

# Industrial Hemp in NZ, Past Present and Future Challenges and Changes

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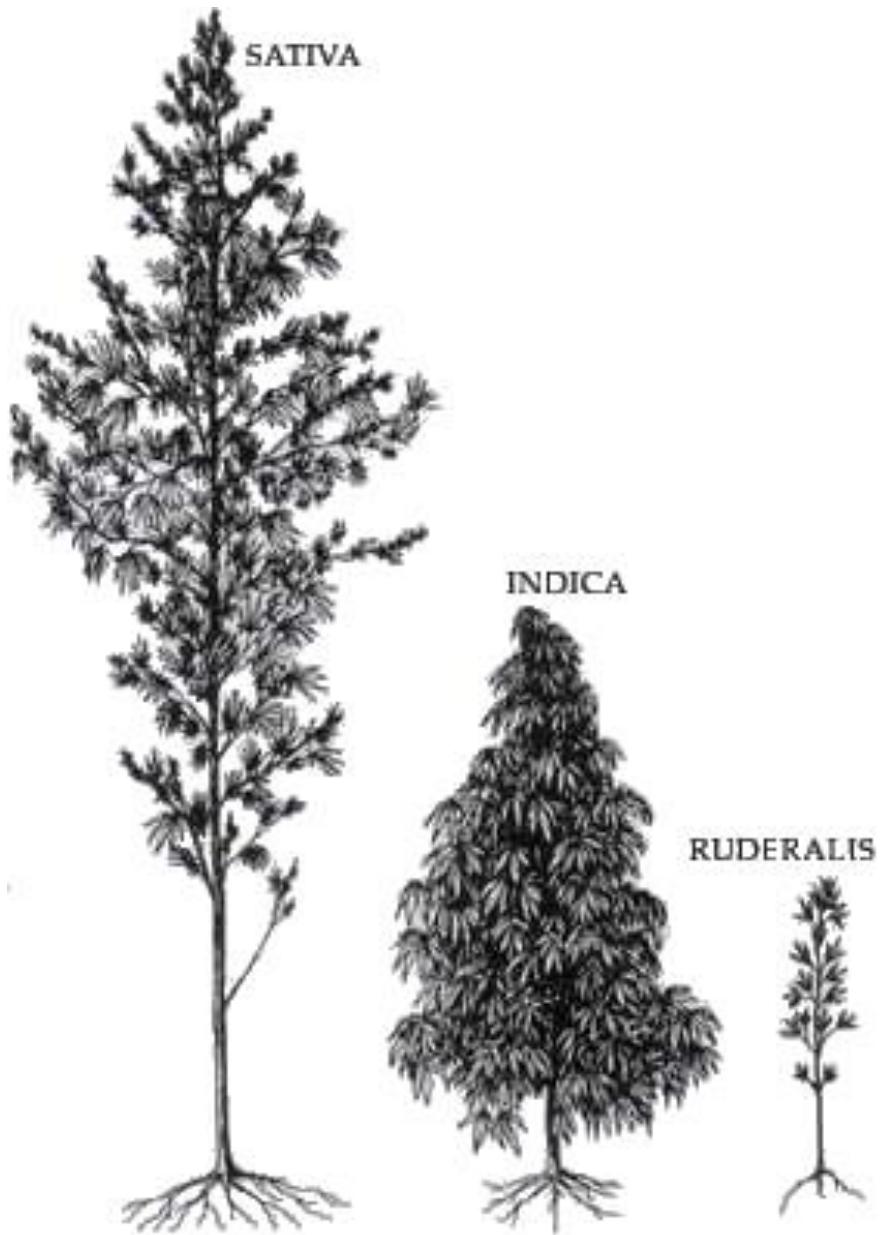
Richard Barge – Deputy Chair NZ  
Hemp Industries Association Inc  
(1997)



# Richard Barge – Deputy Chair NZHIA

- What is iHemp, introduction to the NZHIA and the iHemp regulations
- The challenge of working with hemp, why is it a good idea and the political risk
- Changing attitudes, challenges of education
- A brand new raw material – challenges for industry and the primary producers
- Challenges of scale – supply and demand
- iHemp - A Catalyst for Change





