

‘Hemp’ products for human consumption:

(p)review of existing terms & nomenclatures

Kenzi Riboulet-Zemouli
Independent researcher, Barcelona (ES)





naming

naming

The background of the slide is a photograph of hemp plants. The plants have green, serrated leaves and some developing flower stalks. They are silhouetted against a sky that transitions from a pale blue at the top to a warm orange and yellow at the bottom, suggesting a sunset or sunrise. The word 'naming' is superimposed in the center in a large, white, serif font.



HEMP  INT



Kenzi Riboulet-Zemouli

is creating data & ideas about cannabis & hemp policies

patreon.com/teluobir

Supporter

€5

PER MONTH

Join

- General Support

Official Patron

€10

PER MONTH

Join

- Patron-only Q&As
- Private community
- Early access


VIP Patron

€20

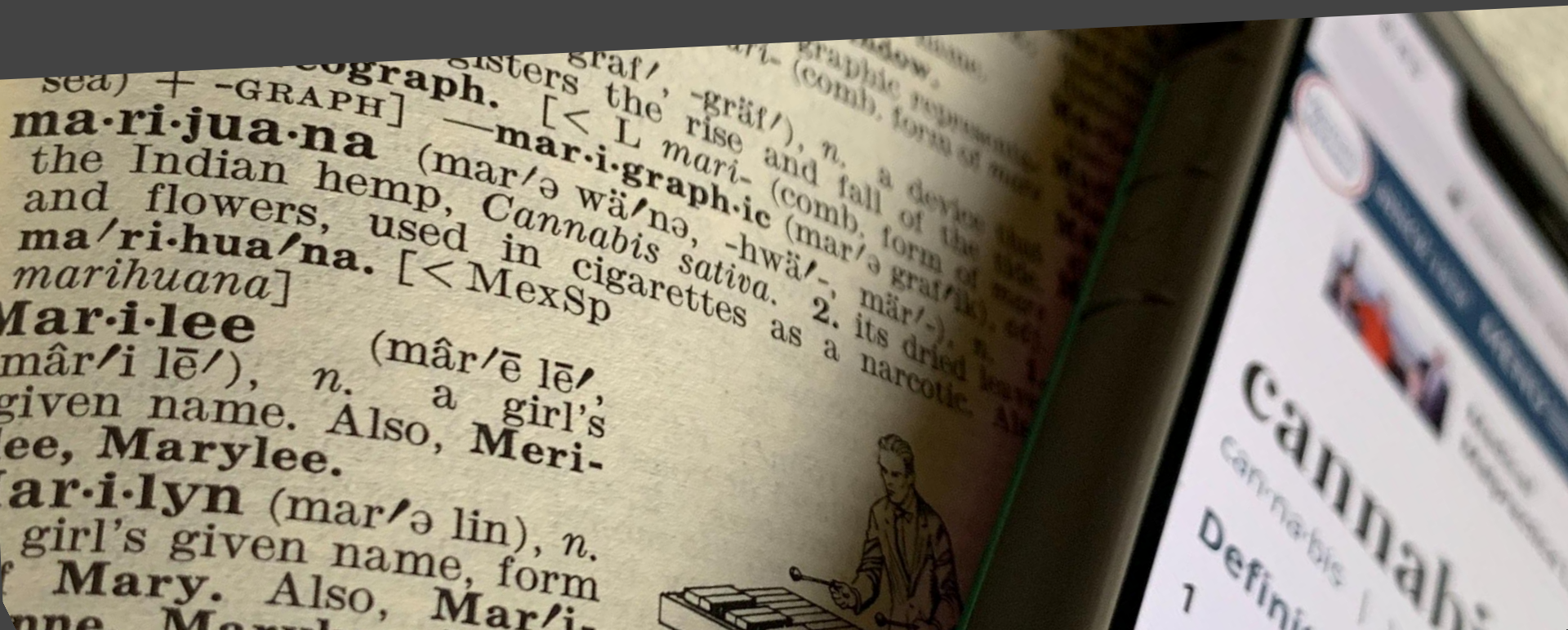
PER MONTH

Join

- Patron-only Q&As
- Access to drafts and works-in-progress

- 
- Folk & vernacular terminologies
 - The terminology of drug control
 - Way forward

Folk & vernacular terminologies



What is ‘cannabis’?

*“‘What's the use of their having names”,
the Gnat said, “if they won't answer to them?”*

*“No use to them”, said Alice;
“but it's useful to the people that name them, I suppose.
If not, why do things have names at all?”*

Lewis Carroll, *Through the Looking-Glass, and What Alice Found There*

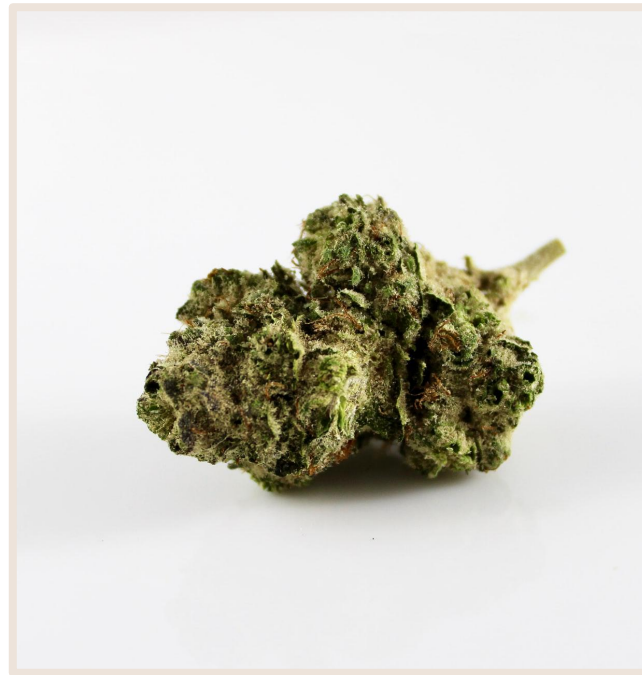
Is this 'cannabis'?



Is this 'cannabis'?

Or is it a 'cannabis plant'?
Or is it 'Cannabis sativa L.'?
Or is it 'hemp'?
Or is it a 'hemp plant'?
Or is it 'marijuana'?
Or is it a 'marijuana plant'?
Is it a 'drug'?

Is this 'cannabis'?



Is this 'cannabis'?

Or are these 'flowers'?

Or is it a 'bud'?

Or is it 'ganja'?

Or is it 'weed'?

Or is it 'marijuana'?

Is it a 'drug'?

Is this 'cannabis'?



Is this 'cannabis'?

Or is it 'resin'?
Or is it 'hashish'?
Or is it 'charras'?
Or is it an 'extract'?
Or is it a 'concentrate'?
Is it a 'drug'?

Is this 'cannabis'?



Is this 'cannabis'?

Or is it an 'oil'?

Or is it an 'extract'?

Or is it a 'concentrate'?

Is it different from the previous?

Or is it a 'medicine'?

Is it a 'drug'?

Is this 'cannabis'?



Is this 'cannabis'?

Or is it an 'oil'?
Or is it an 'extract'?
Or is it a 'concentrate'?
Or is it a 'medicine'?
Or is it 'just CBD'?
Is it a 'drug'?

