

**JESSE VENTURA'S
MARIJUANA MANIFESTO**

**BY JESSE VENTURA
WITH JEN HOBBS**

Studies

Cannabis kills tumor cells

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1576089>

<http://www.ncbi.nlm.nih.gov/pubmed/20090845>

<http://www.ncbi.nlm.nih.gov/pubmed/616322>

<http://www.ncbi.nlm.nih.gov/pubmed/14640910>

<http://www.ncbi.nlm.nih.gov/pubmed/19480992>

<http://www.ncbi.nlm.nih.gov/pubmed/15275820>

<http://www.ncbi.nlm.nih.gov/pubmed/15638794>

<http://www.ncbi.nlm.nih.gov/pubmed/14617682>

<http://www.ncbi.nlm.nih.gov/pubmed/17342320>

<http://www.ncbi.nlm.nih.gov/pubmed/16818650>

<http://www.ncbi.nlm.nih.gov/pubmed/17952650>

<http://www.ncbi.nlm.nih.gov/pubmed/20307616>

<http://www.ncbi.nlm.nih.gov/pubmed/16616335>

<http://www.ncbi.nlm.nih.gov/pubmed/16624285>

<http://www.ncbi.nlm.nih.gov/pubmed/10700234>

<http://www.ncbi.nlm.nih.gov/pubmed/17675107>

<http://www.ncbi.nlm.nih.gov/pubmed/16893424>

<http://www.ncbi.nlm.nih.gov/pubmed/15026328>

Studies (*continued*)

Uterine, testicular, and pancreatic cancers

<http://www.cancer.gov/cancertopics/pdq/cam/cannabis/healthprofessional/page4>
<http://www.ncbi.nlm.nih.gov/pubmed/20925645>

Brain cancer

<http://www.ncbi.nlm.nih.gov/pubmed/11479216>

Mouth and throat cancer

<http://www.ncbi.nlm.nih.gov/pubmed/20516734>

Breast cancer

<http://www.ncbi.nlm.nih.gov/pubmed/18454173>
<http://www.ncbi.nlm.nih.gov/pubmed/16728591>
<http://www.ncbi.nlm.nih.gov/pubmed/9653194>

Lung cancer

<http://www.ncbi.nlm.nih.gov/pubmed/25069049>
<http://www.ncbi.nlm.nih.gov/pubmed/22198381>
<http://www.ncbi.nlm.nih.gov/pubmed/21097714>

Prostate cancer

| | |
|---|---|
| http://www.ncbi.nlm.nih.gov/pubmed/12746841 | http://www.ncbi.nlm.nih.gov/pubmed/15753356 |
| http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3339795/ | http://www.ncbi.nlm.nih.gov/pubmed/10570948 |
| http://www.ncbi.nlm.nih.gov/pubmed/22594963 | http://www.ncbi.nlm.nih.gov/pubmed/19690545 |

Blood cancer

<http://www.ncbi.nlm.nih.gov/pubmed/12091357>
<http://www.ncbi.nlm.nih.gov/pubmed/16908594>

Studies (*continued*)

Skin cancer

<http://www.ncbi.nlm.nih.gov/pubmed/12511587>

<http://www.ncbi.nlm.nih.gov/pubmed/19608284>

Liver cancer

<http://www.ncbi.nlm.nih.gov/pubmed/21475304>

Cannabis cancer cures (general)

<http://www.ncbi.nlm.nih.gov/pubmed/12514108>

<http://www.ncbi.nlm.nih.gov/pubmed/12182964>

<http://www.ncbi.nlm.nih.gov/pubmed/15313899>

<http://www.ncbi.nlm.nih.gov/pubmed/19442435>

<http://www.ncbi.nlm.nih.gov/pubmed/20053780>

<http://www.ncbi.nlm.nih.gov/pubmed/12723496>

<http://www.ncbi.nlm.nih.gov/pubmed/18199524>

<http://www.ncbi.nlm.nih.gov/pubmed/16250836>

<http://www.ncbi.nlm.nih.gov/pubmed/19589225>

<http://www.ncbi.nlm.nih.gov/pubmed/17237277>

Cancers of the head and neck

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2277494>

Cholangiocarcinoma cancer

<http://www.ncbi.nlm.nih.gov/pubmed/19916793>

<http://www.ncbi.nlm.nih.gov/pubmed/21115947>

Leukemia

<http://www.ncbi.nlm.nih.gov/pubmed/15454482>

<http://www.ncbi.nlm.nih.gov/pubmed/16139274>

<http://www.ncbi.nlm.nih.gov/pubmed/14692532>

Partial or full cannabis-induced cancer cell death

<http://www.ncbi.nlm.nih.gov/pubmed/12130702>

<http://www.ncbi.nlm.nih.gov/pubmed/19457575>

Studies (*continued*)

| | |
|---|---|
| http://www.ncbi.nlm.nih.gov/pubmed/18615640 | http://www.ncbi.nlm.nih.gov/pubmed/20336665 |
| http://www.ncbi.nlm.nih.gov/pubmed/17931597 | http://www.ncbi.nlm.nih.gov/pubmed/19394652 |
| http://www.ncbi.nlm.nih.gov/pubmed/18438336 | http://www.ncbi.nlm.nih.gov/pubmed/11106791 |
| http://www.ncbi.nlm.nih.gov/pubmed/19916793 | http://www.ncbi.nlm.nih.gov/pubmed/19189659 |
| http://www.ncbi.nlm.nih.gov/pubmed/18387516 | http://www.ncbi.nlm.nih.gov/pubmed/16500647 |
| http://www.ncbi.nlm.nih.gov/pubmed/15453094 | http://www.ncbi.nlm.nih.gov/pubmed/19539619 |
| http://www.ncbi.nlm.nih.gov/pubmed/19229996 | http://www.ncbi.nlm.nih.gov/pubmed/19059457 |
| http://www.ncbi.nlm.nih.gov/pubmed/9771884 | http://www.ncbi.nlm.nih.gov/pubmed/16909207 |
| http://www.ncbi.nlm.nih.gov/pubmed/18339876 | http://www.ncbi.nlm.nih.gov/pubmed/18088200 |
| http://www.ncbi.nlm.nih.gov/pubmed/12133838 | http://www.ncbi.nlm.nih.gov/pubmed/10913156 |
| http://www.ncbi.nlm.nih.gov/pubmed/16596790 | http://www.ncbi.nlm.nih.gov/pubmed/18354058 |
| http://www.ncbi.nlm.nih.gov/pubmed/11269508 | http://www.ncbi.nlm.nih.gov/pubmed/19189054 |
| http://www.ncbi.nlm.nih.gov/pubmed/15958274 | http://www.ncbi.nlm.nih.gov/pubmed/17934890 |
| http://www.ncbi.nlm.nih.gov/pubmed/19425170 | http://www.ncbi.nlm.nih.gov/pubmed/16571653 |
| http://www.ncbi.nlm.nih.gov/pubmed/17202146 | http://www.ncbi.nlm.nih.gov/pubmed/19889794 |
| http://www.ncbi.nlm.nih.gov/pubmed/11903061 | http://www.ncbi.nlm.nih.gov/pubmed/15361550 |
| http://www.ncbi.nlm.nih.gov/pubmed/15451022 | |

Studies (*continued*)