# What is industrial hemp?

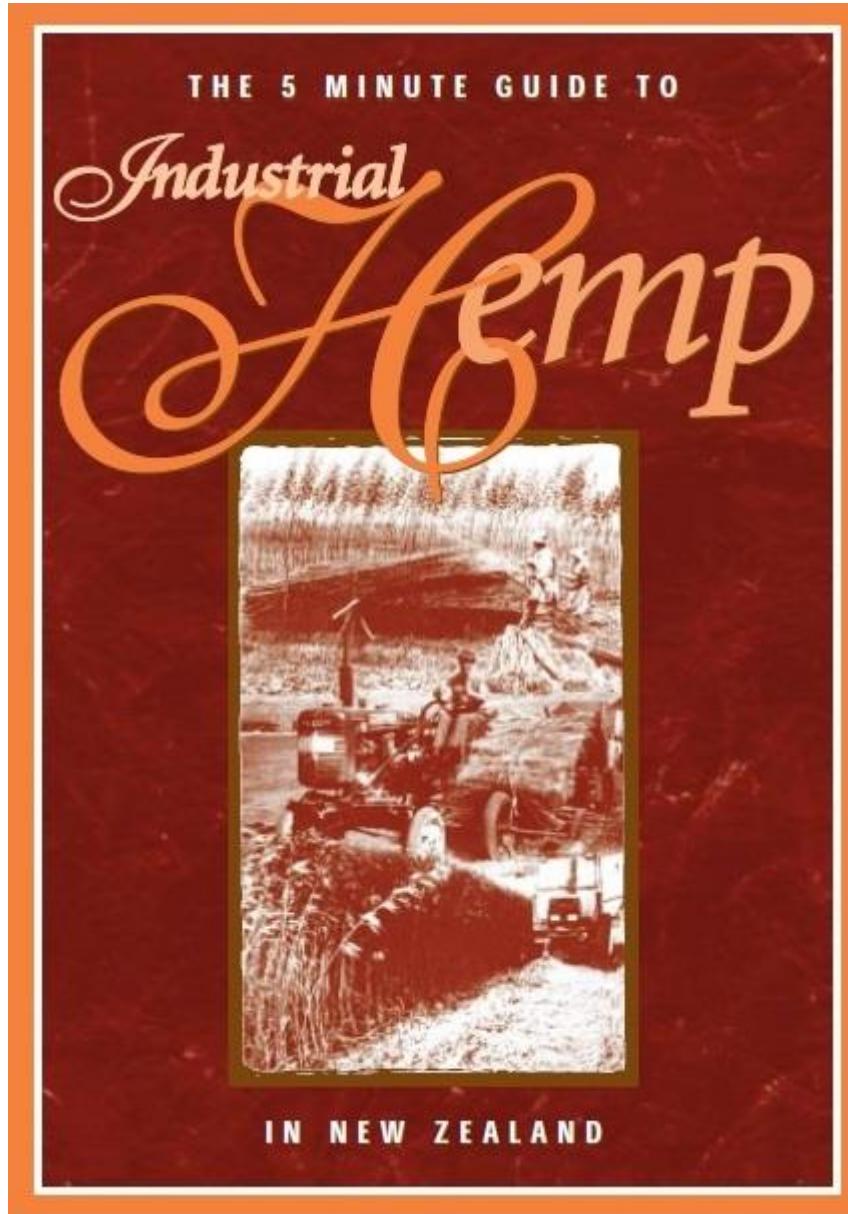


- Industrial hemp is cannabis with a low THC content
- An annual herbaceous crop growing to maturity in 90-120 days
- Requires little if any agriculture inputs and is a phytoremediator
- Producing seed, fiber, leaf/flower and roots



© Anna Harding





# The NZHIA, incorporated in 1997

## **Industrial Hemp** and its Potential for New Zealand

**A Report for the 1999 Kellogg Rural  
Leadership Course**



**November 1999**

**Charles N Merfield**  
[charles@merfield.com](mailto:charles@merfield.com)

# Misuse of Drugs (Industrial Hemp) Regulations 2006

(SR 2006/163)

## 3 Object

The object of these regulations is to enable the cultivation and distribution of industrial hemp under a licensing regime that ensures that other forms of cannabis are not cultivated and distributed under the guise of industrial hemp.

**hemp** means cannabis plant, seed, or fruit

**hemp product** means—

- (a) a product of a kind that is derived, in whole or in part, from industrial hemp; and
- (b) a hemp seed food product



**industrial hemp** means hemp in the form of—

- (a) plants with a THC content that is—
  - (i) generally below 0.35%; and
  - (ii) is not above 0.5%; or
- (b) seeds harvested from plants of that kind

## 67 Permission

- (1) Every person is permitted to possess, use, and trade in—
  - (a) hemp products; and
  - (b) hulled hemp seeds; and
  - (c) stalks of industrial hemp, as long as those stalks are without leaves or fruit.
- (1A) Every person is permitted to import into and export from New Zealand—
  - (a) hemp products; and
  - (b) hulled hemp seeds; and
  - (c) stalks of industrial hemp, as long as those stalks are without leaves or fruit.
- (2) This regulation does not affect any other restrictions imposed by law.



**LICENCE FOR INDUSTRIAL HEMP**  
(Issued pursuant to the Misuse of Drugs (Industrial Hemp) Regulations 2006)  
**GENERAL LICENCE**

**Licence No 2017/IHG47**

Name and address of licensee:  
**HEMPTASTIC NEW ZEALAND LIMITED**  
**22 Gracechurch Drive, Flat Bush, AUCKLAND 2016**

Responsible persons:

<b>Richard Stuart BARGE</b>	Director
<b>Gillian Carol BARGE</b>	Director

The licensee is hereby authorised, pursuant to the Misuse of Drugs (Industrial Hemp) Regulations, to carry out the following activities:

- ( the procurement of industrial hemp from within New Zealand or from overseas, for the varieties specified on this licence
- ( the supply within New Zealand, of industrial hemp
- ( the processing of industrial hemp
- ( the possession of industrial hemp for the purposes of the activities specified above.

These activities are authorised only in respect of the approved cultivars specified on this licence.

Location of authorised activities:  
**22 Gracechurch Drive, Flat Bush, AUCKLAND 2016**

Name of approved cultivar(s):

<b>Anka</b>	<b>Fasamo</b>
<b>Kompolti</b>	<b>USO31</b>
<b>Ferimon 12</b>	<b>Fedora 17</b>
<b>Aotearoa 1</b>	<b>Finola</b>
<b>CFX-1</b>	<b>CFX-2</b>
<b>CRS-1</b>	<b>Futura 75</b>

This licence is subject to the following conditions:

- 1) All authorised activities will be carried out pursuant to the Misuse of Drugs Act 1975 and the Misuse of Drugs (Industrial Hemp) Regulations 2006.
- 2) The licensee will send an annual report to the Ministry of Health by 31 July each year, in accordance with regulation 54 of the Regulations.

The licence shall expire on the **14<sup>th</sup> day of January 2020**.

