

CTL · 601



Finished Product Lot Release Certificate



Finished Product Lot E160920A consisting of dried, milled flowering heads of *Cannabis sativa* spp.

Irradiated on **September 27, 2016**

Consisting of 93 x 30 g, 598 x 10 g & 597 x 5 g containers for a total of 1288 irradiated bottles weighed at 11.755 kg (net).

Batch controlled and verified to have been processed, packaged, and labelled in accordance with Standard Operating Procedures, being free of pesticide residue and foreign materials; and having been Quality Control checked to meet all specifications described by Prairie Plant Systems Inc.

MICHELLE TOWNSEND  
QC (Printed name)

*mtownsend*  
(Signature)

07-OCT-2016  
(Date)

RACHNA SAINI  
QA (Printed name)

*Rkarn*  
(Signature)

11-Oct-2016  
(Date)

100-0010

Finished Product Lot E160920A

Test		Specification	Results	Pass/Fail																																																				
Potency	Delta-9-Tetrahydrocannabinol (Δ9-THC)	<0.5% w/w	ND	Pass																																																				
	Tetrahydrocannabinolic Acid (THCA)	<1.0% w/w	0.5 ± 0.0% w/w																																																					
	Cannabidiol (CBD)	<0.5% w/w	0.3 ± 0.0% w/w																																																					
	Cannabidiolic Acid (CBDA)	13.0 ± 2.6% w/w	13.1 ± 0.4% w/w																																																					
	Cannabigerolic Acid (CBGA)	<1.0% w/w	0.1 ± 0.0% w/w																																																					
	Cannabinol (CBN)	<0.5% w/w	ND																																																					
Metals Analysis	Arsenic	< 1.5 µg/g	< 0.05 µg/g	Pass																																																				
	Cadmium	< 0.5 µg/g	0.05 µg/g																																																					
Metals Analysis	Lead	< 1.0 µg/g	0.01 µg/g	Pass																																																				
	Mercury	< 1.5 µg/g	< 0.005 µg/g																																																					
Aluminum, Antimony, Barium, Beryllium, Bismuth, Boron, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Selenium, Silicon, Silver, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc		Levels reported (µg/g)	<table border="0"> <tr><td>[Al</td><td>&lt;0.5</td><td>Mo</td><td>0.5</td></tr> <tr><td>Sb</td><td>&lt;0.1</td><td>Ni</td><td>0.07</td></tr> <tr><td>Ba</td><td>3.8</td><td>P</td><td>10400</td></tr> <tr><td>Be</td><td>&lt;0.01</td><td>Se</td><td>&lt;0.05</td></tr> <tr><td>Bi</td><td>0.03</td><td>Si</td><td>770</td></tr> <tr><td>B</td><td>30</td><td>Ag</td><td>&lt;0.01</td></tr> <tr><td>Ca</td><td>15900</td><td>Sr</td><td>35</td></tr> <tr><td>Cr</td><td>&lt;0.5</td><td>Tl</td><td>&lt;0.05</td></tr> <tr><td>Co</td><td>0.04</td><td>Sn</td><td>&lt;0.05</td></tr> <tr><td>Cu</td><td>13</td><td>Ti</td><td>0.24</td></tr> <tr><td>Fe</td><td>110</td><td>U</td><td>0.01</td></tr> <tr><td>Mg</td><td>5300</td><td>V</td><td>&lt;0.1</td></tr> <tr><td>Mn</td><td>138</td><td>Zn</td><td>82</td></tr> </table>	[Al	<0.5	Mo	0.5	Sb	<0.1	Ni	0.07	Ba	3.8	P	10400	Be	<0.01	Se	<0.05	Bi	0.03	Si	770	B	30	Ag	<0.01	Ca	15900	Sr	35	Cr	<0.5	Tl	<0.05	Co	0.04	Sn	<0.05	Cu	13	Ti	0.24	Fe	110	U	0.01	Mg	5300	V	<0.1	Mn	138	Zn	82	Pass
[Al	<0.5	Mo	0.5																																																					
Sb	<0.1	Ni	0.07																																																					
Ba	3.8	P	10400																																																					
Be	<0.01	Se	<0.05																																																					
Bi	0.03	Si	770																																																					
B	30	Ag	<0.01																																																					
Ca	15900	Sr	35																																																					
Cr	<0.5	Tl	<0.05																																																					
Co	0.04	Sn	<0.05																																																					
Cu	13	Ti	0.24																																																					
Fe	110	U	0.01																																																					
Mg	5300	V	<0.1																																																					
Mn	138	Zn	82																																																					
Water Activity		< 0.650	0.56 ± 0.00	Pass																																																				
Microbiological Purity	Total Aerobic	< 100 CFU/g	0 CFU/g	Pass																																																				
	Total Anaerobic	< 100 CFU/g	0 CFU/g																																																					
	Bile Tolerant Gram Negative Bacteria	< 100 CFU/g	0 CFU/g																																																					
	<i>Escherichia coli</i>	Absent*	Absent																																																					
	<i>Salmonella</i> spp	Absent**	Absent																																																					
	<i>Staphylococcus aureus</i>	< 100 CFU/g	0 CFU/g																																																					
	Yeast and Mould	< 100 CFU/g	0 CFU/g																																																					
Toxic Mould	Identify and report	0 CFU/g																																																						
Mycotoxins	Aflatoxin B1	< 5 ng/g of substance	BDL (< 1.5 ng/g)	Pass																																																				
	Aflatoxin B2	< 20 ng/g of substance	BDL (< 1.5 ng/g)																																																					
	Aflatoxin G1	< 20 ng/g of substance	BDL (< 1.5 ng/g)																																																					
	Aflatoxin G2	< 20 ng/g of substance	BDL (< 1.5 ng/g)																																																					
	Ochratoxin A	< 20 ng/g of substance	BDL (< 10 ng/g)																																																					