Translocation-positive rhabdomyosarcoma

<http://www.ncbi.nlm.nih.gov/pubmed/19509271>

Lymphoma

<http://www.ncbi.nlm.nih.gov/pubmed/18546271>

<http://www.ncbi.nlm.nih.gov/pubmed/16337199>

<http://www.ncbi.nlm.nih.gov/pubmed/16936228>

<http://www.ncbi.nlm.nih.gov/pubmed/19609004>

Cannabis kills cancer cells

<http://www.ncbi.nlm.nih.gov/pubmed/16818634>

<http://www.ncbi.nlm.nih.gov/pubmed/17952650>

<http://www.ncbi.nlm.nih.gov/pubmed/12648025>

<http://www.ncbi.nlm.nih.gov/pubmed/16835997>

Melanoma

<http://www.ncbi.nlm.nih.gov/pubmed/17065222>

Thyroid carcinoma

<http://www.ncbi.nlm.nih.gov/pubmed/18197164>

Colon cancer

<http://www.ncbi.nlm.nih.gov/pubmed/18938775>

<http://www.ncbi.nlm.nih.gov/pubmed/19047095>

Intestinal inflammation and cancer

<http://www.ncbi.nlm.nih.gov/pubmed/19442536>

Cannabinoids in health and disease

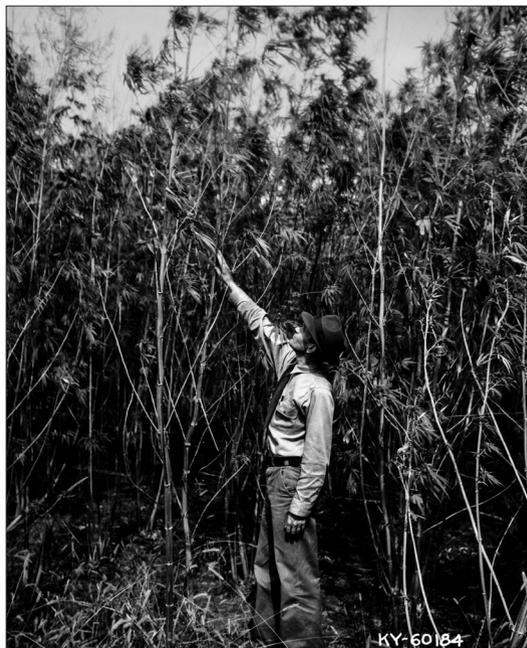
<http://www.ncbi.nlm.nih.gov/pubmed/18286801>

Cannabis inhibits cancer cell invasion

<http://www.ncbi.nlm.nih.gov/pubmed/19914218>



Photos: "Hemp for Victory" Campaign



Hemp grown for seed, not fiber, on the farm of Patterson Moore, Georgetown, KY. During the growing season, after pollination, the male stalks are cut out, leaving only the female, or seed-bearing stalks standing. This is the 1940s process of gathering nutritious hemp seed, or most likely, this is the process used to gather hemp seed for more industrial hemp production.

(Credit: Courtesy of the National Archives, photo taken Sept. 1942)

Step one of harvesting hemp for seed on the farm of Patterson Moore. The hemp on this farm has been harvested by an old fashioned reaper that leaves the hemp in bunches on the ground. These bunches are then spread by hand so the hemp can dry before being placed into stacks.

(Credit: Courtesy of the National Archives)



Photos: "Hemp for Victory" Campaign (*continued*)

Next 3 photos: On another farm in Lexington, KY, the hemp stalks are cut by hand, then placed in bunches on a canvas sheet. The seed is then threshed out of the plant by hand with flails.
(Credit: Courtesy of the National Archives, photos taken October, 1942)



Photos: "Hemp for Victory" Campaign (*continued*)



Hemp grown for fiber production. Hemp is seeded with a common grain drill. If a drill especially designed for seeding hemp is not available, many fiber growers double drill to obtain a better distribution of seed.

(Courtesy of the National Archives, taken April, 1942.)



Photos: "Hemp for Victory" Campaign (*continued*)



Harvesting hemp on the farm of Brooks Barnes, Winchester, KY with a hemp harvester that cuts and automatically spreads the stalks on the ground. This is the standard type of harvester used in the northern part of the Corn Belt. It is not adapted for use in most Kentucky farms because Kentucky hemp grows tall, and if it is spread immediately, it may sun scald (weakening the fiber) due to Kentucky's climate.

(Credit: Courtesy of the National Archives, taken Sept. 1942.)



FARMERS' BULLETIN No. 1935
U. S. DEPARTMENT OF AGRICULTURE

Caution

THE HEMP PLANT contains the drug marihuana. Any farmer planning to grow hemp must comply with certain regulations of the Marihuana Tax Act of 1937. This involves registration with the farmer's nearest Internal Revenue Collector and the payment of a fee of \$1. Although the fee is small, the registration is mandatory and should not be neglected, as the penalty provisions for not complying with the regulations are very severe. The registration must be renewed each year beginning July 1. This so-called "license" permits a farmer to plant and grow hemp seed from a registered firm dealing in hemp, to plant and grow the crop, and to deliver mature, retted hemp stalks to a hemp mill.

Washington, D. C.

Issued January 1943
Slightly Revised April 1952

HEMP

By B. B. ROBINSON, Senior Agronomist

Division of Cotton and Other Fiber Crops and Diseases
Bureau of Plant Industry, Soils, and Agricultural Engineering
Agricultural Research Administration

HEMP is a fiber used in making twines and light cordage. It is also used as an extender for imported cordage fibers, particularly abaca, sisal, and henequen, when supplies of these are not adequate to meet domestic demands. The size of the hemp industry, therefore, is greatly influenced by the availability of imported cordage fibers.

Hemp is not a hard crop to grow. It should be planted on the most productive land on the farm—land that would make 50 to 70 bushels of corn per acre.

The crop is planted with a grain drill and harvested with special machinery rented from hemp mills.

It is allowed to lie on the ground until the outer part of the stalks has rotted, freeing the fibers. This process is called dew retting.

The most important step in hemp farming is to stop the retting process at the proper time. (See pp. 12 and 13.)

This bulletin tells how to grow and harvest hemp. For more information write to the Bureau of Plant Industry, Soils, and Agricultural Engineering, United States Department of Agriculture, or to your State experiment station, or consult your county agent.

What it is

Hemp is an annual plant that grows from seed each year, and therefore it can be brought readily into production. It produces twice as much fiber per acre as flax, the only other fiber that is its equal in strength and durability and that is known to be suitable for culture and preparation on machinery in this country.

When hemp seed is sown thickly for fiber production, the plants usually grow from 5 to 8 feet tall. However, when the plants are thinly spaced in rows for seed production, they may, under favorable conditions, reach a height of 12 to 16 feet. If the plants are not crowded, they become much branched and are bushy. Uniform stems approximately $\frac{3}{4}$ inch in diameter and 5 to 8 feet long are especially desired for fiber production, because they can be handled well by the harvesting and processing machinery available in this country.

Hemp is a dioecious plant, that is, the staminate (male) and pis-



tillate (female) flowers are borne on separate plants, rather than both on one plant. The flowers of the two types of plants are different, but the male plant is easily distinguished from the female, as the anthers are about the size of a wheat kernel. The male plants die soon after discharging their pollen; this is usually about 3 to 5 weeks before the female plants mature seed and die.

The fiber of commerce ranges from 4 to 8 feet in length and has the appearance of a flat, fine ribbon. It lies very close to the epidermis or skin of the plant. Spinners desire the fiber ribbon $\frac{1}{16}$ inch or less in width. The long strands of fiber are called "line" fiber to distinguish them from "tow" fiber, which consists of shorter, broken, tangled pieces.

It grows well in the Corn Belt

Hemp is recommended as a good crop for the Corn Belt States, because of their favorable climatic and soil conditions.

Most fiber-producing varieties of hemp require a frost-free growing season of 5 months or longer to produce seed and approximately 4 months for fiber production. Hemp will endure light frosts in the spring and survive frosts in the fall better than corn. It grows best when well supplied with moisture throughout its growing season and especially in its early stages of growth. Drought conditions, if accompanied by high temperatures, appear to hasten maturity before the plants are fully grown.

