. A plentiful supply of organic matter is very important and thorough drainage is necessary. Not suitable are peat and other marsh lands, or sandy, gravelly and rocky soils, heavy clay soils and bottom lands.

Plenty of Moisture — Hemp will not withstand drouth and so does best on soils that do not dry out quickly. Dry areas are decidedly unsatisfactory. The stunting of hemp by dry weather results in low yields and low quality fiber. Hemp needs much the same moisture as a good crop of corn

Because hemp grows rank and luxuriant, it is often incorrectly thought that it is hard on the land, but experience shows that it has about the same effect as a good crop of corn. Hemp leaves the soil in excellent condition for crops that follow.

Hemp Should Be Rotated — Hemp should not be grown continuously on the same field for the same reason that corn or grain should not be repeated on land. It does best after corn, alfalfa, clover, or bluegrass pasture. It does not follow timothy satisfactorily, and often does not do well after small grains. 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. On very fertile soils, hemp may be grown two years in succession.

Commercial Fertilizers Useful – Barnyard manure is ordinarily the best fertilizer for hemp but commercial fertilizer can well be used to supplement six to eight loads of manure to the acre. On most soils a complete fertilizer – containing nitrogen, phosphorus, and potassium – is most likely to give the best results. Such standard commercial fertilizers as a 3-9-13, or 3-12-12 have been used to advantage. The usual amount is around 300 pounds an acre; the use of 300 to 400 pounds an acre of 20% superphosphate alone has also given good results on typical dark prairie soils in Wisconsin. *Commercial fertilizer alone will not make up for lack of manure or lack of natural fertility.* Lime, at three to four tons an acre, may well be applied on acid soils.

Seeding the Hemp Crop

Hemp Needs a Good Seed Bed – The seed bed must be well prepared. Although spring plowing will give fair results, fall plowing is best. The soil should be worked up thoroughly before planting but should also be firm. A corrugated roller used just before and just after seeding will do much to put the seed bed in proper shape. On soils that are inclined to crust, broadcasting usually gives better results than drilling.

A good field of hemp nearly ready to harvest – desirable height and thickness.



While hemp is one of the best smother crops known yet weed infested soils must be prepared so that the hemp will outgrow the weeds. Canada thistles and quack grass will choke out the hemp unless they are subdued before the hemp is planted. Any method which will put the soil in good shape and check the weeds is satisfactory. Hemp will not smother out weeds on unfertile or poorly drained soil.

On average hemp soils in the north central states, from four to six pecks of good seed to the acre seem to give best results. On very fertile soils, five to six pecks are advisable. On soils less fertile than the average, four pecks are enough but less than four pecks is rarely advisable. Hemp seed weighs 44 pounds to the bushel.

It is very important and necessary to leave an unplanted strip (turnway) all around the field. This turnway, 16 to 20 feet wide, should be left on both sides and both ends of every field. The hemp harvesting machine requires such space at the edges of the fields in order to make the first round. After the field is sown the turnways should be filled in by planting them to small grains, soybeans for hay, canning peas or a similar crop. Corn for silage, early potatoes or other early rowed crops may also be used, but thickly seeded crops, such as small grains are best because they usually prevent a rank growth of hemp around the edges of the field.

Kentucky Hemp Seed Best — All hemp seed recommended for the United States is grown in Kentucky. Hemp seed from foreign countries cannot be relied upon. Most of the hemp grown in this

Cutting and spreading hemp with modern harvester. Hemp is both cut, and spread for retting with this machine.





Retted hemp straw is picked up and bound with a special machine — the hemp picker.

country is from seed from adapted selections and has proved decidedly superior to that from other countries.

Early Seeding is Best — Results vary in different seasons but in most years early seeding is best. While some plant hemp almost as early as oats, yet the usual practice is to sow just after oats are sown and before corn planting starts. Under emergency conditions hemp may be sown as late as the first week in June.

While good stands of hemp have followed the use of a broadcast seeder, yet a grain drill is decidedly better on soils not apt to crust. The seed should be sown not more than one inch deep.