What is ‘THC’?

*‘imagine the tremendous efforts that were necessary
to distinguish carefully between millions of substances today,
most of them being white powders indistinguishable to the naked eye’*

Joachim Schummer, in: Morris P (ed) From Classical to Modern Chemistry:
The Instrumental Revolution. London: The Royal Society of Chemistry, 2002

INN & out

N-acetyl-para-aminophenol?
N-(4-hydroxyphenyl)acetamide?

or

Paracetamol
Acetaminophen

Holiday INN

Δ^9 -tetrahydrocannabinol?

(-)-trans- Δ^9 -tetrahydrocannabinol?

or

Dronabinol

Dronabin–lol

tetrahydrocannabinol									
delta-6a(10a)	delta-6a(7)	delta-7	delta-8	delta-9				delta-10	delta-9(11)
				(+)-cis	(+)-trans	(-)-cis	<u>(-)-trans</u>		

Popular belief

‘dronabinol is only *ex vivo*, whether (–)-trans or other’

International Nonproprietary Name

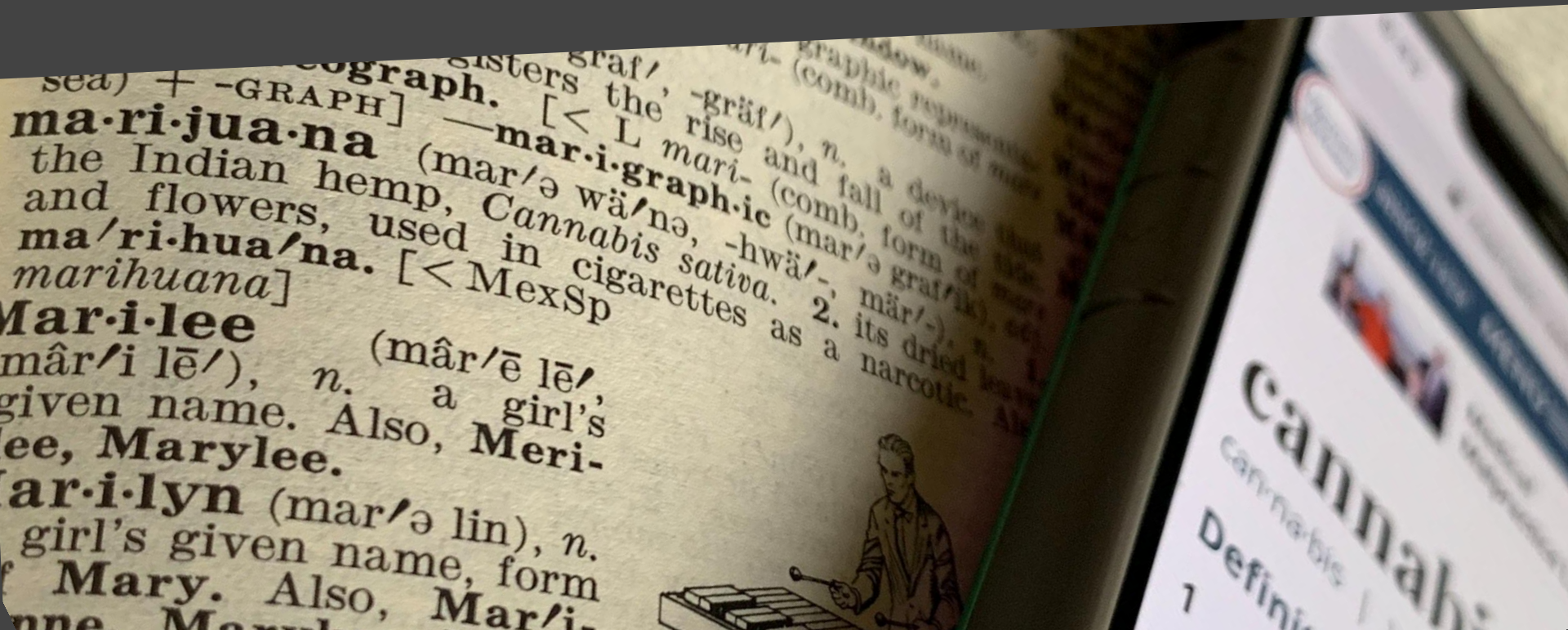
‘dronabinol is only (–)-trans-delta-9-THC, whether *in vivo* or *ex vivo*’

United States Pharmacopœia

‘dronabinol is delta-9-THC, whether *in vivo* or *ex vivo*’

Source:
Riboulet-Zemouli K
(2020) ‘Cannabis’
ontologies I.

The terminology of drug control



The terminology of drug control



THC: current international scheduling status

tetrahydrocannabinol									
delta-6a(10a)	delta-6a(7)	delta-7	delta-8	delta-9				delta-10	delta-9(11)
				(+)-cis	(+)-trans	(-)-cis	<u>(-)-trans</u>		
71-Sch.I				71-Sch.II			61-Sch.IV ^a 61-Sch.I ^a or 71-Sch.II ^b	71-Sch.I	

— Current international controls on THC

(a) Only when obtained from *Cannabis sativa* (INCB 2019, Form P, V.18-02480(E))

(b) Only when 'from synthetic origin' (*ibid.*)

Source:
Riboulet-Zemouli
K (2020)
'Cannabis'
ontologies I.

THC scheduling: the WHO recommends consistency

tetrahydrocannabinol									
delta-6a(10a)	delta-6a(7)	delta-7	delta-8	delta-9				delta-10	delta-9(11)
				(+)-cis	(+)-trans	(-)-cis	<u>(-)-trans</u>		
71-Sch.I				71-Sch.II		61-Sch.IV ^a 61-Sch.I ^a or 71-Sch.II ^b		71-Sch.I	
61-Sch.I 61-Sch.III ^c									

— Current international controls on THC

— Changes recommended by WHO

(a) Only when obtained from *Cannabis sativa* (INCB 2019, Form P, V.18-02480(E))

(b) Only when 'from synthetic origin' (*ibid.*)

(c) Only for some preparations for medical use, depending on each jurisdiction (ECDD41)

Source:
Riboulet-Zemouli
K (2020)
'Cannabis'
ontologies I.

What is synthesis?

COMMON ANCESTOR.

synthesis The formation of chemical compounds from more simple compounds. *See* BIOSYNTHESIS.

nature > news > article

a natureresearch

nature

Subscribe



Search

NEWS • 27 FEBRUARY 2019

Scientists brew cannabis using hacked beer yeast

Researchers modify microbe to manufacture cannabis compounds including the psychoactive chemical THC.