The vegetative growth of hemp should be uniform. This growth is noticeably affected if the soil is flooded or saturated with moisture for too long a period. The leaves turn yellow, and the plants die. Rainfall, well distributed during the growing season, is, therefore, desirable for uniform vegetative growth. Hemp should be planted only on well-drained soils and not on flat, heavy, impervious soils. Climate is important not only in the growth of the plant but also in the preparation of the crop after harvest. It influences the method used in handling the crop and the labor requirements, which determine the cost of production. In the United States the common

Hemp for Victory Brochure (continued)

practice (known as dew retting) is to cut the crop and let it lie on the ground. Exposure to the weather causes the fiber in the outer part of the stem to separate. Light frosts and alternate freezing and thawing seem to improve or make the retting more uniform.

How to grow it

Soils and Fertilizers

Hemp should not be grown on poor soils. To obtain good yields and fiber of high quality, it is necessary to have a growth of uniform stalks 6 to 8 feet long. Short stalks, from poor nonfertile soils, seldom produce a high-quality fiber.

Fiber hemp grows successfully on soils of the Clarion, Tama, Carrington, Maury, Hagerstown, and Miami series, which, in general, are deep, medium-heavy loams, well-drained, and high in organic matter. Artificially drained areas of the Webster, Brookston, and Maumee series also give satisfactory yields. These soils are among the most productive soils of the Corn Belt. They produce average yields of 50 to 70 bushels or more of corn per acre. If land will not produce from 50 to 70 bushels of corn per acre, it should not be planted to hemp for fiber production.

Muck or peat soils are not recommended for the production of high-quality hemp fiber. The quantity of fiber produced per acre on these soils may be very high, but experience has demonstrated that the fiber lacks strength, which is the first requirement of hemp fiber for good cordage.

The inexperienced farmer usually gets advice from an experienced hemp-mill superintendent in the selection of the right soil. In fact, the farmer's contract to grow hemp usually specifies the exact field that it has been mutually agreed should be used for the hemp crop. This type of supervision by the company contracting for hemp has helped to prevent many crop failures.

Hemp should not be grown continuously on the same soil, for the same reasons that many other crops are not adapted to such practices. In Wisconsin, fields previously used for a cultivated crop are selected for hemp planting in preference to ones upon which small grains have been grown. In Kentucky, bluegrass soil, if obtainable, is selected. Old pastures plowed up are well suited for hemp culture. Fields previously cropped to soybeans, alfalfa, and clover are excellent for hemp. A good rotation is to follow corn with hemp, and in Kentucky a fall cereal may follow the hemp.

Although hemp requires a rich soil, it does not remove from the farm an excess of plant-food material. Nearly all the leaves on the hemp plants, containing much of the plant nutrients removed from the soil, fall off during the growth and maturing of the plant. The remaining leaves may drop off in the field during the process of retting. Further, the plant stems lose about 20 percent in weight of soluble and decomposed materials, which leach out upon the fields, and the stubble may be plowed under. The plant in this manner returns to the land a large part of the plant nutrients that it removes during its growth.

Commercial fertilizers may be used to advantage on soils that are not well supplied with organic matter. Ordinarily, the best fertil-

5

izer for hemp is barnyard manure, but commercial fertilizer can be used to advantage to supplement manure. Lime applications may be supplied on acid soils to advantage. Consult your county agent for recommendations as to amounts of fertilizer and lime to apply.

Seed

The period of flowering of the hemp plant may extend over several weeks, and as a result the seed does not all mature at one time. Hemp seed for sowing frequently contains some immature green to yellowish-green seeds that may not germinate well. Good hemp seed for sowing should be relatively free of such seeds and should germinate 90 percent or better. As the oil content of hemp seed usually ranges between 29 and 34 percent, the seed should be kept cool and dry, as it spoils rapidly under warm and damp conditions. Hemp seed seldom retains its germinating power well enough to be used for seed after 2-years' storage.

When to Plant

Hemp should be planted in the spring just before corn. In a program calling for small spring grains and corn, the farmer should plan to plant his hemp between the time he plants his small grains and the corn.

Seeding

Hemp grown for seed production should be sown in rows or hills. The hills are commonly spaced 5 by 5 feet, with 6 to 10 seeds to the hill, planted not more than ½ inch deep. The plants are thinned to 3 to 5 to a hill. If care is taken to save seed, about ½ pound will sow an acre. Most farmers use more seed, and frequently the crop is replanted because of late floods or failure to obtain good stands.

Hemp grown for fiber should be sown with a broadcast seeder or with a grain drill. A drill with 4 inches between drill tubes is preferred to one with 6 inches or more. The seed should not be planted deeper than 1 inch, and a depth of ½ inch is preferred. If the seed is planted deep, the hemp seedling is not capable of pushing its way to the surface of the ground. A slight crust on the ground frequently results in a poor stand. If the seedbed is loose, disks on a seed drill may cut too deep into the soil and the seed will be sown more than 1 inch deep. In such cases, to make certain that the disks do not cut too deep into the seedbed, they should be tied to the seed box.

A standard bushel of hempseed weighs 44 pounds. The rate of seeding hemp for fiber production ranges between 3 and 5 pecks of seed per acre. In Kentucky, where hemp is hand-broken, it has been the practice to sow 3 pecks (33 pounds) per acre. However, when the hemp is to go to the mill, 1 bushel per acre gives a product that is better suited to milling. Wisconsin and other Corn Belt farmers have commonly sown 5 pecks per acre. The lighter rate of seeding in Kentucky produces larger stalks. These stalks are easily broken, and the fiber is easily prepared by the hand-breaking methods that have been used there since colonial days. Machine methods of breaking and scutching to prepare the fiber are used in Wisconsin, and

6



recently to some extent in Kentucky. The machines will handle finer stems, and the sowing of 5 pecks is advisable where hemp is to be prepared by machine.

A good practice in planting hemp for fiber production is to sow around the edge of the field next to the fence a 16- to 18-foot width of small grains, which may be harvested before the hemp. Space is thus provided for the harvester to enter the field and begin cutting without injuring the hemp. It also prevents hemp plants at the edge from growing too rank. Uniform plants are necessary for uniform fiber quality.

Culture

Fall plowing in Wisconsin gives better results with hemp than spring plowing.

Hemp for fiber production requires little or no cultivation or care after planting until the harvest; but if, after seeding and before the seedlings emerge, the ground crusts badly it may be advisable to roll the field to break the crust. Hemp for seed production should be cultivated the same as corn; that is, sufficiently to keep back the weeds. Spudding out Canada thistles where they appear in dense stands in hemp fields should be done when the hemp is only a few inches high. In most cases hemp will compete well with weeds, if the hemp gets off to a good start.

Varieties to grow

The fiber hemp grown in the United States by the early colonists was of European origin; but our present hemp, commonly known as Kentucky or domestic hemp, is of Chinese origin. Few importations of hempseed have been made in recent years for commercial plantings, as imported seed has not proved as productive under domestic conditions as Kentucky hemp.

7

Enemies

In the United States there are no hemp diseases of economic importance, and hemp has not been seriously attacked by insects. The European corn borer and similar stem-boring insects occasionally kill a hemp stem. However, they have not proved important, perhaps because hemp has not been grown to any extent in the sections of the United States where the European corn borer is a serious pest. Seedling plants are frequently attacked by cutworms and white grubs after spring plowing of soil land.