Signed this **20<sup>th</sup>** day of **January** **2017**..... *M. Hayes*  
For the Director-General of Health



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# Popular Mechanics Magazine

WRITTEN SO YOU CAN UNDERSTAND IT

## NEW BILLION-DOLLAR CROP

*American farmers are promised a new cash crop with an annual value of several hundred million dollars, all because a machine has been invented that solves a problem more than 6,000 years old.*

**Hemp is the standard fiber of the world. It has great tensile strength and durability. It is used to produce more than 5,000 textile products, ranging from rope to fine laces, and the woody "hurds" remaining after the fiber has been removed contain more than 77 percent cellulose, which can be used to produce more than 25,000 products, ranging from dynamite to Cellophane.**



*Hemp fiber being delivered from machine, ready for baling. Pile of pulverized hurds beside machine is 77 percent cellulose..*

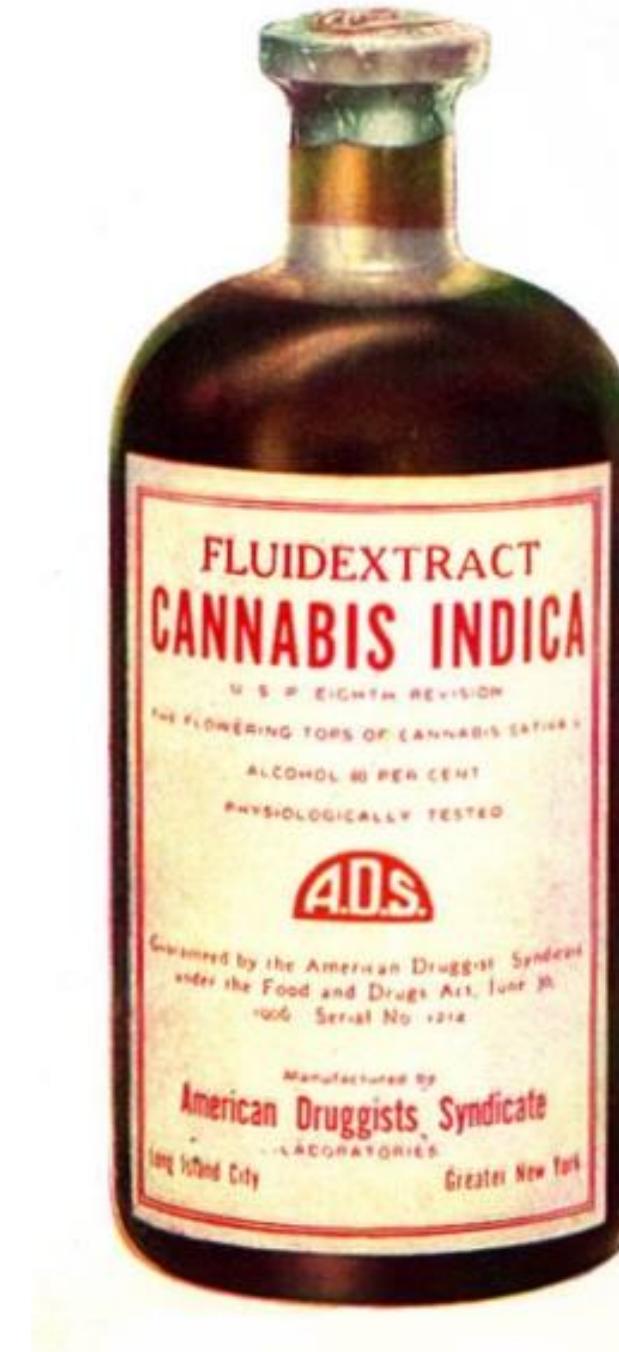
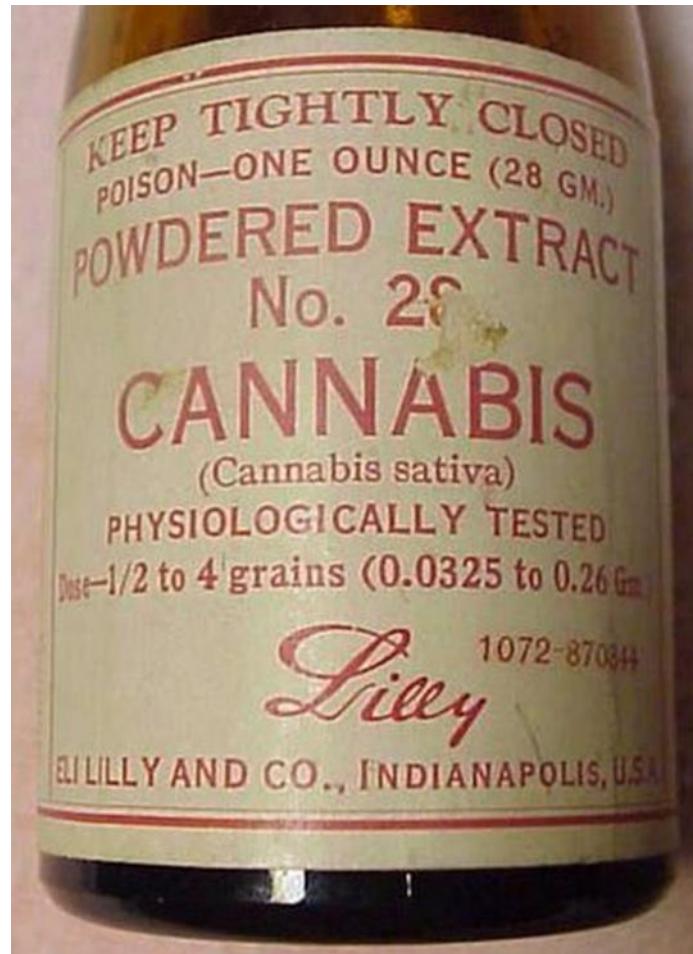
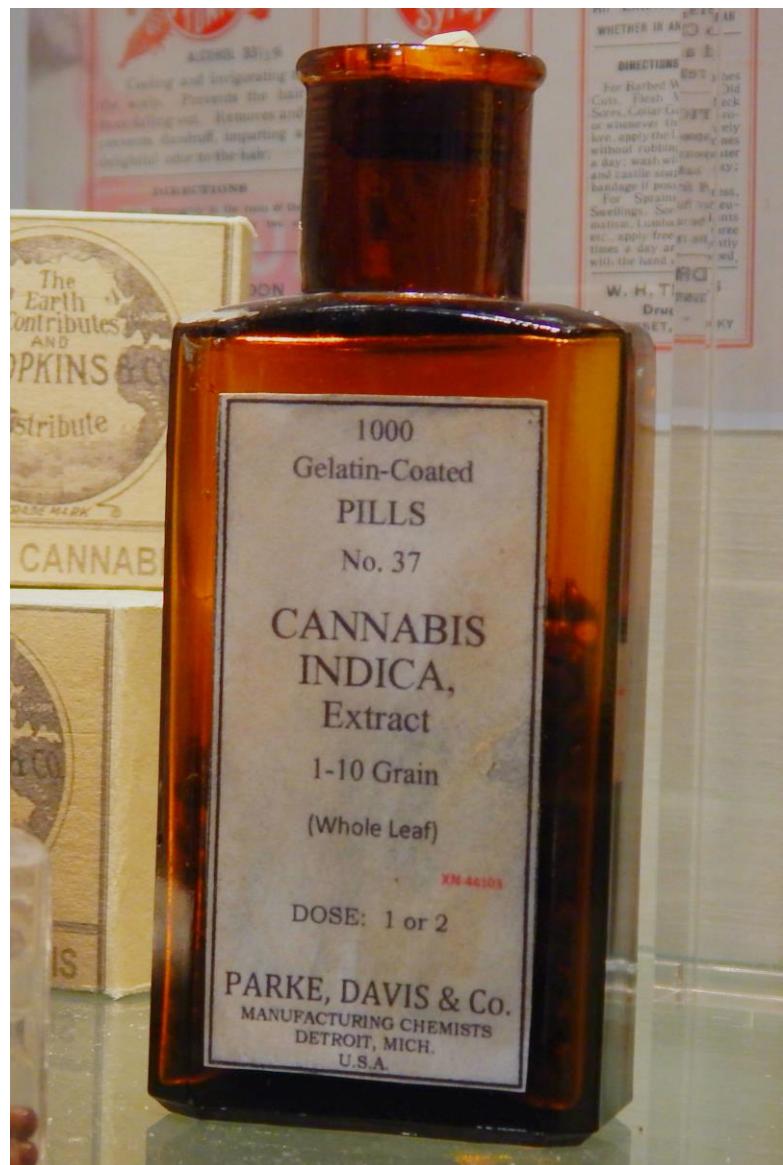