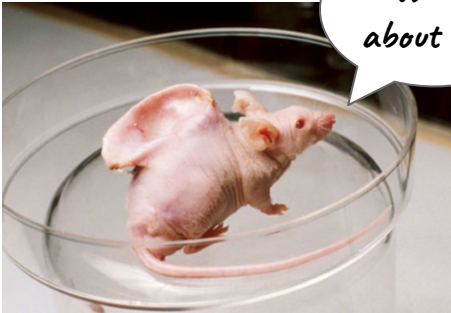
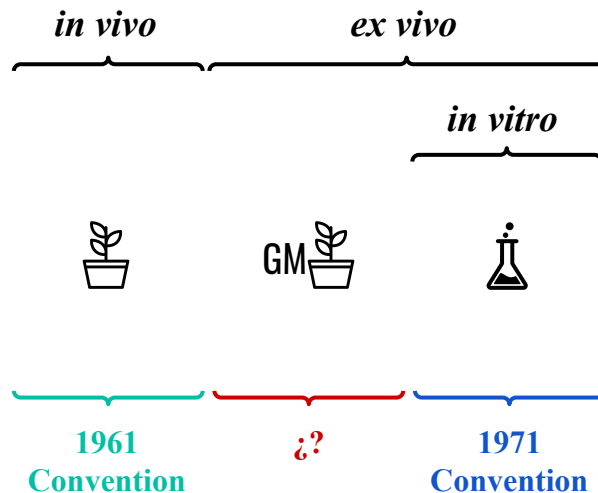
Complete biosynthesis of cannabinoids and their unnatural analogues in yeast

Xiaozhou Luo, Michael A. Reiter, Leo d'Espaux, Jeff Wong, Charles M. Denby, Anna Lechner, Yunfeng Zhang, Adrian T. Grzybowski, Simon Harth, Weiyin Lin, Hyunsu Lee, Changhua Yu, John Shin, Kai Deng, Veronica T. Benites, George Wang, Edward E. K. Baidoo, Yan Chen, Ishaan Dev, Christopher J. Petzold & Jay D. Keasling 

Nature **567**, 123–126(2019) | [Cite this article](#)

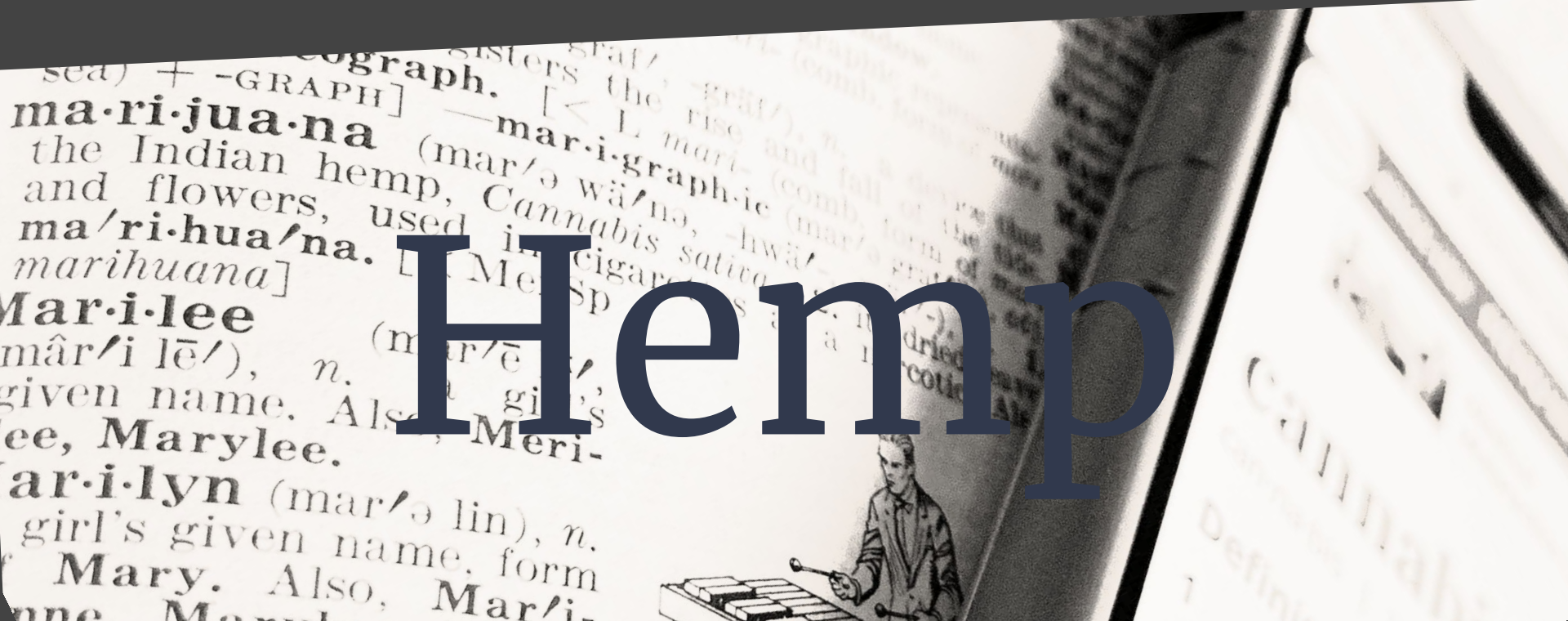
50k Accesses | **70** Citations | **1025** Altmetric | [Metrics](#)

THC scheduling: the ontological gap



What
about me!?

The terminology of drug control



Hemp = Cannabis for industrial purposes. *Period.*

Preprint

File available

Scope and definition of the exemption covering “hemp” in the international drug control Conventions. A total exemption – by purpose

October 2019

DOI: [10.13140/RG.2.2.15697.28008](https://doi.org/10.13140/RG.2.2.15697.28008)

Project: [Cannabis: Policy & Sustainability](#)



Kenzi Riboulet-Zemouli

➔ bit.ly/3d3GjAN

The terminology of drug control



The drug control Conventions: universal lexicon?

'Cannabis plant'

'any plant of the genus Cannabis' (1961 Convention, Art. 1[c]),

'Cannabis'

'the flowering or fruiting tops of the cannabis plant (excluding the seeds and leaves when not accompanied by the tops) from which the resin has not been extracted, by whatever name they may be designated' (1961 Convention, Art. 1[b]). 'the term 'cannabis' [...] covers all tops including those which are not yet dried, as well as those of the male plants' (Commentary, p.2 §1).

'Cannabis resin'

'the separated resin, whether crude or purified, obtained from the cannabis plant' (1961 Convention, Art. 1[d]).

'resin, however, becomes "cannabis resin" only when it is "separated" from the plant; without such separation, it remains a part of the cannabis plant, and if in the top part, of "cannabis"' (Commentary, p.5 §3)

'Extracts and tinctures of cannabis'

No definition is provided.

The drug control Conventions: universal lexicon?

'Cannabis plant'

'any plant of the genus Cannabis' (1961 Convention, Art. 1[c]),

'Cannabis'

'the flowering or fruiting tops of the cannabis plant (excluding the seeds and leaves when not accompanied by the tops) from which the resin has not been extracted, by whatever name they may be designated' (1961 Convention, Art. 1[b]). 'the term 'cannabis' [...] covers all tops including those which are not yet dried, as well as those of the male plants' (Commentary, p.2 §1).

'Cannabis resin'

the separated resin, whether crude or purified, obtained from the cannabis plant' (1961 Convention, Art. 1[d]).

resin, however, becomes "cannabis resin" only when it is "separated" from the plant; without such separation, it remains a part of the cannabis plant, and if in the top part, of "cannabis" (Commentary, p.5 §3)

'Extracts and tinctures of cannabis'

No definition is provided.