\* = not detected in 1 gram; \*\* = not detected in 25 grams; ND = not detected (no peaks identified); NA = Not Assayed

CTL-401

V.01



## Finished Product Lot Release Certificate



Finished Product Lot D160712A consisting of dried, milled flowering heads of *Cannabis sativa* spp.

Irradiated on **July 19, 2016**

Consisting of 530 x 30 g, 743 x 10 g & 208 x 5 g containers for a total of 1481 irradiated bottles weighed at 24.370 kg (net).

Batch controlled and verified to have been processed, packaged, and labelled in accordance with Standard Operating Procedures, being free of pesticide residue and foreign materials; and having been Quality Control checked to meet all specifications described by Prairie Plant Systems Inc.

MICHELLE TOWNSEND

QC (Printed name)

*Michelle Townsend*

(Signature)

12-SEPT-16

(Date)

RACHNA SAINI

QA (Printed name)

*Rachna Saini*

(Signature)

14 Sept 2016

(Date)

**Finished Product Lot D160712A**

Test		Specification	Results	Pass/Fail																																																				
Potency	Delta-9-Tetrahydrocannabinol ( $\Delta^9$ -THC)	<0.5% w/w	0.3 $\pm$ 0.0% w/w	<b>Pass</b>																																																				
	Tetrahydrocannabinolic Acid (THCA)	22.0 $\pm$ 4.4% w/w	20.2 $\pm$ 1.0% w/w																																																					
	Cannabidiol (CBD)	<0.5% w/w	ND																																																					
	Cannabidiolic Acid (CBDA)	<0.7% w/w	0.04 $\pm$ 0.0% w/w																																																					
	Cannabigerolic Acid (CBGA)	<1.0% w/w	0.5 $\pm$ 0.0% w/w																																																					
	Cannabinol (CBN)	<0.5% w/w	ND																																																					
Metals Analysis	Arsenic	< 1.5 $\mu$ g/g	< 0.05 $\mu$ g/g	<b>Pass</b>																																																				
	Cadmium	< 0.5 $\mu$ g/g	0.06 $\mu$ g/g																																																					
	Lead	< 1.0 $\mu$ g/g	0.01 $\mu$ g/g																																																					
	Mercury	< 1.5 $\mu$ g/g	< 0.05 $\mu$ g/g																																																					
	Aluminum, Antimony, Barium, Beryllium, Bismuth, Boron, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Selenium, Silicon, Silver, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc	Levels reported ( $\mu$ g/g)	<table border="0"> <tr><td>Al</td><td>&lt;0.5</td><td>Mo</td><td>0.4</td></tr> <tr><td>Sb</td><td>&lt;0.1</td><td>Ni</td><td>&lt;0.05</td></tr> <tr><td>Ba</td><td>4.2</td><td>P</td><td>8300</td></tr> <tr><td>Be</td><td>&lt;0.01</td><td>Se</td><td>&lt;0.05</td></tr> <tr><td>Bi</td><td>&lt;0.01</td><td>Si</td><td>1600</td></tr> <tr><td>B</td><td>30</td><td>Ag</td><td>&lt;0.01</td></tr> <tr><td>Ca</td><td>16500</td><td>Sr</td><td>35</td></tr> <tr><td>Cr</td><td>&lt;0.5</td><td>Tl</td><td>&lt;0.05</td></tr> <tr><td>Co</td><td>&lt;0.01</td><td>Sn</td><td>&lt;0.05</td></tr> <tr><td>Cu</td><td>9.2</td><td>Ti</td><td>&lt;0.05</td></tr> <tr><td>Fe</td><td>120</td><td>U</td><td>&lt;0.01</td></tr> <tr><td>Mg</td><td>5900</td><td>V</td><td>&lt;0.1</td></tr> <tr><td>Mn</td><td>108</td><td>Zn</td><td>73</td></tr> </table>	Al	<0.5	Mo	0.4	Sb	<0.1	Ni	<0.05	Ba	4.2	P	8300	Be	<0.01	Se	<0.05	Bi	<0.01	Si	1600	B	30	Ag	<0.01	Ca	16500	Sr	35	Cr	<0.5	Tl	<0.05	Co	<0.01	Sn	<0.05	Cu	9.2	Ti	<0.05	Fe	120	U	<0.01	Mg	5900	V	<0.1	Mn	108	Zn	73	<b>Pass</b>