*Sailing the seven seas with sails and rope made of hemp.*



*Modern version of a linen duster made from hemp, one of the toughest fibers in the world.*





UNITED STATES DEPARTMENT OF AGRICULTURE

BULLETIN No. 404

Contribution from the Bureau of Plant Industry  
WM. A. TAYLOR, Chief

Washington, D. C.

PROFESSIONAL PAPER

October 14, 1916

HEMP HURDS AS PAPER-MAKING MATERIAL

By

LYSTER H. DEWEY, Botanist in Charge of Fiber-Plant Investigations, and JASON L. MERRILL, Paper-Plant Chemist  
Paper-Plant Investigations

This bulletin is printed on paper manufactured from hemp hurds, run No. 143, which is recorded on page 20

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WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1916

# BILLION-DOLLAR CROP

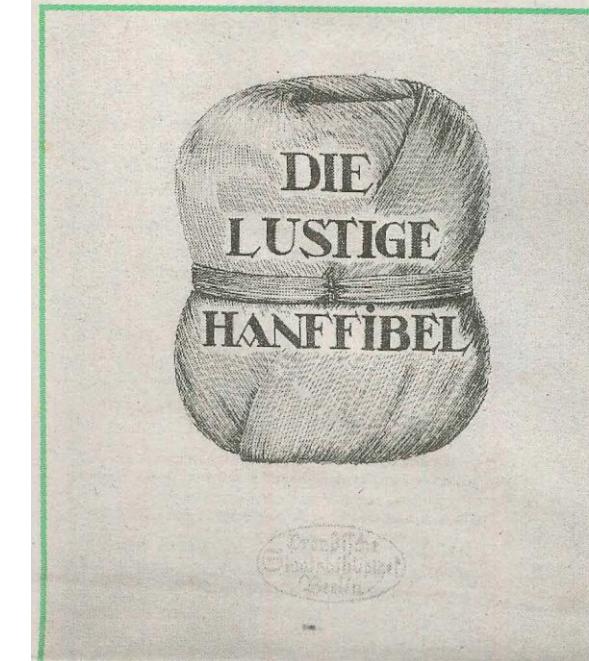
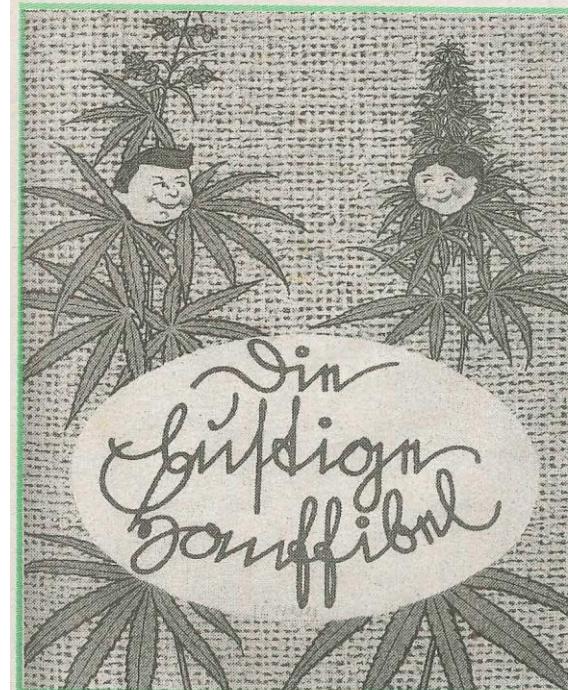
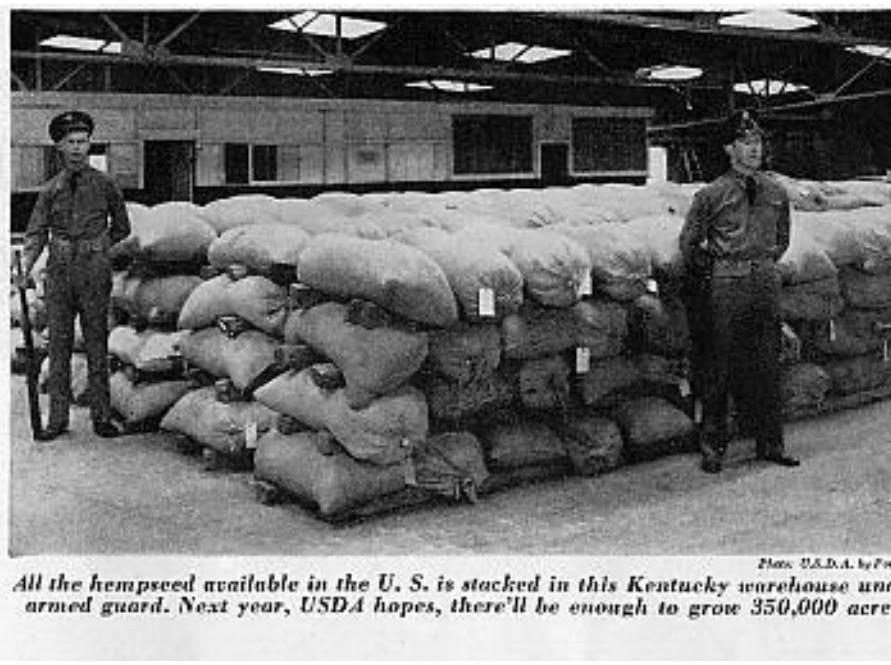
petitions with末尾produced  
foreign fiber while passing  
farmers fibers do a ton for  
being as it comes from the field.