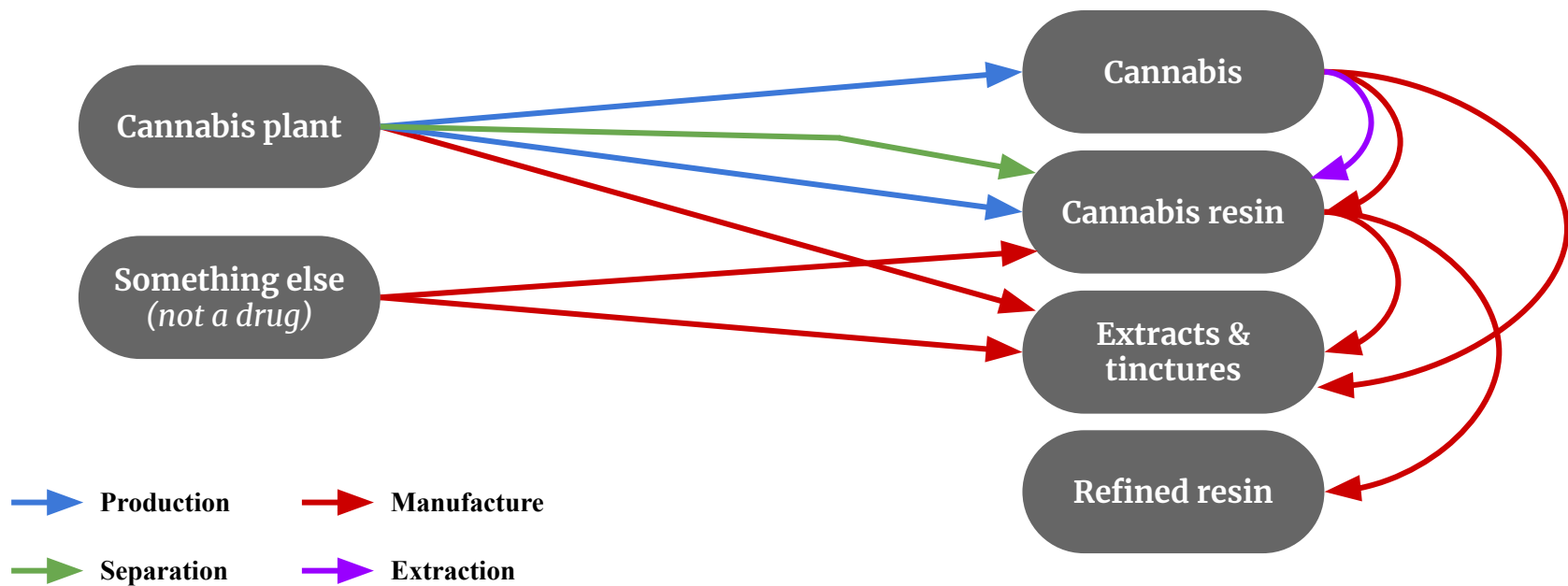
The drug control Conventions: universal lexicon?

Starting material	Method of obtention	Resulting drug
cannabis plant	Production (Art. 1(t))	cannabis
cannabis plant	Production (Art. 1(t)) Separation (Art. 1(c))	cannabis resin
cannabis	Manufacture (Art. 1(t)) Extraction (Art. 1(b))	
	Manufacture (Art. 1(t))	extracts and tinctures
cannabis plant	Manufacture (Art. 1(t))	
cannabis resin	Manufacture (Art. 1(t))	
crude cannabis resin	Manufacture (Art. 1(t), 1(j))	refined cannabis resin
Something else, not a scheduled drug	Manufacture (Art. 1(t), 1(j))	cannabis resin
(e.g., <i>in vitro</i> synthesis)	Manufacture (Art. 1(t), 1(j))	extracts and tinctures

Nomenclature of methods of obtention of *Cannabis* products in the 1961 Convention on narcotic drugs.

Products in bold are defined as 'drugs' in the Convention (Art. 1[j]), as of 2020.

The drug control Conventions: universal lexicon?



Nomenclature of methods of obtention of *Cannabis* products in the 1961 Convention on narcotic drugs.

Products in bold are defined as 'drugs' in the Convention (Art. 1[j]), as of 2020.

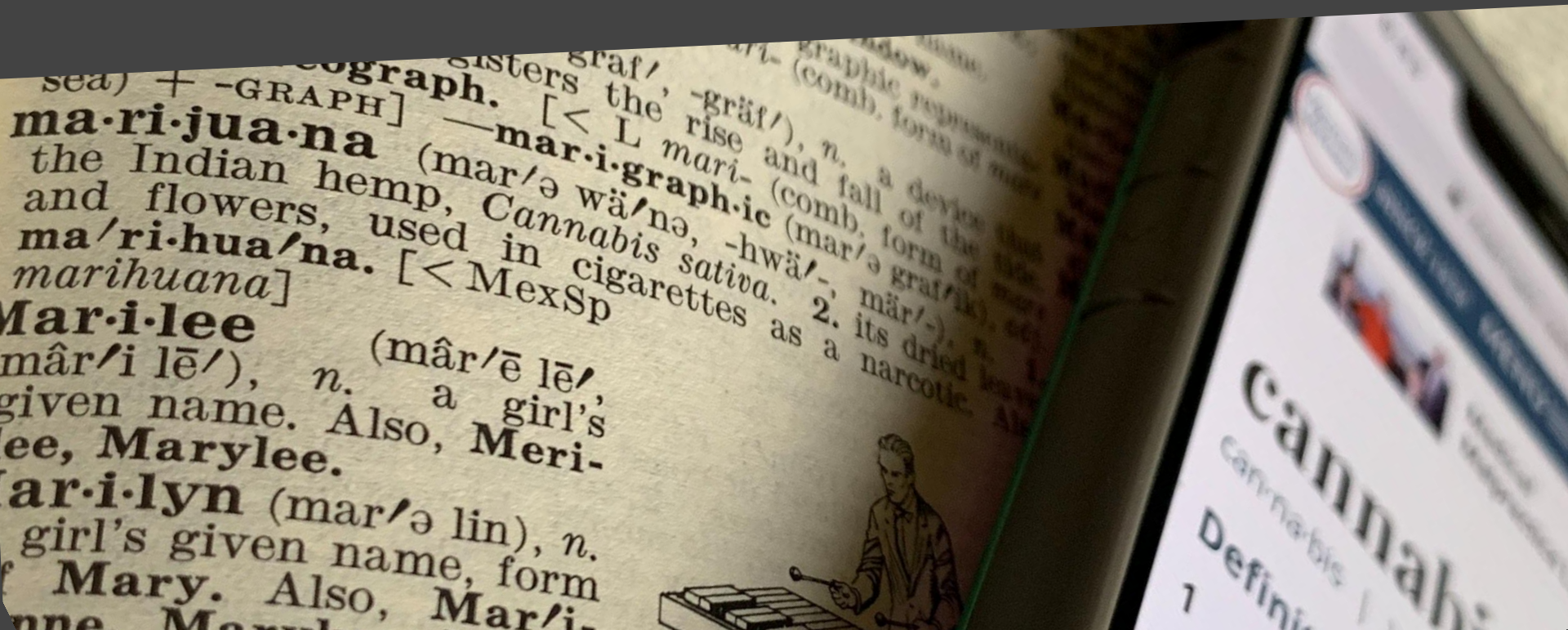
The drug control Conventions: universal lexicon?