Broom rape is a small weed 6 to 15 inches high that is parasitic on the roots of hemp, tobacco, and tomatoes. It usually grows in clumps and has purple flowers, which produce many very small seeds. These adhere to the waxy flower parts surrounding the hempseed and are distributed in this manner. Broom rape can be very serious on hemp if proper control measures are not followed. Only well-cleaned hempseed and seed from fields containing no broom rape should be sown.

Hemp has been recommended as a weed-control crop. Its dense, tall growth helps to kill out many common weeds. The noxious bindweed, a member of the morning-glory family, is checked to some extent by hemp. Unfortunately, bindweed and several other species of morning-glory have seeds so near the same size and weight of hemp seed that mixtures obtained in producing hempseed are carried to the field planted for fiber production. In growing hemp for seed all vine weeds of this type found on the hemp stalks should be removed before the hemp plants begin to produce seed.

Time to Harvest

Harvesting

Hemp is harvested for seed production when the plant on being shaken sheds most of its seed. This occurs when the seeds are fully mature on the middle branches. The seeds will mature on the lower branches first and on the top of the plant last. The common method



8

Hemp for Victory Brochure (continued)

of harvesting hemp for seed production is to cut it by hand and shock it to permit more seed to mature and cure before threshing. The harvesting should be in the early morning or on damp days when the seeds do not shatter so much as they do in the warmer and drier part of the day. Threshing of the seed hemp should be done on dry afternoons. In threshing, the seed shocks should be placed on large canvas cloths 24 by 24 feet and then be beaten with long sticks to remove the seed.

Hemp is harvested for fiber production when the male plants are in full flower and are shedding pollen. By harvesting before the male plants die, the retting of both male and female plants is more uniform, as both types of plants are still green and growing. The harvesting period may extend for 2 weeks or longer. Very early harvested hemp may produce a finer and softer fiber than that harvested later, but it is usually weaker. The fiber from hemp that has been harvested so late that many seeds have matured does not possess so good cordage and textile characteristics as fiber from hemp harvested earlier. Hemp stalks should be relatively free of leaves except a few at the very top before harvesting. This is important when hemp is shocked after harvest, as it makes the top of the shock smaller so that less rain can enter the shock.

Machinery

Harvesting methods vary with locality and climate. In Kentucky, hemp may grow to a height of 15 feet or more. These long stalks are difficult to handle with machinery. Self-rake reapers (see below) have been used in harvesting hemp for many years, and they probably do better work with very tall hemp than any other machine now available. A modified rice binder, which cuts and



9



binds the hemp into bundles, is also available, although difficulty in handling the very tall hemp may be experienced. This latter type of machine can be used for short hemp in areas, such as Kentucky, where hemp must be shocked within a few days after harvest to avoid sunburn.

In the northern part of the Corn Belt the hemp usually does not grow so tall and therefore can be handled more easily with machines. During the first World War hemp-harvesting machinery was developed. These harvesters (see above) in one operation cut an 8- or 9-foot swath and elevate the stalks to a quarter-circle platform where they are turned automatically and dropped or spread on the ground for retting. The butts of the stems all lie in the same direction and are relatively even. The thickness of the layer of stalks in the swath influences the speed and uniformity of the dew retting. Machines of this type, because of their labor economy, are recommended for use in the Northern States, where hemp can be safely spread for retting when harvested.

Hemp harvesters are usually owned by the hemp mills. They are rented to the individual farmers, who usually furnish the motive power and the labor to run the harvesters.

Retting

Retting is the partial rotting of the hemp stalk. It permits the fiber in the stalk to separate easily in long strands from the woody core. The fiber strands break if unretted stems are bent or broken. In this country the usual practice is to ret hemp by allowing it to lie on the ground, where it is exposed to rain and dew. This method is called dew retting.

Dew retting is dependent upon dews and rains to furnish the moist conditions necessary for the growth of the molds that cause the retting. In warm, moist weather the retting may require 1 to 2 weeks, but usually 4 to 5 weeks is required for retting in Kentucky and Wisconsin. Hemp has remained spread under snow in Wisconsin until spring without serious injury, but more often hemp left under snow all winter is overretted and ruined.

10

Underretting and Overretting

If hemp stalks are lifted from the ground before they are sufficiently retted, the fiber will not separate easily from the woody burls (small pieces of the woody core of the plant) in milling. However, if the retting is permitted to go too far, the fiber separates very readily from the core, but the adhesive substance between the individual fiber cells in the long strand breaks down and the fiber is weak. Hemp further overretted produces mostly short broken strands of fiber called tow fiber, which is less valuable than the long parallel strands of fiber called line fiber.

Nowhere in the growing or processing of hemp is good judgment more needed than in determining the time to end the ret. Experience and good judgment are necessary to determine just when the hemp stalks should be lifted from the field and banded. The lifting and shocking stops the retting action. The value of the fiber can be cut in half or entirely lost by several days' overretting in warm weather.

Sunburning

In Kentucky, hemp spread immediately to ret after harvest is apt to sunburn, or sunscald. It is common belief that the hot, bright days in August and September in some way cause deterioration of the fiber if spread for retting. Sunburned fiber is uneven in color, usually has less strength, and possibly is drier and more harsh than fiber not sunburned. In order to avoid sunscalding, the hemp is shocked after being harvested and not spread for retting until the cooler days of November. In locations having climatic conditions similar to those prevailing in Wisconsin, sunscald of hemp is rare.

Turning Stalks

In dew retting the spread stalks should be turned once or more during the retting period. This aids in bleaching the stalks and results in fiber of more uniform color and quality. The turning is



11



WELL RETTED



WELL RETTED



UNRETTED



UNRETTED

done by workmen using bent poles approximately 8 to 10 feet in length. The poles are pushed under the head ends of stalks in the swath, and the stalks are turned over without moving the butt ends.

In turning the straw the workmen start in the middle of the field, turning the first swath into vacant center space. The second swath will be turned to lie where the first swath had been, and so on.

Care should be exercised in turning to prevent the stalks from tangling. The more hemp is handled, the more tangled the stalks may become. Tangled hemp is more difficult to process and produces a high proportion of tangled, short, tow fiber.

Testing the End Point of the Ret

A few days too long in the field may make the difference between retting and rotting. Therefore, it is most important that inexperienced farmers obtain the assistance of the hemp-mill superintendent or an experienced grower in determining when to stop the retting.

Dry hemp stalks should be tested when possible to determine the degree of retting. Three to six stalks are taken in both hands and bent back and forth to perform the break test. If properly retted, the fiber should not break when the woody core breaks. The burds should fall free of the fiber in the breaking and shaking between one's hands. If the hemp is only partly retted, some burds will adhere to the loosened fiber. Unretted hemp fiber is usually green or light yellow. Dew-retted hemp is usually slate gray or black.

After the fiber is broken free, its strength should be tested by break-

12

Hemp for Victory Brochure (continued)

ing a small strand between the fingers. A small strand of fiber not twisted and about $\frac{3}{16}$ inch wide should break with great difficulty and with a decided snap. If it is very weak and breaks with little or no snap the hemp is probably badly overretted or may have been grown under unfavorable cultural conditions. (See p. 5.)

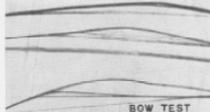
An indication that the retting end point is near is that the hemp makes "hoestrings." In a small percentage of the stems, less

than 1 to 5 percent under certain conditions, the middle of the stalks appears to ret first. The fiber comes free from the middle and forms a string fastened at the top and bottom of the stem, not unlike a bowstring. If bowstring stems are found, a sample of the hemp should be taken to the hemp-mill superintendent as soon as possible for verification of the retting end point. The bowstring condition is only a supplementary aid in determining when to stop the retting, and it may or may not occur in improperly dew-retted hemp.