From the farmers' point of view, hemp is an easy crop to grow and will yield from three to six tons per acre on top land that will grow corn, wheat, or oats. It has a short growing season, so that it can be planted after other crops are in. It can be grown in any state of the union. The long roots penetrate and break the soil to leave it in perfect condition for the next year's crop. The dense shock of leaves, right to twelve feet above the ground, shades out weeds. Two successive crops are enough to reclaim land that has been abandoned because of Canadian thistle or spark grass.

Under old methods, hemp  
is listed to page 1000

Illustration

Photograph



## The Humorous Hemp Primer

The cover shows the male plant eager to pollenate the willing female.

HERER - BROCKERS - KATALYSE  
DIE WIEDERENTDECKUNG  
DER NUTZPFLANZE  
CANNABIS MARIHUANA

# Hanf

EINE DER ÄLTESTEN KULTURPFLANZEN DER ERDE  
KÖNNTE HELFEN, DIE MENSCHEN AUSREICHEND MIT  
KLEIDUNG, PAPIER, ÖL, BRENNSTOFF, NAHRUNG,  
BAUMATERIAL UND VIELEN MEDIZINEN ZU VER-  
SORGEN



ZWEITAUSENDEINS

## The Lustrous HempFiber

2

**SINGLE CONVENTION  
ON  
NARCOTIC DRUGS, 1961,**

**as amended by  
the 1972 Protocol Amending the Single Convention  
on Narcotic Drugs, 1961**



*Article 28. Control of cannabis*

1. If a Party permits the cultivation of the cannabis plant for the production of cannabis or cannabis resin, it shall apply thereto the system of controls as provided in article 23 respecting the control of the opium poppy.
2. This Convention shall not apply to the cultivation of the cannabis plant exclusively for industrial purposes (fibre and seed) or horticultural purposes.
3. The Parties shall adopt such measures as may be necessary to prevent the misuse of, and illicit traffic in, the leaves of the cannabis plant.





# THE ENDOCANNABINOID SYSTEM

## HUMAN CANNABINOID RECEPTORS

### CB1

Receptors are concentrated in the brain & the central nervous system but are also present in some nerves and organs.

### CB2

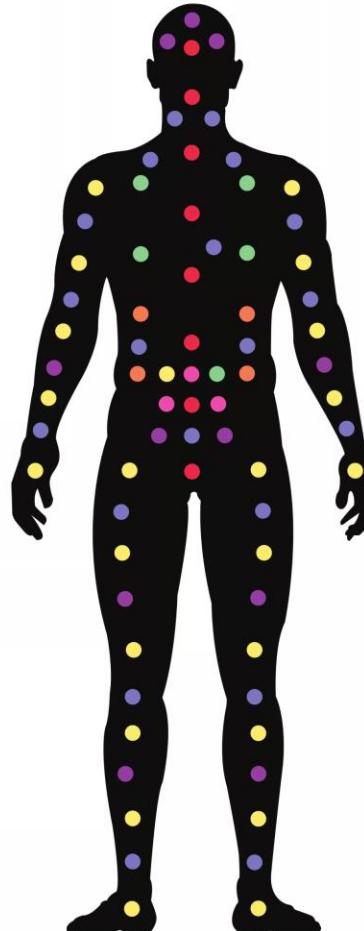
Receptors are mostly in peripheral organs, especially cells associated with the immune system.

### TRPV1

Receptors are concentrated in the blood, bone, marrow, tongue, kidney, liver, stomach & ovaries.

### TRPV2

Receptors are concentrated in the skin, muscle, kidney, stomach & lungs.



### GPR 18

Receptors can be found primarily in bone marrow, the spleen and lymph nodes, and to a lesser extent the testes

### GPR55

Receptors are found in the bones, the brain, particularly the cerebellum, and the Jejunum and Ileum.