Chemistry	Pharmacology	Toxicology	Therapeutic use	Epidemiology
Cannabis tinctures	Cannabis tinctures			
Cannabis extracts			Cannabis Sativa Extract	Extracts and tinctures
	Cannabis oils			
Cannabis oils		Cannabis extracts, tinctures, oils and tea		
Aqueous extracts	Aqueous extracts		n/a	n/a
n/a	Hemp seed oil		Hemp seed, 'Evening Primrose Oils'	n/a
	Nabiximols	Nabiximols	Nabiximols	
Nabiximols / cannabidiol in preparation with other cannabis-related ingredients	n/a	n/a	Oral-mucosal cannabinoid extract	Nabiximols
n/a	n/a	Cannabis resin	n/a	n/a

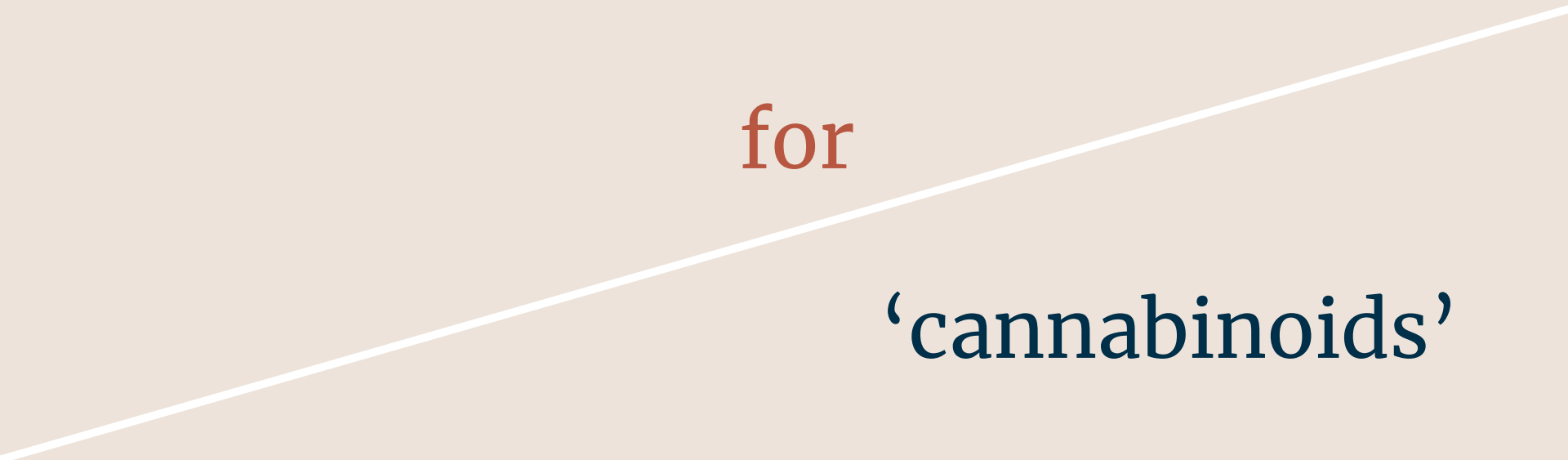
Conflicting ontologies: 'extracts and tinctures of cannabis' according to different authors of the pre-review documentation used at the 40th ECDD meeting.

Source: Krawitz M, Riboulet-Zemouli K, Banas B, et al. (2018) *Joint Civil Society Contribution to the 40th Meeting of the WHO ECDD*. FAAAT editions

Is there a way forward?



A way forward for ‘cannabinoids’



What are cannabinoids?

cannabinoid(s), *n*—a class of chemical compounds produced by the cannabis plant.

DISCUSSION—Cannabinoids are synonymous with “phytocannabinoids” when referring to the cannabinoids produced by the cannabis plant. “Endocannabinoids” refer to those cannabinoids produced by normal human/animal physiological functions.