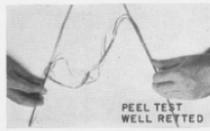
Some experienced hemp producers use the peeling test for determining the degree of retting. This is accomplished by peeling the fiber away from the butt ends of the stems. If properly retted, the fiber should peel freely from the woody core of the stem. If the hemp is not sufficiently retted, the fiber will break after a few inches have been peeled. This free-peeling stage is desirable for breaking hemp on hand breaks. Where hemp is to be processed by machinery the retting need not progress quite so far as is necessary for hand breaking.



STRENGTH TEST



BOW TEST



PEEL TEST
WELL RETTED



PEEL TEST
UNRETTED

13



Picking Up the Retted Stalks

Hemp stalks may be picked up by hand. This method has been used from early times and is satisfactory where labor is plentiful. However, in this country it is being replaced by machine pick-up binders.

In picking up the straw by hand, small sticks about 3 feet long with a single steel or wooden hook on the end are used. The hemp is raked into bunches with these implements, and usually tied. Hemp-fiber bands are used in tying the bundles. An inexpensive "buck" (see above) may be used to bunch the hemp, or it may be bunched with a pitchfork.

The most efficient method is to use the pick-up binder. These machines, drawn by tractors, cover about an acre an hour. They



14



pick up the retted hemp stalks and tie them into bundles in one operation. The machines are part of the modern hemp-mill equipment and are rented to farmers.

Dew-retted hemp is usually shocked after being picked up. The hemp remains in the shock until it is transported to the mill.

Extra Care Insures Extra Profits

The farmer's job is done when he delivers the hemp to the mill. All further processing to prepare the fiber is part of the milling operation. However, it is of interest to both farmers and mill operators to attempt to keep the hemp stalks and fiber well batted. This means keeping the butt ends of the stalks or fiber in a bundle all even. Every time the hemp stalks are handled, care should be taken to see that this is done. If the hemp stalks are well batted in the bundle when processed the milling operations can be carried out more economically. Tangled, uneven bundles are more difficult and require more time to handle. The yield of high-value long-life fiber is much greater if the stalks are well batted.

Hemp stalks are considered most desirable if they are less than half an inch in diameter. The thickness of a pencil is frequently used to illustrate the size of desirable stalks. The larger diameter stalks have a lower percentage of fiber than finer stems, are harder to break, and produce more low fiber.

Hemp stalks grown on unproductive soil usually contain a lower percentage of fiber, and this fiber may be coarse, harsh, and of low strength, so that it breaks into tow in milling.

Stalks underretted frequently must be run through the mill breaker a second or third time to remove the remaining burds. This increases the milling labor costs, and the resultant fiber may be reduced to a low grade. On the other hand, overretted hemp must be milled as little as possible, with less pressure exerted on the rollers and a slower speed of the scutcher wheel to keep from making an excess amount of tow fiber.

15

Yields

Hemp yields have been extremely variable when this crop has been planted in new areas by inexperienced farmers. In Wisconsin and Kentucky, where only experienced farmers have grown the crop in recent years, the yields have not varied a great deal. The crop has been reasonably dependable and has not often been injured by storms or droughts.

The average yields per acre for experienced farmers are approximately $2\frac{1}{4}$ to $2\frac{1}{2}$ tons of air-dry retted hemp stalks; 850 pounds total fiber. Under the Wisconsin machine-milling system the yields may average 450 pounds line fiber and 400 pounds tow fiber; under the Kentucky hand-breaking system they may average 775 pounds Kentucky rough and 75 pounds tow.

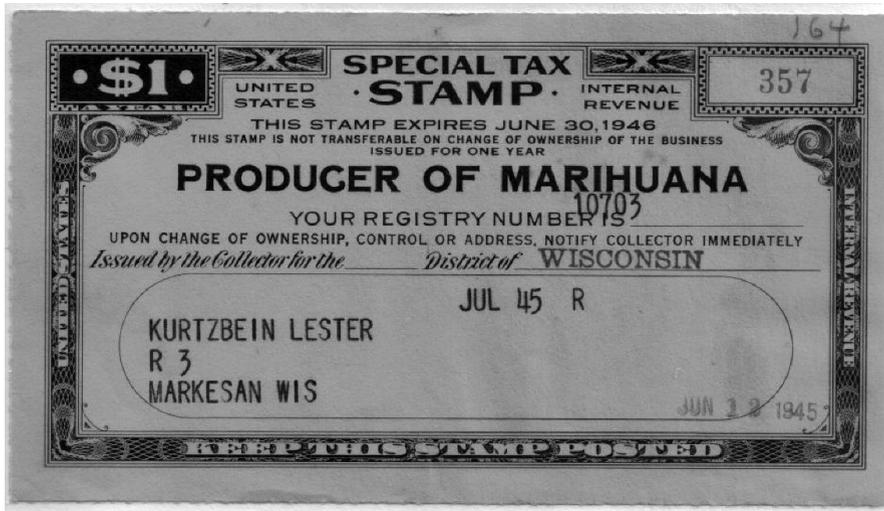
If hemp is planted for seed production, the average yields per acre are approximately 15 bushels or 660 pounds, on bottom land, and 12 bushels on uplands.

16

U. S. GOVERNMENT PRINTING OFFICE: 1942

For sale by the Superintendent of Documents, U. S. Government Printing Office Washington, D. C. - Price 10 cents

A United States Special Tax Stamp Issued
for a Producer of Marihuana in July 1945



credit: Public domain

20

Cooking with Cannabis—Hemp and Marijuana

People have been cooking and baking with hemp and marijuana for centuries. Ever since states have legalized marijuana in some form, marijuana dispensaries have been selling food with CBD, THC, and hemp. Food containing CBD and/or THC is referred to as edibles—and you can get just about anything with CBD and/or THC in it. There are even restaurants that cook with cannabis and cater to medical marijuana patients. What many people might find surprising is that different strains of marijuana have different effects. For instance, if you have chronic pain, there are certain strains that target that pain better than others.

So why would you eat your medicine instead of smoke it? Some people just don't like smoking, but whatever the personal preference, the effects from smoking and eating marijuana are different. When a person eats marijuana, the effects are typically stronger and felt for a longer period of time. This is because of the process of digestion. Our livers metabolize cannabis by turning delta-9 THC into 11-hydroxy-THC.¹ When this happens, 11-hydroxy-THC passes the blood-brain barrier more rapidly and there's a stronger effect than what is felt when a person smokes or vaporizes cannabis. Essentially, because the liver doesn't get involved when marijuana is smoked or vaped, the effects are not the same.

When someone smokes marijuana, the effects kick in much faster, and a person can feel the sensation in a matter of minutes, if not seconds. With each

JESSE VENTURA'S MARIJUANA MANIFESTO

puff, the body receives more THC at a faster and higher concentration. The “peak” concentration from THC can happen in five to ten minutes. However, as I mentioned earlier, when a person eats marijuana, it takes longer for the medication to kick in but the effects last much longer. Ingested THC can kick in at thirty minutes or it can hit you two hours later, and it can last for six to ten hours.² Meanwhile, a person would have to smoke much more throughout the day to sustain the edible effects of THC.

When it comes to figuring out a recommended dosage, smoking marijuana is much easier to measure. The effects are almost instant, and even a person smokes a little too much, the effects wear off more quickly than if a person ingests marijuana, so it's easier to compensate. Most dispensaries state the ratio of THC and CBD in the strains of marijuana they sell, so the customer has a general sense of how much or how little to smoke at one time, and how to gradually increase the dosage if necessary, depending on how much THC is in a particular bud of weed.