### GPR 119

Receptors are found predominantly in the Pancreas and the intestinal tract, in small amounts



 /MCANewZealand/

 @MCAwarenessNZ

 mcawarenessnz.org/

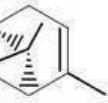
# Terpenoid Education

## How do Terpenoids affect the body?

Medicinal effects one can expect to see from medicine high in these terpenoids.

### $\alpha$ -Pinene

- Sleep aid
- Anti-anxiety
- Sedative
- Bronchodilator
- Pine aroma



### Linalool

- Anticonvulsant
- Stress reliever
- Anti-epileptic
- Anti-convulsant
- Anti-inflammatory



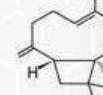
### Myrcene

- Anti-tumor
- Anti-fungal
- Anti-cancer
- Anti-spasm
- Sedative
- Aids insomnia
- Anti-inflammatory
- Anti-bacterial
- Muscle relaxant
- Anti-septic
- Allows THC to take effect quickly
- Levels >5% result in "couch lock effect"
- Musky aroma



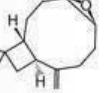
### $\beta$ -Caryophyllene

- Anti-tumor
- Anti-fungal
- Muscle relaxant
- Rich spicy aroma
- Allows THC to take effect quickly
- Levels >5% result in "couch lock effect"



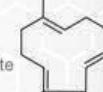
### Carophyllene Oxide

- Anti-fungal
- Pain Reliever
- Spicy aroma



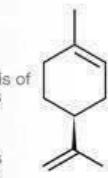
### $\alpha$ -Humulene

- Anti-ischemic
- Anti-inflammatory
- Hoppy aroma



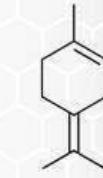
### Limonene

- Anti-anxiety
- Anti-depression
- Anti-tumor
- Antiseptic
- Anti-stress
- Immunostimulant
- Orange aroma
- Produces apoptosis of breast cancer cells
- Antimicrobial
- Used clinically to dissolve gallstones
- Relieves heartburn and gastrointestinal reflux
- Increases blood flow from the heart



### Terpinolene

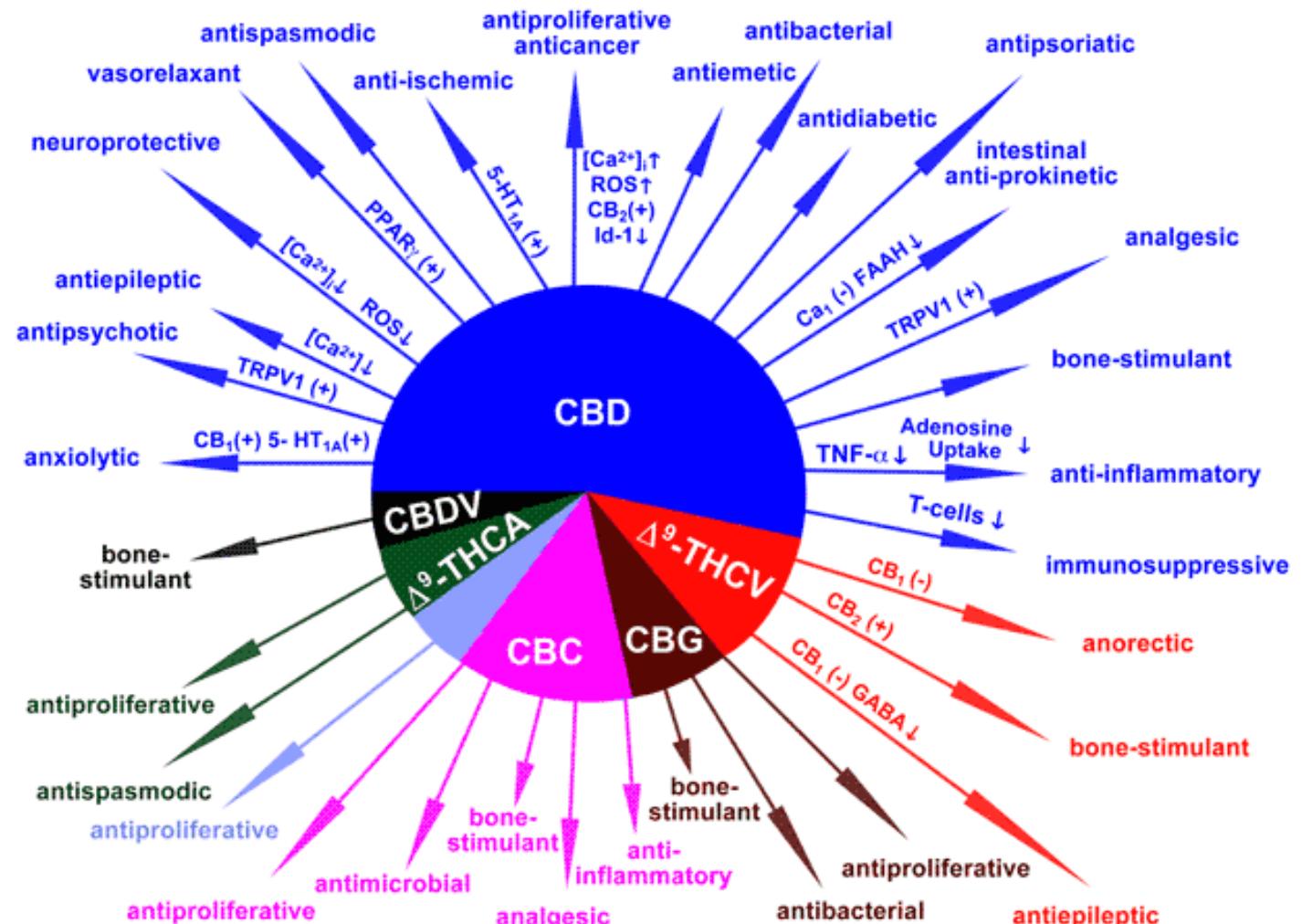
- Anti-bacterial
- Anti-fungal
- Antiseptic
- Smokey woody aroma



**az med**  
testing  
[azmedtest.com](http://azmedtest.com)

## Pharmacological actions of non-psychotropic cannabinoids

(with the indication of the proposed mechanisms of action).



