



Cannabis Conundrum

Canadian Industrial Hemp Industry

**20 YEARS AND
GROWING**

PART 2 - Harvest and Storage

UNIVERSITY OF VERMONT EXTENSION

Northwest Crops and Soils Program

2019 Industrial Hemp Conference: "A Grower's Tutorial"

February 8, 2019

Industrial Hemp Production Calendar



Planting/Harvesting	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
						PLANT FIBRE	PLANT SEED				GRAIN HARVEST	
										FIBRE HARVEST		
EQUIPMENT/SHOP												
Prep	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
			PLANTER						BALER / COMBINE			
			SPRAYER							DRYER		
Repairs	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
	BALER								PLANTER			
		COMBINE								SPRAYER		
GRAIN STORAGE												
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
	MONITOR MOISTURE AND TEMPERATURE				MONITOR THAW			CHECK FOR/CONTROL INSECTS				MONITOR
										CLEAN BIN	FILL	

Harvest

- ▶ If grain is primary product target, crop is ready to harvest when 70-80% of seeds are mature (mottled brown vs. green)
- ▶ Bracts will be noticeably starting to loosen/open to display seed inside



Harvest



- ▶ Grain can be direct cut with combine using draper head
- ▶ Shorter crops in drier climate can be swathed and picked up by combine using pickup head within a few days



Pre-Cleaning & The Importance of Drying

- Harvest around 24% moisture content and dry down to 8% for storage



Drying, Conditioning and Storage



- ▶ Heating can begin within four hours - or even in combine tank on hot, humid days
- ▶ Get grain into aerated bin or grain dryer quickly



Importance of Quality



Table 1: CHEMICAL (Failure to meet Table 1 specs = load subject to rejection)

PARAMETER	SPECIFICATION
Tetrahydrocannabinol (THC)	< 10 ppm
Pesticide Residues	Non Detectable
Heavy Metals	Non Detectable
Aflatoxins (B1 + B2 + G1 + G2)	Non Detectable

Table 2: MICROBIOLOGY (Failure to meet specs = load subject to grade discounts or rejection)

PARAMETER	SPECIFICATION	PARAMETER	SPECIFICATION
STANDARD PLATE COUNT	≤ 500,000 cfu/g	COLIFORMS	≤ 500 cfu/g
YEASTS	≤ 3,000 cfu/g	E.COLI	< 10 cfu/g
MOULDS	≤ 3,000 cfu/g	SALMONELLA	NEGATIVE

Table 3: PHYSICAL CHARACTERISTICS (Failure to meet specs = load subject to grade discounts or rejection)

PARAMETER	SPECIFICATION	PARAMETER	SPECIFICATION
SIZE	> 5 ¼ / 64 inch slotted sieve	MOISTURE	< 9.0% w/w
FLAVOUR	NUTTY	PURITY	99.9% w/w
ODOUR	NORMAL (not musty, sour, foreign)	SCLEROTINIA	< 0.10% w/w
COLOR OF SEED	BROWN	ERGOT	< 0.05% w/w
COLOR OF INNER KERNEL	WHITE (no yellow kernels)	INSEPARABLE SEEDS	< 1.0% w/w
EMPTY KERNEL	< 1%	STONES	< 0.05% w/w
FIREBURNT	< 0.05% w/w	SOFT EARTH PELLETS	< 0.05% w/w
ALLERGENS	< 0.02% w/w	EXCRETA	< 0.02% w/w
PEROXIDE VALUE	< 4.0 meq/kg	INSECTS OR INSECT PARTS	< 2 per 500g
FREE FATTY ACIDS	< 2.0% w/w	BROKEN SEEDS	<12.5% w/w

Grade	Test weight (g/0.5L)	Condition	Conventional	Organic
1	≥270	Meets all above criteria	Accepted	Accepted
2	269-246	Fails one or more above criteria	40% discount	Subject to rejection
3	≤ 245	Heated, stained, mouldy, wet	Subject to rejection	Subject to rejection

Harvest

- ▶ Timing is key for fibre harvest and post harvest management
- ▶ Working with green fibre is easier on equipment



Factors Affecting CBD Harvest

- ▶ Moisture
- ▶ Foreign Matter
- ▶ Handling
- ▶ Age





Harvest Videos



Grower Resources



www.uniseeds.ca

www.hemptrade.ca/eguide

<http://www.uvm.edu/extension/cropsoil/hemp>

<http://hemp.cals.cornell.edu>

<https://norquest.ca/home.aspx>



THANK YOU

Questions?