The problem with edibles is that the concentration isn't always standardized. Most edibles are made from leftover scraps, so there can be several different types of strains in one edible. Since each strain of marijuana has different levels of THC, it's difficult to judge the exact dosage in each edible—especially since the effects don't kick in for quite some time. Most people tend to overestimate the dose because of this reason. However, if you come across an edible made with cannabis oil from the buds of the marijuana plant, that edible is much more potent than one made from scraps.

Marijuana dispensaries are now trying to standardize edibles as much as they can by listing serving suggestions. For example, 10 mg of THC or CBD is considered a standard dose that delivers mild effects.³ A cookie typically has much more THC than 10 mg, so a serving suggestion could be to eat a quarter of the cookie at a time and monitor the results. Even so, each batch of cookies—and each cookie—could be a slightly different dosage depending on what weed is being used. Remember, each strain has a general percentage of THC, but depending on where the plant was grown and what kind of nutrients the plant received, each plant can contain a slightly different amount of THC. It's very difficult (and expensive) to test each batch of cookies to find out exactly how many milligrams of THC is in each one.

Plus, THC affects everyone differently in general. One person might not feel much of an effect from 10 mg of THC and another person might feel a

JESSE VENTURA

psychedelic buzz. The same goes for CBD. That's why some people take 2 drops of CBD per day to manage seizures and some people have to take more. Not to go too much off topic, but it always amazes me that pharmaceutical drugs and over the counter drugs have the same dosage for everyone. If you're an adult and you have a headache, you take two pills. It doesn't matter your age, your weight, if you're a woman or a man. Meanwhile, we know that everyone's body is different—some people have more body fat percentage than others—and these pills do affect everyone differently. It's no secret that men and women have different metabolisms. For example, the FDA has done many studies that prove women respond differently than men to aspirin, sleeping pills, and anesthesia.⁵ What researchers have discovered is that women are usually given too strong of a dose and therefore have more severe side effects than men do—often, these side effects aren't caught right away because they are affecting internal organs. Case in point: in 2013, the FDA recommended that women taking sleeping pills with zolpidem in them, like Ambien and Intermezzo, take half of whatever dosage a doctor would prescribe because women “eliminate zolpidem from their bodies more slowly than men.”⁶ Intermezzo actually has two pills—a recommended dosage for men and one for women.⁷ So when people say we need more research on THC and CBD because they affect everyone differently, I have to laugh. The FDA is approving drugs all the time that affect people differently due to many factors, yet we very rarely see anything but universal dosages for everyone.

So when it comes to picking the right dosage and the right strain of marijuana to cook with, the options can seem overwhelming at first. There's *Cannabis indica* and *Cannabis sativa*. There are strains that supposedly taste sweet and those that supposedly taste tart. Then there are indica and sativa hybrids with all sorts of creative names, like Girl Scout Cookies, Purple Diesel, Pineapple Express, and OG Kush. Some hybrids can be indica dominant, some can be sativa dominant. Plus, even when people prefer to use a specific strain to cook with, they are often at the mercy of what's available and what's in season.

Leafly.com is a great place to turn as a new medical marijuana patient. The website lists every strain available, and it's easy to find what's available nearby. Patients can even search by medical necessity. So if a patient has symptoms of arthritis, migraines, depression, eye pressure, seizures, or what have you, it's easy to find what strains work best for those conditions. Plus, marijuana patients often rate their experiences with the strains, like a Yelp review, so a new patient gets reliable feedback from actual users.

JESSE VENTURA'S MARIJUANA MANIFESTO

| | | | | | | | |
|---|--|--|---|--|---|--|--|
|  |  | | | | | | |
| <h3>Indica</h3> | <h3>Sativa</h3> | | | | | | |
| <p>Morphology: Short and bushy; suitable for indoor gardens</p> | <p>Morphology: Tall and thin; suitable for outdoor gardens</p> | | | | | | |
| <p>Geographical Origins: Areas between 30 to 50 degrees latitude.</p> | <p>Geographical Origins: Areas between 0 and 30 degrees latitude</p> | | | | | | |
| <p>Effects: Tend to be sedating and relaxing with full-body effects</p> | <p>Effects: Tend to be uplifting and creative with cerebrally-focused effects</p> | | | | | | |
| <p>Symptom Relief: Anxiety, insomnia, pain, muscle spasms</p> | <p>Symptom Relief: Depression, ADD, fatigue, mood disorders</p> | | | | | | |
| <table border="0"> <tbody> <tr> <td style="text-align: center;"> <div style="background-color: #333; color: white; padding: 5px; border: 1px solid #555;"> <small>Indica</small> Ga <small>Grape Ape</small> </div> </td> <td style="text-align: center;"> <div style="background-color: #333; color: white; padding: 5px; border: 1px solid #555;"> <small>Indica</small> Gdp <small>Granddaddy Purple</small> </div> </td> <td style="text-align: center;"> <div style="background-color: #333; color: white; padding: 5px; border: 1px solid #555;"> <small>Indica</small> Nl <small>Northern Lights</small> </div> </td> </tr> </tbody> </table> | <div style="background-color: #333; color: white; padding: 5px; border: 1px solid #555;"> <small>Indica</small> Ga <small>Grape Ape</small> </div> | <div style="background-color: #333; color: white; padding: 5px; border: 1px solid #555;"> <small>Indica</small> Gdp <small>Granddaddy Purple</small> </div> | <div style="background-color: #333; color: white; padding: 5px; border: 1px solid #555;"> <small>Indica</small> Nl <small>Northern Lights</small> </div> | <table border="0"> <tbody> <tr> <td style="text-align: center;"> <div style="background-color: #333; color: white; padding: 5px; border: 1px solid #555;"> <small>Sativa</small> Sd <small>Sour Diesel</small> </div> </td> <td style="text-align: center;"> <div style="background-color: #333; color: white; padding: 5px; border: 1px solid #555;"> <small>Sativa</small> Jh <small>Jack Herer</small> </div> </td> <td style="text-align: center;"> <div style="background-color: #333; color: white; padding: 5px; border: 1px solid #555;"> <small>Sativa</small> Lh <small>Lemon Haze</small> </div> </td> </tr> </tbody> </table> | <div style="background-color: #333; color: white; padding: 5px; border: 1px solid #555;"> <small>Sativa</small> Sd <small>Sour Diesel</small> </div> | <div style="background-color: #333; color: white; padding: 5px; border: 1px solid #555;"> <small>Sativa</small> Jh <small>Jack Herer</small> </div> | <div style="background-color: #333; color: white; padding: 5px; border: 1px solid #555;"> <small>Sativa</small> Lh <small>Lemon Haze</small> </div> |
| <div style="background-color: #333; color: white; padding: 5px; border: 1px solid #555;"> <small>Indica</small> Ga <small>Grape Ape</small> </div> | <div style="background-color: #333; color: white; padding: 5px; border: 1px solid #555;"> <small>Indica</small> Gdp <small>Granddaddy Purple</small> </div> | <div style="background-color: #333; color: white; padding: 5px; border: 1px solid #555;"> <small>Indica</small> Nl <small>Northern Lights</small> </div> | | | | | |
| <div style="background-color: #333; color: white; padding: 5px; border: 1px solid #555;"> <small>Sativa</small> Sd <small>Sour Diesel</small> </div> | <div style="background-color: #333; color: white; padding: 5px; border: 1px solid #555;"> <small>Sativa</small> Jh <small>Jack Herer</small> </div> | <div style="background-color: #333; color: white; padding: 5px; border: 1px solid #555;"> <small>Sativa</small> Lh <small>Lemon Haze</small> </div> | | | | | |
|  | | | | | | | |

When it comes to cooking with cannabis, I would recommend finding out exactly how much THC is in the strain you're planning on cooking with because that will dictate how much weed to use:

- Most strains have about 10 percent THC
- Strains with 15–20 percent of THC are above average
- Strains with 21 percent THC or higher are exceptionally strong
- When cooking with marijuana, always double check with your local dispensary to find out the THC percentage in a certain strain if you aren't sure.