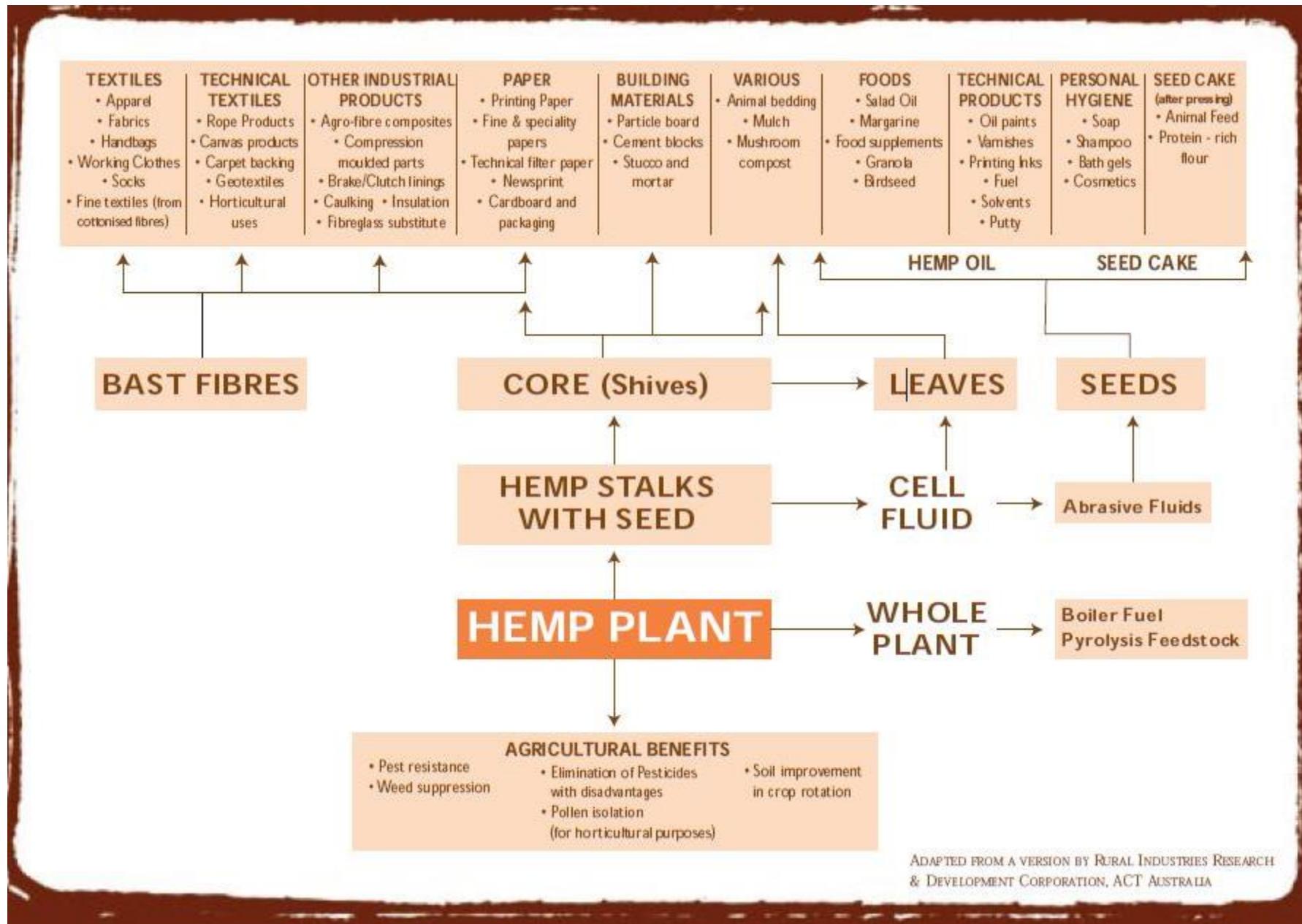
*TRENDS in Pharmacological Sciences*



# CANNABINOID

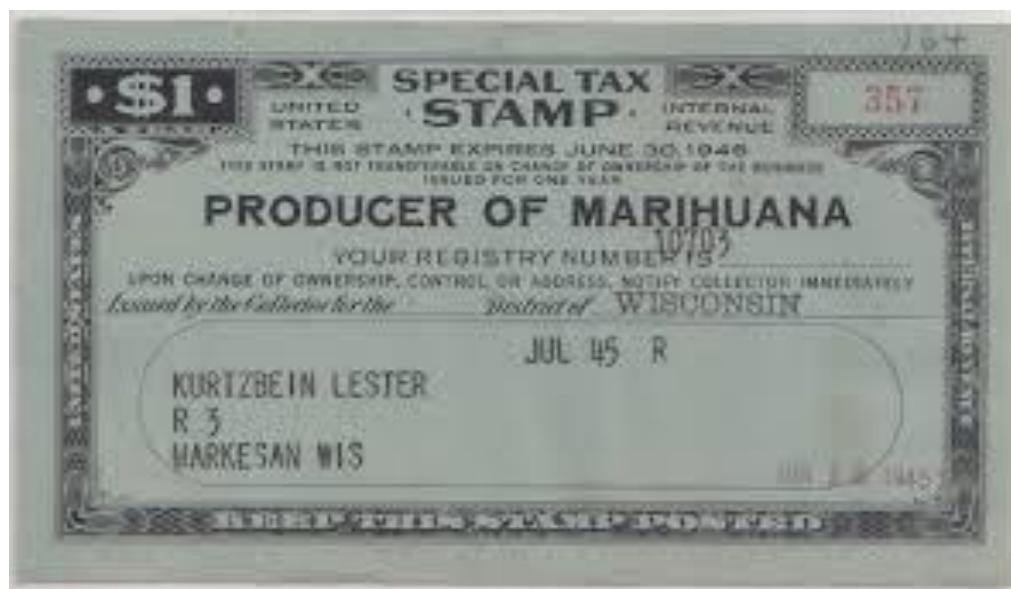
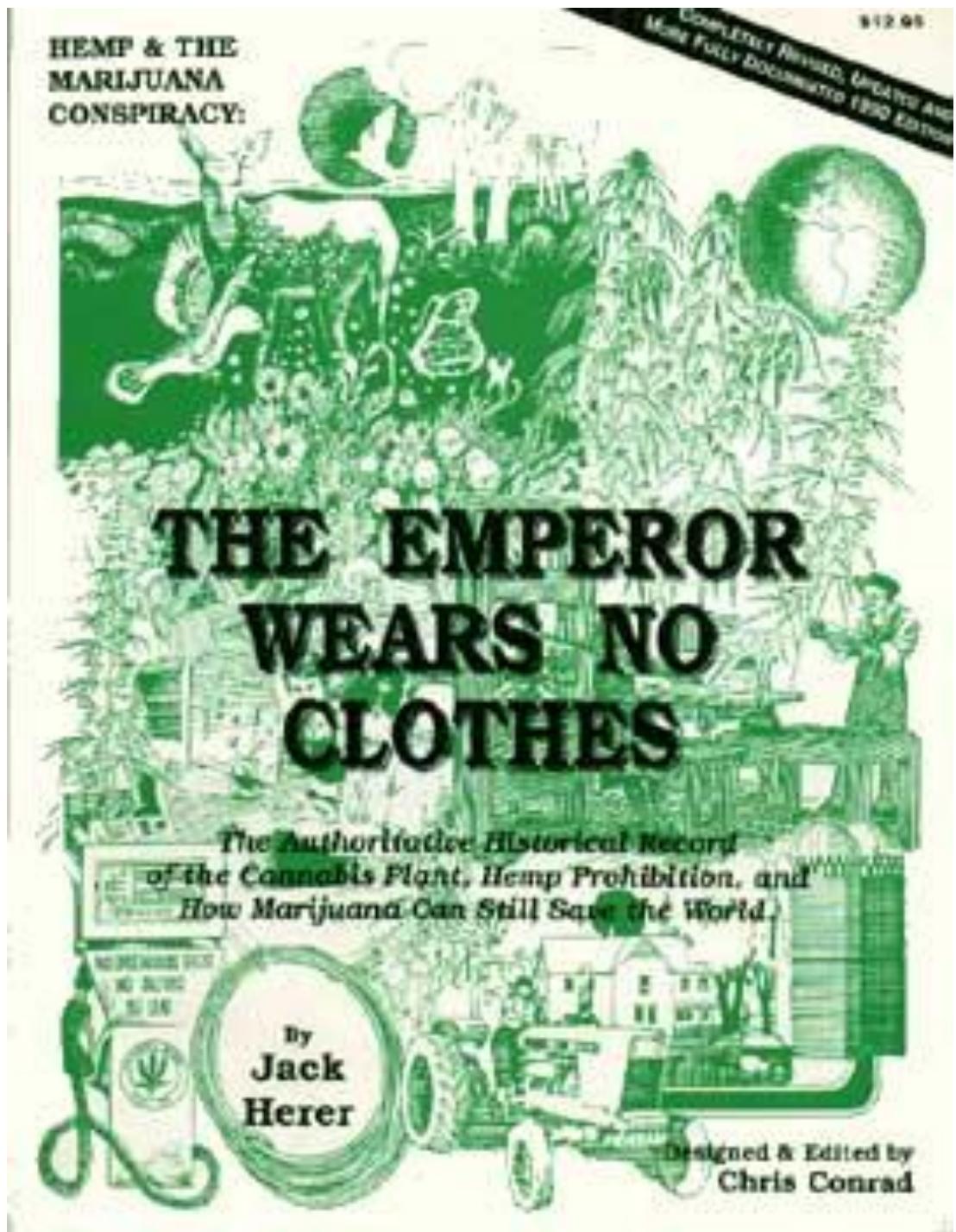
THE ULTIMATE GUIDE TO CANNABIS MEDICINE

	THC	CBD	CBG	CBN	CBC	THC <sub>v</sub>	CBGA	CGCA	CBCA	THCA
Relieves Pain	●	●		●	●		●			
Reduce Seizures		●				●				
Sleep Better				●						
Relieve Anxiety		●								
Reduce Blood Sugar		●								
Suppress Appetite			●							
Kill/Slow Bacteria		●	●							
Reduce Nausea	●	●								
Anti-Fungal								●		
Inhibit tumor/cancer		●	●		●					●
Reduce Artery Blockage		●								
Treat Psoriasis		●								
Antipsychotic		●								
Suppress Muscle Spasm	●	●						●		●
Stimulate Appetite	●									
Promote Bone Growth	●	●	●	●	●	●	●			
Reduces Inflammation	●	●	●	●	●	●	●			●



ADAPTED FROM A VERSION BY RURAL INDUSTRIES RESEARCH & DEVELOPMENT CORPORATION, ACT AUSTRALIA





Thank you for your  
attention and interest in  
the emerging iHemp  
industry

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If you would like to get involved  
please contact [admin@nzhia.com](mailto:admin@nzhia.com)  
or check out our website  
[nzhia.com](http://nzhia.com)