Al	<0.5	Mo	0.4																																																					
Sb	<0.1	Ni	<0.05																																																					
Ba	4.2	P	8300																																																					
Be	<0.01	Se	<0.05																																																					
Bi	<0.01	Si	1600																																																					
B	30	Ag	<0.01																																																					
Ca	16500	Sr	35																																																					
Cr	<0.5	Tl	<0.05																																																					
Co	<0.01	Sn	<0.05																																																					
Cu	9.2	Ti	<0.05																																																					
Fe	120	U	<0.01																																																					
Mg	5900	V	<0.1																																																					
Mn	108	Zn	73																																																					
Water Activity		< 0.650	0.66 $\pm$ 0.01	<b>Pass†</b>																																																				
Microbiological Purity	Total Aerobic	< 100 CFU/g	0 CFU/g	<b>Pass</b>																																																				
	Total Anaerobic	< 100 CFU/g	0 CFU/g																																																					
	Bile Tolerant Gram Negative Bacteria	< 100 CFU/g	0 CFU/g																																																					
	<i>Escherichia coli</i>	Absent*	Absent																																																					
	<i>Salmonella</i> spp	Absent**	Absent																																																					
	<i>Staphylococcus aureus</i>	< 100 CFU/g	0 CFU/g																																																					
	Yeast and Mould	< 100 CFU/g	0 CFU/g																																																					
	Toxic Mould	Identify and report	0 CFU/g																																																					
Mycotoxins	Aflatoxin B1	< 5 ng/g of substance	BDL (< 1.5 ng/g)	<b>Pass</b>																																																				
	Aflatoxin B2	< 20 ng/g of substance	BDL (< 1.5 ng/g)																																																					
	Aflatoxin G1	< 20 ng/g of substance	BDL (< 1.5 ng/g)																																																					
	Aflatoxin G2	< 20 ng/g of substance	BDL (< 1.5 ng/g)																																																					
	Ochratoxin A	< 20 ng/g of substance	BDL (< 10 ng/g)																																																					

\* = not detected in 1 gram; \*\*= not detected in 25 grams; ND = not detected (no peaks identified); NA = Not Assayed  
 † See deviation report 16-09-12-MT-01