Harvesting the Hemp Crop

Early Harvesting is Best — Hemp should be harvested when the pollen bearing (male) plants are in full or late bloom. At this stage, the lower leaves have mostly fallen and the upper leaves are yellowing. Generally, hemp harvested early has the best season for retting, consequently it is better to harvest a little on the early side rather than to wait until it is too mature. So far as the quality and yield of fiber are concerned, the crop may be harvested any time in the four weeks between blossoming and early seed forming. Over-ripe hemp does not produce good quality fiber.

Hemp must be harvested with special machines. In very small fields, the self-rake reaper is used to advantage. Fields of five acres or more are cut with a special hemp harvester which is now standard equipment and is usually furnished on a rental basis by the processing mill. It harvests the hemp and spreads it in one operation. The hemp harvester operated by a tractor will harvest from 5 to 10 acres a day.

Proper Retting Important — Retting is the most important item in handling hemp for the kind of retting determines the quality and value of the fiber. The green stalks, after they are spread on the stubble by the harvesting machine, remain there until they rot enough so the fiber can be readily separated from the woody part of the stems.

The time varies with the weather. If the weather is warm and moist just after the crop is spread, retting may be complete in seven to ten days. If it is dry, retting may be delayed until very late in the fall. Usually the early fall is moist and warm, so early harvesting is best. 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 outer layer of fiber can be taken off easily. Unless very quick retting occurs, the straw should be turned over in the field during the retting period so that an even ret is obtained.

Retted Straw is Bound and Shocked — As soon as straw is properly retted, it must be lifted and bound in bundles. This is done with a special hemp binder (picker) which is supplied on a rental basis by the hemp mill.

The bound bundles are placed in shocks a little larger than those used for corn. When the bundles are well cured they are hauled to the hemp mill and stacked. Great care should be taken in building stacks as too much is invested in the retted straw to stack it carelessly. Each layer of bundles should have a pronounced pitch; and the center should always be kept high. In lapping, very little of the butts of each layer should be exposed to the weather, as such parts will decompose if left long in the stack. Hemp straw, properly stacked, will keep for many months with very little loss.

The retted and bundled hemp straw is stacked at the hemp mill — either round stacks or ricks are used.



HEMP

- gives good yield on suitable soil
 - usually not damaged by insects or diseases
 - is not "hard" on the land
 - helps to control weeds
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Hail Causes Most Damage

Hemp in the north central states is nearly free from insect damage and fungus diseases but cut worms and white grubs have caused some damage. Grasshoppers will destroy hemp leaves around the edges of fields near freshly harvested small grains. Stem borers, including the European corn borer, have been known to attack hemp plants.

But hail is the most serious enemy of growing hemp. While the total loss has been very little, yet there have been serious local losses. Wherever a hail stone strikes a growing hemp plant, a weak spot occurs, thus damaging the fiber. Hail insurance is commonly used.

Hemp Straw Must be Milled

At the hemp mill the retted straw is dried, crushed and the broken material is cleaned by brushing and combing with a hemp scutcher. The fiber comes from this machine in two forms. The long straight fiber is *line* and that is by far the most valuable. The short, tangled, snarled fiber is known as *tow*. This fiber has much less value. Hemp grown on good hemp land will generally produce around 55% line fiber and 45% tow. Hemp grown on poor hemp soil may produce nearly all tow and very little line. This is one reason why the selection of proper soils for hemp culture is extremely important.

Federal Narcotic License Necessary. All growing hemp plants contain a narcotic substance known as "marihuana". Because of this, all hemp producers and all persons possessing and transporting hemp seed shall first obtain a federal license as required under the provisions of the Marihuana Tax Act of 1937. Information is usually available from Internal Revenue Offices and from managers of hemp processing mills.

Our Armies and Allies Need Hemp

HEMP is a fiber of strategic importance to the war effort. The federal government is proposing to increase the acreage of hemp in the United States from about 13,000 to 300,000 acres. This expansion is necessary because of the critical shortage of fibers essential for military use, importations of which are now cut off.

Our principal sources of fiber for ropes and cordage have been the Philippines and the Dutch East Indies. Such supplies are no longer available.

Wisconsin has been the leading producer of hemp fiber for more than 25 years. It is expected that eight new hemp mills will be established in Wisconsin and that there will be a total of about 40,000 acres in the state in 1943.

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