Once you know that, you can figure out how much marijuana to include in your meal by doing some math:

- Every 1 g of cannabis bud has 1,000 mg of dry weight.

JESSE VENTURA

- If a strain has about 10 percent THC, ten percent of 1,000 mg would be 100 mg. So for cooking or baking at home, it is safe to assume that a gram of cannabis contains at least 100 mg THC.
- Take the weighed amount of ground marijuana, convert it to milligrams and divide it by the recipe yield to determine a per-serving dose of THC.
- For example, 3 g of ground marijuana equals 300 mg THC (3 g x 100 mg = 300 mg THC). Then divide 300 mg by the recipe yield to find out how much mg will be in each serving. For example, if a recipe makes 60 cookies, then $300 \text{ mg} \div 60 \text{ cookies} = 5 \text{ mg}$. That means you'll have 5 mg THC per cookie. If you want less THC, then simply use less ground marijuana in the recipe and you'll decrease the amount.
- Keep in mind that a starting dosage for beginners is 5 mg per serving (the Colorado-mandated serving size for marijuana-infused edibles is 10 mg THC).⁸
- To avoid getting overly intoxicated when eating the finished product, make sure you already have some food in your stomach. Eating cannabis on an empty stomach exacerbates the effects.
- If you find that you've consumed too much, don't eat more food (particularly fats and proteins) because this can actually increase the amount of THC in your bloodstream.
- Instead, do your best to breathe slowly and relax. You can drink fruit juice (which raises your blood sugar naturally and might make you feel more stable) or eat an orange or other citrus fruit, which can also lower the effects of THC. If you have CBD oil handy, a few drops of that can balance out the THC. Remember, CBD naturally counteracts THC. The best solution to overdoing the dosage is within the plant itself!

When figuring out the dosage, it's also important to consider what you're cooking. If you're putting cannabis into a fatty, protein-rich food—such as a marinade on a steak, then the effects will last longer. If you're putting cannabis into candy, then the effects won't last quite as long.⁹ Today, there are many websites and cookbooks that offer all kinds of meals—from smoothies to breakfast to lunch to dinner to dessert. It seems every marijuana website out there—from *High Times* to Herb.co—on cooking with cannabis and offers unique recipe ideas.

JESSE VENTURA'S MARIJUANA MANIFESTO

Since cannabis has a distinct taste, most recipes focus on how to mask it so each meal doesn't taste the same. Most of the bad taste in edibles is likely due to phytol, chlorophyll, and oxidized plant fats. The trick to decrease the potency of that taste is to cook the weed at just the right temperature before adding it to the rest of the food—some people do this through a process called decarboxylation. Most recipes also mask the taste with ingredients like cinnamon, cardamom, black pepper, nutmeg, and citrus zest.

Decarboxylation is a simple process:

1. Preheat the oven to 240° F. / 115° C.
2. Break up cannabis flowers and buds into smaller pieces with your hands. We use one ounce, but you can elect to do more or less.
3. Put the pieces in one layer on a rimmed baking sheet. Make sure the pan is the correct size so there is not empty space on the pan.
4. Bake the cannabis for 30 to 40 minutes, stirring every 10 minutes so that it toasts evenly.
5. When the cannabis is darker in color, a light to medium brown, and has dried out, remove the baking sheet and allow the cannabis to cool. It should be quite crumbly when handled.
6. In a food processor, pulse the cannabis until it is coarsely ground (you don't want a superfine powder). Store it in an airtight container and use as needed to make extractions

Now, you don't have to decarboxylate your weed beforehand, but here's why some chefs prefer to do so: in the 1970s, US government researchers discovered that heating cannabis to about 200 degrees Fahrenheit actually increases THC and CBD percentages.¹⁰ Think of how hot the temperature of weed is when you smoke it. The cannabis actually heats up to a certain temperature to lose a CO₂ molecule, thereby heightening the THC content. Decarboxylating weed prior to cooking achieves the same goal—it makes the cannabis far more potent. People decant red wine for a similar reason: they want the wine to “open up” and be as favorable as possible. You can obviously drink red wine without decanting it, but it's preferred to do so. With decarboxylation, you get the strongest levels of THC in your cooking weed, and therefore the most for your money. Here's how to do it, from Herb.co, formerly known as TheStonersCookBook.com¹¹:

JESSE VENTURA**Cooking with Marijuana**

I must admit that I'm not an expert when it comes to edibles or cooking them. But the basic principle is this: marijuana isn't water soluble, so to cook with it, it must be added in fat-soluble ingredient such as butter or oil. When a recipe requires butter or oil, simply add butter or oil-infused with marijuana. You can find several butter and oil recipes online—the process is simple, but typically time consuming.

That being said, you're going to thank me for this one: here's a great oil recipe for a beginner—or anyone who can't commit to a full day of cooking or baking—a twenty-minute cannabis-infused olive oil by Chris Kilham. Chris Kilham is on the Medical Advisory Board for *The Dr. Oz Show* and writes about cannabis frequently in his weekly *Fox News* column. He is the author of fourteen books on holistic health and botanical medicines. He has been referred to as the “Indiana Jones of natural medicine.”

To make his oil, Chris stirs together a quarter ounce of ground, cured cannabis flowers, and a quarter cup of extra-virgin olive oil for about twenty minutes and strains it. That's it. This easy, versatile staple can be stirred into pasta sauce, brushed on bruschetta, and used in many recipes that call for extra-virgin olive oil.

TWENTY-MINUTE CANNABIS OLIVE OIL

Ingredients: Makes about ¼ cup of oil (THC per cup: 283.5 mg)

¼ oz. cured cannabis flowers, finely ground (can be decarboxylated)

¼ cup organic extra-virgin olive oil

coffee grinder/food processor

fine mesh strainer

cheesecloth

saucepan

Directions

1. Place cannabis into a coffee grinder or food processor and grind until powdered. The cannabis will stick to the insides of the grinder, so scrape it out thoroughly.
2. Place oil into a 6" diameter shallow frying pan or saucepan. Using a wooden spoon, continuously stir cannabis into oil over very low simmer for 10 to 20 minutes.
3. Remove from heat and let cool.

JESSE VENTURA'S MARIJUANA MANIFESTO

4. Line a fine mesh strainer with cheesecloth and place over a bowl, wide-mouth jar, or measuring cup. Twist cannabis with cheesecloth, squeezing out every last drop of oil. Discard cannabis solids.
5. Use oil immediately or transfer oil to a clean clear or dark bottle or jar with a lid or cork. Label with the type of oil and date. Store in a cool, dry place for up to a year.

Wasn't that easy? Ready to try a cannabis butter recipe?

Herb Seidel (otherwise known as Mota, a Spanish term for marijuana) was one of the first chefs to step up and publically teach people how to make great-tasting cannabis foods in the early 2000s. Mota's recipes have been featured in marijuana magazines and cook books. He's perfected a gourmet butter recipe for beginners that has less green flavor than the typical recipes available online. Here's his butter recipe that can be incorporated into literally anything—but to do it right, it takes two days to complete the process. Why two days? Most butter recipes either overcook the butter or break down the structure of the butter, but this technique allows the cannabis butter to mimic traditional butter as closely as possible.