V · T · E		Cannabinoids	[hide]	
Phytocannabinoids	Alkylamides · Caryophyllene · CBC · CBCV · CBD · CBDV · CBG · CBGM · CBGV · CBL · CBDL · CBN · CBV · Epigallocatechin gallate · Gallo catechol · Perrottetinsene · Serinolamide A · THC · THC-C4 · THCA · THCV · Yangonin			
	Active metabolites: 8,11-DiOH-THC · 11-COOH-THC · 11-OH-THC			
Endocannabinoids	Arachidonoyl ethanolamide (AEA; anandamide) · 2-Arachidonoylglycerol (2-AG) · 2-Arachidonyl glyceryl ether (2-AGE; noladin ether) · 2-Oleoylglycerol (2-OG) · N-Arachidonoyl dopamine (NADA) · N-Arachidonylglycine (NAGly) · 2-Arachidonoyl lysophosphatidylinositol (2-ALPI) · N-Arachidonoyl serotonin (AA-5-HT) · Docosatetraenylethanolamide (DEA) · Lysophosphatidylinositol (LPI) · Oleamide · Oleoylethanolamide (OEA) · Palmitylethanolamide (PEA) · RVD-Hpa · Stearoylethanolamide (SEA) · O-Arachidonoyl ethanolamine (O-AEA; virodhamine)			
Synthetic cannabinoids	Classical cannabinoids (dibenzopyrans)	A-40174 · A-41988 · A-42574 · Ajulemic acid · AM-087 · AM-411 · AM-855 · AM-905 · AM-906 · AM-919 · AM-926 · AM-938 · AM-2389 · AM-4030 · AMG-1 · AMG-3 · AMG-36 · AMG-41 · Dexanabinol (HU-211) · DMHP · Dronabinol · HHC · HU-210 · HU-243 · JWH-051 · JWH-133 · JWH-139 · JWH-161 · JWH-229 · JWH-359 · KM-233 · L-759,633 · L-759,656 · Levonantradol (CP 50,561) · Menabit · Nabazetil · Nabidrox (Canbisol) · Nabilone · Nabilon · Nabotacate · O-224 · O-581 · O-774 · O-806 · O-823 · O-1057 · O-1125 · O-1191 · O-1238 · O-2048 · O-2113 · O-2365 · O-2372 · O-2373 · O-2383 · O-2426 · O-2484 · O-2545 · O-2694 · O-2715 · O-2716 · O-3223 · O-3226 · Parahexyl · Pirinabine · THC-O-acetate · THC-O-phosphate		
	Non-classical cannabinoids	Cannabicyclohexanol · CBD-DMH · CP 47,497 · (C6)-CP 47,497 · (C9)-CP 47,497 · CP 55,244 · CP 55,940 · HU-308 · HU-320 · HU-331 · HU-336 · HU-345 · HU-446 · HU-465 · HU-910 · HUF-101 · Nonabine · O-1376 · O-1422 · O-1601 · O-1656 · O-1657 · O-1660 · O-1663 · O-1871 · SPA-229 · Tinabinol		
	Benzoylindoles	1-Butyl-3-(2-methoxybenzoyl)indole · 1-Butyl-3-(4-methoxybenzoyl)indole · 1-Pentyl-3-(2-methoxybenzoyl)indole · AM-630 · AM-679 · AM-694 · AM-1241 · AM-2233 · GW-405,833 (L-768,242) · Pravadoline · RCS-4 · WIN 54,461		
	Naphthoylindoles	AM-1220 · AM-1221 · AM-1235 · AM-2201 · AM-2232 · CHM-081 · EAM-2201 · FUB-JWH-018 · JWH-007 · JWH-015 · JWH-018 · JWH-019 · JWH-073 · JWH-081 · JWH-098 · JWH-116 · JWH-122 · JWH-149 · JWH-164 · JWH-182 · JWH-193 · JWH-198 · JWH-200 · JWH-210 · JWH-398 · JWH-424 · MAM-1220 · MAM-2201 · NE-CHMIMO		
	Naphthoylindazoles	THJ-018 · THJ-2201		
	Pyrrolobenoxazines	WIN 55,212-2		
	Naphthylmethylindoles	JWH-175 · JWH-176 · JWH-184 · JWH-185 · JWH-192 · JWH-194 · JWH-195 · JWH-196 · JWH-197 · JWH-199		
	Phenylacetylindoles	Cannabipiperidiethanone · JWH-167 · JWH-203 · JWH-249 · JWH-250 · JWH-251 · JWH-302 · RCS-8		
	Indole-3-carboxamides	5F-ADBICA · 5F-MDMB-PICA · 5F-NNE1 · 5F-PCN · 5F-SDB-006 · AB-FUBICA · AB-PICA · ADBICA · ADB-FUBICA · APICA · CUMYL-BICA · CUMYL-PICA · CUMYL-5F-PICA · FDU-NNE1 · MDMB-CHMICA · MMB-CHMICA · MMB-2201 · MN-25 (UR-12) · NNE1 · PX-1 · Org 28312 · Org 28611 · SDB-006 · STS-135		
	Indole-3-carboxylates	5F-PB-22 · FDU-PB-22 · FUB-PB-22 · QUCHIC (BB-22) · QUPIC (PB-22) · NM-2201		
	Tetramethylcyclopropanoylindoles	5Br-UR-144 · 5CI-UR-144 · A-796,260 · A-834,735 · FUB-144 · UR-144 · XLR-11 · XLR-12		
	Indazole-3-carboxamides	4F-MDMB-BINACA · 5CI-APINACA · 5F-ADB · 5F-ADB-PINACA · 5F-AMB · 5F-APINACA · 5F-CUMYL-PINACA · 5F-EDMB-PINACA · 5F-EMB-PINACA · AB-CHMINACA · AB-FUBINACA · AB-FUBINACA 2-fluorobenzyl isomer · AB-PINACA · ADB-CHMINACA · ADB-FUBINACA · ADB-PINACA · Adamantyl-THPINACA · ADBS-FUB-187 · AMB-CHMINACA · AMB-FUBINACA · APINACA (AKB48) · APP-FUBINACA · CUMYL-4CN-BINACA · CUMYL-PINACA · CUMYL-THPINACA · EMB-FUBINACA · FUB-APINACA · MDMB-4en-PINACA · MDMB-FUBINACA · MDMB-CHMINACA · MN-18 · PX-2 · PX-3		
	Tetramethylcyclopropanoylindazoles	FAB-144		
	Naphthoylpyrroles	JWH-030 · JWH-147 · JWH-307 · JWH-369 · JWH-370		
	Eicosanoids	AM-883 · AM-1346 · ACEA · ACPA · Methanandamide (AM-356) · O-585 · O-689 · O-1812 · O-1860 · O-1861		
	Pyrazolecarboxamides	5F-AB-FUPPYCA · AB-CHFUPPYCA		
	Others	2F-QMPSB · 4-HTMPIO · 5F-PY-PICA · 5F-PY-PINACA · 5F-3-pyridinoylindole · A-836,339 · A-955,840 · Abnormal cannabidiol · AB-001 · BzODZ-EpYr · AM-1248 · AM-1714 · AZ-11713908 · AZD-1940 · BAY 38-7271 · BAY 59-3074 · BIM-018 · CB-13 · CB-86 · CBS-0550 · CUMYL-4CN-B7AICA · 5F-CUMYL-P7AICA · CUMYL-PEGACLONE · EG-018 · FUBIMINA · GSK-554,418A · GW-842,166X · JTE 7-31 · LASSBio-881 · LBP-1 · Leelamine · MDA-7 · MDA-19 · MEPIRAPIM · NESS-040C5 · NMP-7 · O-889 · O-1269 · O-1270 · O-1399 · O-1602 · O-2220 · Olorinab · PF-03550096 · PSB-SB-1202 · PTI-1 · PTI-2 · PTI-3 · QMPSB · S-444,823 · SER-601 · Tedalinab · URB-447 · VSN-16 · WIN 56,098		
Allosteric CBR ligands	Org 27569 · Org 27759 · Org 29647 · RTI-371 · Pregnenolone			
Endocannabinoid enhancers (inactivation inhibitors)	4-Nonylphenylboronic acid · AM-404 · Arachidonoyl serotonin · Arvanil · BIA 10-2474 · Biochanin A · CAY-10401 · CAY-10429 · Genistein · Guineesine · IDPF · JNJ 1661010 · JNJ-42165279 · JZL184 · JZL195 · Kaempferol · LY-2183240 · MK-4409 · O-1624 · O-2093 · Oleoylethanolamide (OEA) · Olvanil · Palmitylethanolamide (PEA) · PF-04457845 · PF-622 · PF-750 · PF-3845 · PHOP · URB-447 · URB-597 · URB-602 · URB-754 · VDM-11			
Anticannabinoids (antagonists/inverse agonists/antibodies)	AM-251 · AM-281 · AM-630 · AM-1387 · AM-4113 · AM-6527 · AM-6545 · BML-190 · Brizantin (Бризантин) · CAY-10508 · CB-25 · CB-52 · CB-86 · Dietressa (Дьетресса) · Drinabant (AVE1625) · Hemopressin · Ibipinabant (SLV319) · JTE-907 · LH-21 · LY-320,135 · MDA-77 · MJ-15 · MK-9470 · NESS-0327 · NIDA-41020 · O-606 · O-1184 · O-1248 · O-1918 · O-2050 · O-2654 · Otenabant (CP-945,598) · PF-514273 · PipISB · PSB-SB-487 · Rimonabant (SR141716) · Rosonabant (E-6776) · SR-144,528 · Surinabant (SR147778) · Taranabant (MK-0364) · TM-38837 · VCHSR			
See also: <i>Cannabinoid receptor modulators (cannabinoids by pharmacology)</i> · List of: <i>AM cannabinoids</i> · <i>JWH cannabinoids</i> · <i>Designer drugs § Synthetic cannabinimetics</i>				

Naming cannabinoids in the language of bioethics

	Synthesis		
	Biosynthesis		Synthesis <i>ex vivo</i> and <i>in vitro</i>
	Synthesis <i>in vivo</i>	Synthesis <i>ex vivo</i> in living (<u>GM</u>) organisms <i>Biosynthetic pathways altered by human</i>	
Cannabinoid compound occurring in nature	THC or CBD from <i>Cannabis</i> THC transformed into CBN Anandamide from humans Anandamide from black truffle	THC or CBD from GM <i>Cannabis</i> THC or CBD from GM yeasts etc?	THC or CBD from a lab CBD transformed into THC semisynthetics
Novel cannabinoid compound; not present in nature	n/a	Designer cannabinoids from GM <i>Cannabis</i> or other GM organism	Designer cannabinoids from lab novel semisynthetic cannabinoids

Naming cannabinoids in the language of bioethics

	Synthesis		
	Biosynthesis		Poesynthesis Synthesis <i>ex vivo</i> & <i>in vitro</i>
	EuBiosynthesis Synthesis <i>in vivo</i>	DysBiosynthesis Synthesis <i>ex vivo</i> (GM)	
PaleoCannabinoids Cannabinoid compound occurring in nature	THC or CBD from <i>Cannabis</i> THC transformed into CBN Anandamide from humans Anandamide from black truffle	THC or CBD from GM <i>Cannabis</i> THC or CBD from GM yeasts etc?	THC or CBD from a lab CBD transformed into THC semisynthetics
NeoCannabinoids Novel cannabinoid compound; not present in nature	n/a	Designer cannabinoids from GM <i>Cannabis</i> or other GM organism	Designer cannabinoids from lab novel semisynthetic cannabinoids

A way forward for ‘cannabis’



Pharmacopœial evidence?