**Figure 1**

Day	Post CCI Ipsilateral side [Threshold response log (g × 10000)]									
	1	2	3	4	5	6	7	8	9	10
0	3.328	3.328	3.049	3.049	3.328	3.328	3.328	3.328	3.328	3.049
3	2.602	2.602	1.903	1.903	1.903	1.903	1.903	1.903	1.903	1.903
7	2.602	2.602	1.903	2.602	2.301	1.903	1.903	1.903	1.903	1.903
14	2.301	2.301	2.602	1.903	2.301	2.602	1.903	1.903	1.903	2.602
21	2.845	1.903	2.301	2.301	2.301	2.301	1.903	2.602	1.903	1.903
28	2.845	2.602	1.903	3.049	2.845	2.301	1.903	2.301	1.903	1.903
35	2.602	3.049	2.845	3.049	2.602	2.602	2.602	2.602	1.903	2.845
42	3.328	3.328	2.845	3.328	3.049	3.328	3.328	2.845	2.845	2.845
Contralateral side [Threshold response log (g × 10000)]										
Day	1	2	3	4	5	6	7	8	9	10
0	3.328	3.328	3.049	3.049	3.328	2.845	3.328	3.328	3.328	3.049
3	3.328	3.328	3.049	3.049	3.328	2.845	3.328	3.328	3.328	3.049
7	3.328	3.328	3.049	3.049	3.328	2.845	3.328	3.328	3.328	3.049
14	3.328	3.328	3.328	3.328	3.328	3.328	2.845	3.049	3.328	3.328
21	3.328	3.049	3.049	3.328	3.049	2.845	3.328	2.845	3.328	3.328
28	3.328	3.328	3.328	3.328	3.049	2.845	2.845	2.845	3.328	2.845
35	3.328	3.049	2.845	3.328	3.049	2.845	2.845	3.328	3.049	2.845
42	3.328	3.328	3.328	3.328	3.049	3.328	3.328	2.845	2.845	3.328
Non-operated Mice [Threshold response log (g × 10000)]										
Day	1	2	3	4	5	6	7	8	9	10
0	3.328	3.328	3.049	3.049	3.328	2.845	3.328	3.328	3.328	3.049
3	2.845	3.049	3.328	3.049	3.328	3.049	2.845	3.328	3.328	3.328
7	3.328	3.049	3.328	3.049	3.049	3.049	3.049	2.845	3.049	2.845
14	3.328	3.049	3.328	3.328	3.049	3.049	3.328	2.845	3.049	2.845
21	3.049	3.328	2.845	3.328	2.845	3.049	3.328	3.049	3.328	3.328
28	3.049	3.328	3.049	3.328	2.845	3.049	2.845	3.328	3.328	3.328
35	3.049	3.328	3.049	3.049	3.049	2.845	3.049	3.328	2.845	3.049
42	2.845	3.328	2.845	3.049	3.049	3.328	3.328	3.328	3.328	3.049

<b>Figure 2A [Threshold response log (g × 10000)]</b>								
<b>Females</b>								
<b>Dose (mg/kg) Baseline for Vehicle</b>								
<b>0</b>	2.301	2.301	1.903	2.301	2.301	2.301	2.602	1.903
<b>Baseline for different doses CT-921 Extract</b>								
<b>5.6</b>	2.031	1.903	1.903	2.301	2.301	2.602	2.301	2.301
<b>11.3</b>	1.903	2.301	1.903	2.301	2.301	2.301	2.602	1.903
<b>16.9</b>	2.301	1.903	1.903	2.301	2.301	2.602	2.602	1.903
<b>22.6</b>	1.903	2.301	1.903	2.301	1.903	2.301	2.602	1.903
<b>45.1</b>	2.301	1.903	1.903	2.301	1.903	2.301	1.903	2.301
<b>20 min after treatment with Vehicle (0 mg/kg) or CT-921 Extract</b>								
<b>0</b>	2.301	2.301	1.903	2.301	2.301	2.301	2.602	1.903
<b>5.6</b>	2.204	1.903	1.903	2.301	2.602	2.845	3.204	2.301
<b>11.3</b>	3.778	2.301	2.301	2.845	2.301	2.301	1.903	2.602
<b>16.9</b>	4	4.146	4.301	1.903	3.204	4.301	3.602	4.301
<b>22.6</b>	4.146	4.301	4.301	3.204	3.778	4.301	4.301	4.301
<b>45.1</b>	4.301	4.301	4.301	4.301	4.301	4.301	4.301	4.301