BEGINNER'S BUTTER

Ingredients: Makes about 2 cups (THC per cup: 70.9 mg)

2 cups water

½ oz. cannabis, finely ground (can be decarboxylated)

½ lb. butter

fine mesh strainer

cheesecloth

airtight containers

Directions

1. Combine cannabis and water in a saucepan and bring to a boil. Simmer for 1 hour. If moisture reduces, add up to 2 cups of water.
2. Remove from heat, cover, and let cool to room temperature (about 2 hours). Return to stove and simmer for about 1 hour. Cover and refrigerate overnight. The next morning, return to saucepan and bring to simmer. Stir. Remove from flame, cover, and let cool to room temperature.

JESSE VENTURA

3. Line a fine mesh strainer with cheesecloth and place over a bowl, wide-mouth jar, or measuring cup. Pour butter through strainer to strain out cannabis. Twist cannabis with cheesecloth, squeezing out every last drop of oil. Discard cannabis solids.
4. Transfer butter into airtight container. Refrigerate overnight. Butter will separate from water. The next morning, run a knife around edges of container to loosen butter. Use knife to remove butter that has separated from water in bottom of container.
5. Line a fine mesh strainer with cheesecloth and strain remaining butter.
6. Place butter in airtight containers, label, and store in the refrigerator for up to two months or the freezer for up to six months.

Cooking with Hash

You can also use hash or hash oil to create edibles. Hash tastes less like pot because the green plant material has been removed. Be prepared though: this process includes a slow-simmer in a slow cooker and takes several hours. Hash is also much stronger than decarboxylated weed, so you might get more for your money as well.

Here's a recipe to make hash coconut oil by Matt Davenport, a sustainable cannabis grower and the founder of Permalos Consulting. Matt Davenport makes it possible to grow commercial cannabis without fertilizers, synthetic pesticides, GMOs, insecticides, hormones, herbicides, fungicides, and commercial bagged potting soil.¹²

SOLVENTLESS HASH AND COCONUT OIL

Ingredients: Makes 1 cup of oil (200 mg of THC per cup)

10–14 g of bubble hash and/or dry sift, finely ground

1 pt. organic, unrefined coconut oil, melted

2–3 pt. purified water

slow cooker or double boiler

candy thermometer

fine mesh strainer

cheesecloth

deep pan, such as a cake or brownie pan, to place the mixture in until fully cooled
mason or Ball jar for storing final product

JESSE VENTURA'S MARIJUANA MANIFESTO

Directions

1. Crumble dry hash with your hands until finely ground.
2. If you choose to decarboxylate hash, heat hash in oven at 200°F to 220°F for about 30 to 40 minutes. The material will turn a bit darker and release a slight aroma, much milder than the aroma of roasting flowers.
3. Melt coconut oil in slow cooker or double boiler.
4. Stir in bubble hash and/or dry sift. Continue stirring as hash melts into oil.
5. Add 3 to 4 cups of water. You can add more water as it evaporates during heating.
6. Set temperature on slow cooker or double boiler. Use a candy thermometer to ensure that the temperature remains between 220°F and 240°F and cook for 2 to 3 hours for decarboxylated hash or 6 to 7 hours for hash that wasn't decarboxylated. Stir occasionally.
7. Remove liquid from heat. Wait until liquid cools slightly, then pour into large pan through a fine mesh strainer or cheesecloth to remove any clumps or hash residue. The liquid can then be placed in a jar.
8. Place jar into refrigerator for up to 8 hours (until liquid is fully cooled). When cooled, the oil and water will separate, leaving oil on top.
9. To remove water from bottom, take jar out of the refrigerator and use a knife to poke a hole in the oil layer and pour water out. Dispose of the water, and store the remaining coconut oil in refrigerator for up to six months.

Cooking with Hemp

Cannabis sativa L—otherwise known as hemp—can be used for making everything from bread to pasta to cookies to protein shakes to milk. Remember, there is no THC in hemp, so you can add as much hemp seed as you want to your favorite meals. This is also why hempseed tastes entirely different from the mother cannabis plant.

Here are two simple hemp recipes from my co-author, Jen Hobbs, whose family recently started a medical marijuana farm in California called Hobbs Greenery. Both recipes are non-dairy, vegan, and gluten free.

JESSE VENTURA

HEMP MILK

Ingredients

- 1 cup shelled hemp seeds
- 3 to 4 cups filtered or spring water (3 cups for thicker milk, and up to 4 cups for thinner)
- 2 tbsp. of coconut oil
- 2 tbsp. of honey or agave or maple syrup
- ½ tbsp. of organic vanilla powder OR 1½ tbsp. of vanilla bean paste
- A pinch of Himalayan pink salt (or other unprocessed sea salt)
- ½ tsp nutmeg
- A few drops of hazelnut extract (optional)



Directions

1. In a high-speed blender, add hemp and water. (A lot of people prefer Vitamix blenders, but any high-speed blender will do.)
2. Blend on high for about two minutes, until fully liquefied.
3. Optional: Strain the liquid into a bowl through a milk bag, nut bag, cheese bag, or fine strainer by squeezing the milk through the bag or by pushing it out of the strainer with a spoon.

JESSE VENTURA'S MARIJUANA MANIFESTO

4. Discard the hemp fibers from the bag/strainer. Rinse the blender and pour the milk back into the blender from the bowl.
5. Add coconut oil, honey (or agave or maple syrup), vanilla, nutmeg, and salt. Blend briefly. Add hazelnut to taste.

Hemp milk will keep in the refrigerator for 3 to 4 days. It can also be frozen.

JESSE VENTURA**TO STRAIN OR NOT TO STRAIN HEMP MILK**

This is really up to personal preference. Some people prefer to strain hemp milk because it tastes less earthy and it isn't as grainy, which means the consistency of the end result is much closer to actual milk. The straining process will give you a sweeter flavor with less texture because the pulp of the hempseed is strained out.



Photo credit for all hemp milk/hemp sorbet images © 2016 by Jen Hobbs.

JESSE VENTURA'S MARIJUANA MANIFESTO

Personally, I prefer not to strain because then I'm getting all the nutrition from the hempseed. But if you find the nutty flavor is too much, you can strain the milk after you've added all the ingredients. And if you want an even smoother consistency after straining, you can put the strained milk back into the blender, add a tablespoon of soy or sunflower seed lecithin (lecithin is incredibly nutritious), and blend briefly.

Whether you strain your hemp milk or don't, it is a great base for smoothies and shakes. I find that the nutmeg and hazelnut help detract from the hempseed taste, but you might want to consider forgoing both ingredients if you're adding this to a smoothie with fruits and vegetables. But if you wanted to make chocolate milk or hot chocolate with the hemp milk, I'd leave the nutmeg and hazelnut in.

STRAWBERRY HEMP SEED SORBET



Ingredients

9 leveled tbsp. of hulled hemp seeds

JESSE VENTURA

2 pt. (2 lbs.) of strawberries

1¼ cup of water

½ tsp. ground raw vanilla bean OR vanilla bean paste

6 pitted dates

1 tbsp. of lecithin powder (as a natural emulsifier)

**Directions**

1. In a high-speed blender, add all ingredients, blend for about 2 minutes.
2. Pour into ice cream machine. Makes approximately 1½ quarts of sorbet.
If you don't have an ice cream machine, you can also use this recipe as a

JESSE VENTURA'S MARIJUANA MANIFESTO

strawberry smoothie. The strawberries completely mask the flavor of the hemp seeds, so it tastes exactly like a strawberry smoothie.

Cannabis Cookbooks

If you've perfected your cannabis butter and oil, there are many cookbooks out there to choose from that offer cannabis recipes for breakfast, lunch, dinner, dessert, snacks, and even alcoholic beverages. Cannabis cuisine from Matt Davenport, Herb Seidel, Chris Kilham, and other gourmet chefs is available in *The Cannabis Kitchen Cookbook: Feel-Good Food for Home Cooks*, by Robyn Griggs Lawrence.