	Cannabis	Cannabis extractum	Cannabis tincturæ	Cannabis flos (fructus)	Cannabis fructus (semen)	Dronabinol
1925	<i>Undocumented</i>	In at least 11 pharmacopœias	In at least 7 pharmacopœias	In at least 1 pharmacopœia (MX)	In at least 1 pharmacopœia (MX)	n/a
1958	In at least 16 pharmacopœias	<i>Undocumented</i>	<i>Undocumented</i>	<i>Undocumented</i>	<i>Undocumented</i>	n/a
2020	<i>Undocumented</i>	<i>Undocumented</i>	<i>Undocumented</i>	In at least 3 pharmacopœias (CH, DE, NL)	In at least 2 pharmacopœias (CN, JP)	In at least 1 pharmacopœia (US)

Presence of *Cannabis sativa* pharmaceuticals in legally-binding pharmacopœias, 1925-2020 (non-exhaustive).

Source: Riboulet-Zemouli K (2020)
'Cannabis' ontologies I.

Pharmacopœial evidence?

Ph.Eur. 9

EUROPEAN PHARMACOPOEIA 9.7



04/2019:0765

HERBAL DRUG EXTRACTS

Plantarum medicinalium extracta

DEFINITION

Herbal drug extracts are liquid (liquid extraction preparations), semi-solid (soft extracts and oleoresins) or solid (dry extracts) preparations obtained from *Herbal drugs* (1433) using suitable solvents.

An extract is essentially defined by the quality of the herbal drug, by its production process (extraction solvent(s), method of processing, etc.) and by its specifications.

European Pharmacopoeia monographs for extracts cover the genuine (native) extract and, where present, excipients.

Oleoresins – oleoresina

DEFINITION

Oleoresins are semi-solid extracts composed of a resin in solution in an essential and/or fatty oil and are obtained by evaporation of the solvent(s) used for their production.

This monograph applies to oleoresins produced by extraction and not to natural oleoresins.

TESTS



Water (2.2.13). The oleoresin complies with the limits prescribed.

Solvents. Residual solvents are controlled as described in chapter 5.4, unless otherwise prescribed or justified and authorised.

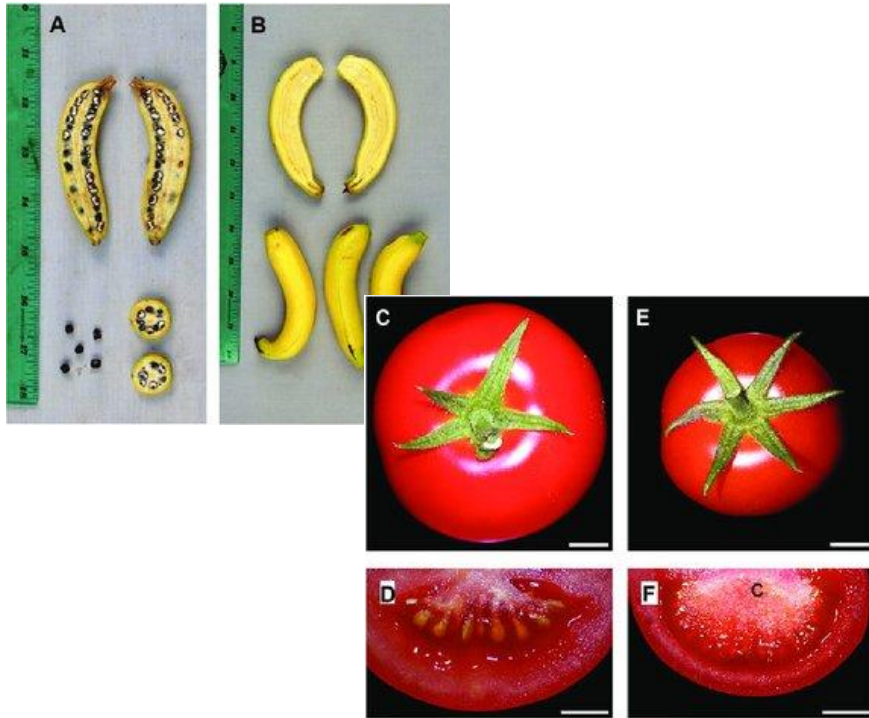
STORAGE

In an airtight container, protected from light.

Is there a way forward?

Proposed term	Definition	What does it looks like?	Similar terms
<i>Cannabis oleoresin</i>	Ethersoluble material separated from capitate epidermal trichomes of <i>C. sativa</i> plants, regardless its texture or composition.	 	<ul style="list-style-type: none">- BHO- Cannabis extracts- Cannabis oils- Cannabis resin- Charras- Dry sift- FECO- Hashish- Rosin- etc.





Source: Joldersma and Zhongchi (2018) *The making of virgin fruit: The molecular and genetic basis of parthenocarpy*. J Exp Bot DOI: 10.1093/jxb/erx446




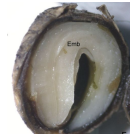


Source: bananaroots.wordpress.com/2016/08/17/transforming-banana-breeding/



Source: Int'l Institute of Tropical Agriculture, slideshare.net/IITA-CO/75-ivan-buddenhagen

Is there a way forward?

Proposed term	Definition	What does it look like?	Similar terms
Fruit of the <i>Cannabis sativa</i> L. plant	<p>Matured extracarpellary structure of the <i>Cannabis sativa</i> plant.</p> <p><i>Can be either seeded (regular) or seedless (parthenocarpic).</i></p> <p><i>While seeded fruits favour the production of seeds, the absence of seed can make parthenocarpic fruits redirect their energy to the production of organic compounds, resulting in increased yield of phytoconstituents (flesh, flavour and fragrances for most food fruits like bananas, oleoresin and fragrances for C. sativa).</i></p>		
Parthenocarpic fruit of the <i>Cannabis sativa</i> L. plant	Mature fruit without seed, produced without pollination, fertilisation or other stimulation. Harvestable part of <i>C. sativa</i> , which contains pharmaceutically-rich.	<div>A</div>  <div>B</div> 	Bractlets, Bracts, Buds, 'Cannabis', Flower, Ganja, Heads, Inflorescences, Marijuana, Seedless floral clusters, Sensi, Sinsemilla, Tops
Regular fruit of the <i>Cannabis sativa</i> L. plant	Mature fruit with seed, produced after pollination. Harvestable part of <i>C. sativa</i> , which contains nutritionally-rich content.	<div>C</div>  <div>D</div> 	Seeds

Photos A, B, C: Riboulet-Zemouli K (2020) '*Cannabis*' ontologies I.
Photo D: Mercado MI, et al. (2019) *Cannabis sativa* (Cannabaceae),
 Caracteres morfo-anatómicos. Beau Bassin: Editorial Académica Española.