<b>Figure 2B Vehicle</b>								
<b>[Threshold response log (g × 10000)]</b>								
<b>Time (min)</b>								
<b>0</b>	1.903	1.903	1.903	2.301	1.903	1.903	1.903	1.903
<b>10</b>	1.903	1.903	1.903	2.301	1.903	1.903	1.903	1.903
<b>20</b>	1.903	1.903	1.903	2.301	1.903	1.903	1.903	1.903
<b>40</b>	1.903	1.903	1.903	2.301	1.903	1.903	1.903	1.903
<b>80</b>	1.903	1.903	1.903	1.903	1.903	1.903	1.903	1.903
<b>120</b>	1.903	1.903	1.903	1.903	1.903	1.903	1.903	1.903
<b>180</b>	1.903	1.903	1.903	1.903	1.903	1.903	1.903	1.903
<b>240</b>	1.903	1.903	1.903	1.903	1.903	1.903	1.903	1.903

<b>Figure 2B CT-921 Extract at 16.9 mg/kg</b>								
<b>[Threshold response log (g × 10000)]</b>								
<b>Time (min)</b>								
<b>0</b>	1.903	1.903	1.903	1.903	1.903	1.903	1.903	2.301
<b>10</b>	3.049	3.049	2.301	2.602	2.602	4.267	4.267	2.602
<b>20</b>	2.301	3.049	3.328	2.602	2.602	4.267	4.267	4.267
<b>40</b>	1.903	3.049	3.049	1.903	2.602	4.267	4.267	4.267
<b>60</b>	1.903	2.845	2.602	1.903	2.301	4.199	3.99	4.267
<b>120</b>	1.903	2.301	2.301	1.903	2.301	1.903	3.99	4.199
<b>180</b>	1.903	1.903	2.301	1.903	1.903	1.903	2.845	1.903
<b>240</b>	1.903	1.903	1.903	1.903	1.903	1.903	1.903	1.903

Figure 2C [Threshold response log (g x 10000)] Dose(mg/kg) Females: Baseline for Vehicle								
<b>0</b>	1.903	2.301	2.301	1.903	1.903	2.301	1.903	1.903
Baseline for different doses of CT-928 Extract								
<b>0.6</b>	1.903	2.301	2.301	1.903	2.301	1.903	1.903	2.301
<b>1.2</b>	1.903	1.903	2.301	1.903	2.301	1.903	1.903	1.903
<b>2.3</b>	1.903	1.903	2.301	1.903	2.301	1.903	1.903	1.903
<b>6.9</b>	1.903	2.301	2.301	1.903	2.301	1.903	1.903	1.903
20 min after treatment with Vehicle (0 mg/kg) or CT-928 Extract								
<b>0</b>	1.903	2.301	2.301	1.903	1.903	1.903	1.903	2.301
<b>0.6</b>	1.903	2.301	2.602	3.99	2.301	3.328	2.301	2.845
<b>1.2</b>	2.845	3.328	2.301	4.199	1.903	3.328	3.328	3.75
<b>2.3</b>	4.267	3.75	4.267	3.328	3.328	3.328	3.75	3.75
<b>6.9</b>	3.049	3.99	4.267	3.328	3.99	4.267	4.199	3.328

Figure 2D[Threshold response log (g × 10000)] Time (min) Vehicle								
<b>0</b>	1.903	2.301	2.301	1.903	1.903	1.903	1.903	2.301
<b>10</b>	1.903	2.301	2.301	1.903	1.903	2.301	1.903	1.903
<b>20</b>	1.903	2.301	2.301	1.903	2.301	1.903	1.903	2.301
<b>40</b>	1.903	2.301	2.301	1.903	2.301	1.903	1.903	2.301
<b>60</b>	1.903	2.301	2.301	1.903	2.301	1.903	1.903	2.301
<b>120</b>	1.903	2.301	2.301	1.903	2.301	1.903	1.903	2.301
<b>240</b>	1.903	2.301	2.301	1.903	2.301	1.903	1.903	2.301