Does that matter at all?

JP XVII

Hemp Fruit

Cannabis Fructus

マシニン

Hemp Fruit is the fruit of *Cannabis sativa* Linné (*Moraceae*).

Description Hemp Fruit is a slightly compressed void fruit, 4 – 5 mm in length, 3 – 4 mm in diameter; externally grayish green to grayish brown; pointed at one end, a scar of gynophore at the other end, and crest lines on both sides; outer surface lustrous with white mesh-like pattern; slightly hard pericarp; seed, slightly green in color and internally has grayish white albumen; 100 fruits weigh 1.6 – 2.7 g.

Practically odorless, aromatic on chewing; taste, mild and oily.

Under a microscope <5.0I>, a transverse section reveals the exocarp to be a single-layered epidermis; mesocarp composed of parenchyma, a pigment cell layer and rows of

Source: Japanese Pharmacopœia (2016)
In force in 2020.

Ch.P.

Cannabis Fructus

(火麻仁, Huomaren)

Hemp Seed

Hemp Seed is the dried ripe fruit of *Cannabis sativa* L. (Fam. Moraceae). The drug is collected in autumn when ripe, removed from foreign matter, and dried in the sun.

Description Fruit, ovoid, 4-5.5 mm long, 2.5-4 mm in diameter. Externally greyish-green or greyish-yellow, with slightly fine and white or brown reticulations, ribbed at both sides, somewhat acute at the apex, with round fruit stalk scar at the base. Pericarp thin and brittle, easily broken. Testa green, cotyledons 2, milky-white and oily. Odour, slight; taste, weak.

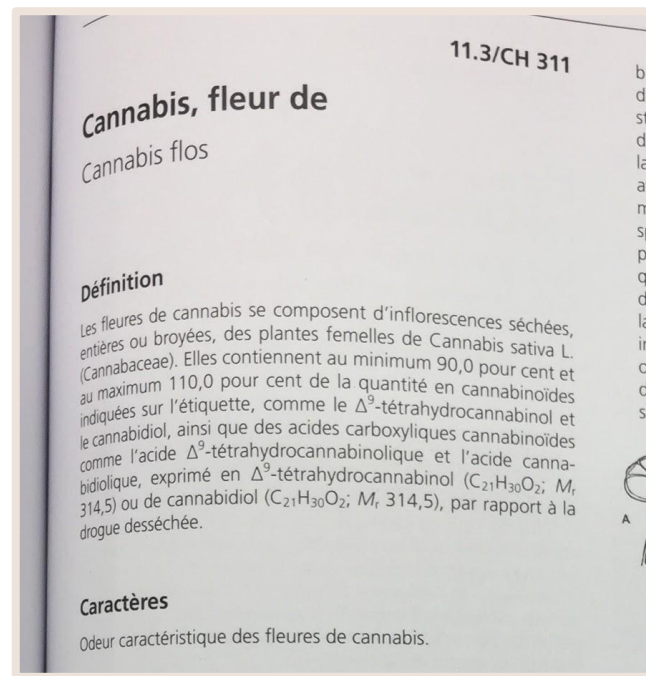
Identification To 2 g of the powder of the fruit, add 50 ml of ether, heat under reflux for 1 hour, filter, wash the residue with 20 ml of ether for one time, discard the ether, add 30 ml of methanol to the residue, heat under reflux for

Source: Pharmacopœia of the People's Republic of China (2015)
In force in 2020.

Does that matter at all?

Ph.Helv. 11

Le Supplément 11.3 de la Ph. Helv. intègre également désormais une monographie **Cannabis (fleur de)**. L'ajout de cette monographie se justifie par le fait qu'il était médicalement nécessaire de pouvoir prescrire des fleurs de cannabis et des préparations à base de fleurs de cannabis faisant état de ratios THC/CBD divers, qui diffèrent des principes actifs actuellement autorisés. En accord avec le BfArM (Bundesamt für Arzneimittel und Medizinprodukte) allemand, c'est la monographie des fleurs de cannabis de la Pharmacopée allemande DAB (Deutsches Arzneibuch) qui a été utilisée comme base de la nouvelle monographie. Après un réexamen pratique, cette monographie a été optimisée par le laboratoire OMCL de Swissmedic et adaptée aux particularités de la Suisse.



Source: *Pharmacopœia Helvetica*, 11ème édition, Supplement No. 3 (2019)
In force in 2020.

Is *Cannabis sui generis*?

Ph.Eur. 9



01/2014:1859

CAPSICUM

Capsici fructus

DEFINITION

Dried ripe fruits of *Capsicum annuum* L. var. *minimum* (Miller) Heiser and small-fruited varieties of *Capsicum frutescens* L.



01/2014:2529

CAPSICUM SOFT EXTRACT, STANDARDISED

Capsici extractum spissum normatum

DEFINITION

Standardised soft extract produced from *Capsicum* (1859).



07/2017:1433

HERBAL DRUGS

Plantae medicinales

DEFINITION

Herbal drugs are mainly whole, fragmented or broken plants or parts of plants in an unprocessed state, usually in dried form but sometimes fresh. In this general monograph, the word 'plant' is used in the broader sense to also include algae, fungi and lichens. Certain exudates that have not been subjected to a specific treatment are also considered to be herbal drugs. Herbal drugs are precisely defined by the botanical scientific name according to the binominal system (genus, species, variety and author).



01/2014:2337

CAPSICUM TINCTURE, STANDARDISED

Capsici tinctura normata

DEFINITION

Standardised tincture produced from *Capsicum* (1859) or Refined and standardised capsicum oleoresin (2336).



01/2014:2336

CAPSICUM OLEORESIN, REFINED AND STANDARDISED

Capsici oleoresina raffinata et normata

DEFINITION

Refined and standardised oleoresin produced from *Capsicum* (1859).

A way forward

for

‘hemp’

Is there a way forward?

Hemp is an
adjective

A way forward...

- 1: Acknowledge our current language is a prohibition-biased social construct
- 2: Back to basics, bridging the gap in *Cannabis* research
- 3: Bioethical nomenclature of cannabinoids
- 4: Distinguishing the 'cannabises' according to their 'methods of obtention'



Kenzi Riboulet-Zemouli

is creating data & ideas about cannabis & hemp policies

patreon.com/teluobir

Supporter

€5

PER MONTH

Join

- General Support

Official Patron

€10

PER MONTH

Join

- Patron-only Q&As
- Private community
- Early access

VIP Patron

€20

PER MONTH

Join

- Patron-only Q&As
- Access to drafts and works-in-progress

¡Gracias!

Kenzi Riboulet-Zemouli
Independent researcher, Barcelona (ES)

 kenzi.zemou.li  kenzi@zemou.li

 patreon.com/teluobir