Figure 2D[Threshold response log (g × 10000)] Time (min) CT-928 Extract at 2.3 mg/kg								
<b>0</b>	1.903	1.903	1.903	1.903	1.903	1.903	2.301	1.903
<b>10</b>	4.267	3.75	4.267	3.328	3.328	3.328	3.75	3.75
<b>20</b>	4.267	2.602	4.267	3.328	3.328	3.75	3.75	4.267
<b>40</b>	4.267	2.301	3.75	3.049	3.328	3.328	3.328	3.99
<b>60</b>	4.199	1.903	3.328	3.049	2.602	2.845	3.049	2.845
<b>120</b>	4.199	1.903	3.328	2.602	2.602	2.602	1.903	2.602
<b>240</b>	3.049	1.903	2.602	1.903	1.903	1.903	1.903	1.903

<b>Dose (mg/kg) Figure 3A: CT-921 Extract Effects on Temperature (degrees C)</b>								
0.1	38.3	38.4	38.7	38.1	38.9	39.1	38.9	38.9
5.6	38.6	37.8	35.9	38.7	37.9	36.4	36.3	37.5
11.3	38.2	38.3	34	38.1	37.1	34.2	36.8	38.2
22.6	32.2	33.6	38	33.8	35.5	35	33	33.3
45.1	31.6	34.3	34	33.7	32.7	35	33.2	32.3
<b>Dose (mg/kg) Figure 3B: CT-928 Extract Effects on Temperature (degrees C)</b>								
0.1	38	38	39.3	38.2	38.7	39.1	39.2	38.8
0.25	38.7	38.9	38.1	38.5	38.4	39.3	38.7	39.1
0.5	38.6	38.1	37.2	38.6	38.9	36	37.9	36.4
1	36.1	36.2	33.8	33.8	33.8	36.2	36.1	38
2	35.8	37.3	35.5	33.4	33.8	33.4	33.6	34.7
6	33.4	33.1	33.5	31.3	32.5	32.5	30.5	31.8
<b>Dose (mg/kg) Figure 3C: CT-921 Extract Effects on Respiration (breaths/min)</b>								
0.1	228	192	182	220	180	255	230	177
5.6	196	252	195	244	183	180	115	193
11.3	193	128	216	120	112	204	180	207
22.6	140	146	217	139	194	168	156	90
45.1	65	117	117	97	134	98	83	82
<b>Dose (mg/kg) Figure 3D: CT-928 Extract Effects on Respiration (breaths/min)</b>								
0.1	243	239	183	140	230	200	230	268
0.3	122	188	232	200	200	195	230	248
0.6	184	193	240	203	157	140	148	235
1.2	126	220	104	150	187	176	187	151
2.3	140	88	186	82	140	100	125	178
6.9	104	99	95	62	97	74	65	84

<b>Males [Threshold response log (g × 10000)]</b>								
<b>Dose(mg/kg) Baseline for Vehicle</b>								
0	2.301	2.602	1.903	2.301	2.301	2.301	2.301	1.903
<b>Baseline for different doses of CT-921 Extract</b>								
5.6	2.301	1.903	1.903	2.301	2.301	2.602	2.301	2.301
11.3	2.602	2.301	2.602	2.301	2.301	2.301	2.602	1.903
22.6	2.301	1.903	2.301	2.301	2.301	2.602	2.602	1.903
45.1	1.903	2.301	1.903	2.301	2.602	2.301	2.602	1.903
<b>20 min after treatment with Vehicle (0 mg/kg) or CT-921 Extract</b>								
0	2.602	1.903	2.301	1.903	2.602	1.903	2.301	2.301
5.6	3.602	2.301	2.845	1.903	2.301	1.903	1.903	2.301
11.3	3.602	2.301	2.301	1.903	2.845	2.301	2.301	2.845
22.6	3.602	1.903	2.845	2.602	2.602	2.845	4.146	2.602
45.1	3.602	2.845	3.778	4.301	4.301	3.602	4.301	4.301