



THE UNIVERSITY of  
**MISSISSIPPI**

NATIONAL CENTER FOR NATURAL PRODUCTS RESEARCH

A DIVISION OF THE RESEARCH INSTITUTE OF PHARMACEUTICAL SCIENCES, SCHOOL OF PHARMACY

April 8, 2019

Mr. Robert Walsh  
Chief, Regulatory Affairs Branch,  
NIH/NIDA Division of Therapeutics  
Medical Consequences of Drug Abuse  
6001 Executive Blvd., Room 4141 MSC-9551  
Bethesda, MD 20892-9551

Dear Mr. Walsh:

Enclosed you will find Quarterly Report #139 from the Potency Monitoring Program performed by the University of Mississippi under the National Institute on Drug Abuse contract number N01DA-15-7793. This report covers the months of December 23, 2018 through March 22, 2019 under the above stated contract.

Should you have any questions about this information, please call us at any time.

Sincerely,

Mahmoud A. ElSohly, Ph.D.

Research Professor, and Professor of Pharmaceutics and Drug Delivery  
School of Pharmacy  
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Enc.

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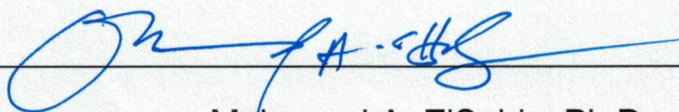
**POTENCY MONITORING PROGRAM**

**QUARTERLY REPORT NUMBER 139**

REPORTING PERIOD: 12/23/2018 - 03/22/2019

National Institute on Drug Abuse

Contract Number: N01DA-15-7793



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Mahmoud A. ElSohly, Ph.D.

Director

NIDA Marijuana Project

National Center for Natural Products Research

a Division of the Research Institute of Pharmaceutical Sciences

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## INTRODUCTION

Under contract with the National Institute on Drug Abuse (NIDA) the National Center for Natural Products Research (NCNPR) located at the University of Mississippi (UM) performs analysis of illicit cannabis products submitted by the Drug Enforcement Administration (DEA) and by state and local police agencies. The purpose of these analyses is to monitor the potency of cannabis and provide to NIDA, DEA and other interested agencies a comprehensive base for information on confiscated materials with respect to time, geographical area of confiscation, and the product type (cannabis, hashish, and hash oil). Information provided by the potency monitoring program is useful to the DEA and NIDA in assessing the illicit distribution patterns and potential health impact of cannabis use.

Each agency which submits specimens to the PM program is assigned a "Supplier Number" in order to identify that agency. Results of individual specimens are provided to each supplier.

Each specimen (a representative sample of a larger quantity of seized material) received at the UM laboratory is assigned a unique "PM Number" to identify the specimen in the potency monitoring database. Data associated with each specimen includes:

- \* the information provided by the supplier such as the location and quantity of the seizure and physical characteristics of the seized materials
- \* physical characteristics of the specimen observed in the laboratory
- \* results of laboratory testing

Various forms of cannabis products tested in the PM laboratory are classified into one of three categories:

- \* cannabis (plant material)
- \* hashish (dried resin)
- \* hash oil (cannabis extract)

Cannabis is further described as:

- \* marijuana (male and female plants)
- \* sinsemella (unfertilized female plants)
- \* ditchweed (non-drug type)

Each type of cannabis is further grouped by:

- \* leaves
- \* loose material (manicured material)
- \* buds
- \* bricks (compressed plant material)
- \* thai sticks (wrapped around bamboo)
- \* seeds/stems (byproducts of manicuring)

A specimen may be classified as ditchweed due to information provided by the supplier or due to the results of laboratory testing. A specimen with a THC concentration less than 1.0% and with a CBD concentration which is greater than or equal to the THC concentration is classified as ditchweed.

Each specimen is analyzed by gas chromatography (GC) for the major psychoactive component, Delta-9-tetrahydrocannabinol (THC), as well as minor cannabinoids that contribute to the chemical profile of a specimen. These minor cannabinoids include cannabidiol (CBD), cannabichromene (CBC), Delta-8-tetrahydrocannabinol (D-8 THC), cannabinol (CBN), cannabigerol (CBG), and tetrahydrocannabivarin (THCV). Each cannabinoid concentration presented in this report represent the percent by weight (% w/w) of that component in representative samples of the specimen. Specimens unsuitable for analysis (e.g. wet, seeds and stems, contaminated with mold, or insufficient weight of material for analysis) are not tested and are not included in result statistics, but are included in total counts of specimens processed.

Specimens submitted by state and local agencies are considered to be "domestic" seizures, while those submitted by DEA regional laboratories represent "non-domestic" seizures.

The 'n' heading in some tables in this report denotes total numbers of specimens. In time-based data, 'Year' indicates the year of seizure not the date of receipt or analysis.

Although potency monitoring data has been collected since 1973, this report presents only current data collected since 1995. Data from the earlier years has been archived at NCNPR and is available for study. In order to provide custom search parameters and custom reports to government agencies the PM database may be accessed online by authorized users.



## SUMMARY

Since 1995 and as of 03/22/2019 the Potency Monitoring Program has analyzed and compiled data on 55,129 cannabis, 886 hashish, and 448 hash oil specimens. Of these, 24.56% were submitted by state and local agencies and the remainder submitted by DEA regional laboratories. The cannabis specimen since 1995 having the highest potency, seized on 08/31/2017 and received from DEA North Central Laboratory, was found to contain 41.75% THC.

During this reporting period, 170 total cannabis specimens were **received** for analysis from DEA laboratories. The specimens included 163 cannabis, 1 hashish, and 6 hash oil. Of these samples, 2 specimen(s) were unsuitable for analysis.

During this reporting period, 153 total cannabis specimens were **analyzed** from DEA laboratories, including 147 cannabis, 3 hashish, and 3 hash oil.

Non-domestic cannabis specimens are those received from DEA regional laboratories. These were found to contain THC ranging from 0.83% to 28.74%. From this group of specimens the one having the highest potency, received from DEA Southeast Regional Lab, was found to contain 28.74% THC.

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Table 1a. THC Potency from 1995 to Present, by Type

		n	High THC %	Low THC %
All Samples	Cannabis	55,129	41.75	0.01
	Hashish	886	82.96	0.01
	Hash Oil	448	89.72	0.01
State/Local Domestic	Cannabis	14,088	35.38	0.01
	Hashish	4	52.87	5.11
	Hash Oil	2	0.23	0.21
DEA Labs Non-Domestic	Cannabis	41,041	41.75	0.02
	Hashish	882	82.96	0.01
	Hash Oil	446	89.72	0.01

Table 1b. THC Potency from December 23, 2018 to March 22, 2019

		n	High THC %	Low THC %
All Samples	Cannabis	394	28.74	0.28
	Hashish	3	55.33	1.53
	Hash Oil	3	83.46	63.26
State/Local Domestic	Cannabis	247	27.68	0.28
	Hashish	0	-	-
	Hash Oil	0	-	-
DEA Lab Non-Domestic	Cannabis	147	28.74	0.83
	Hashish	3	55.33	1.53
	Hash Oil	3	83.46	63.26



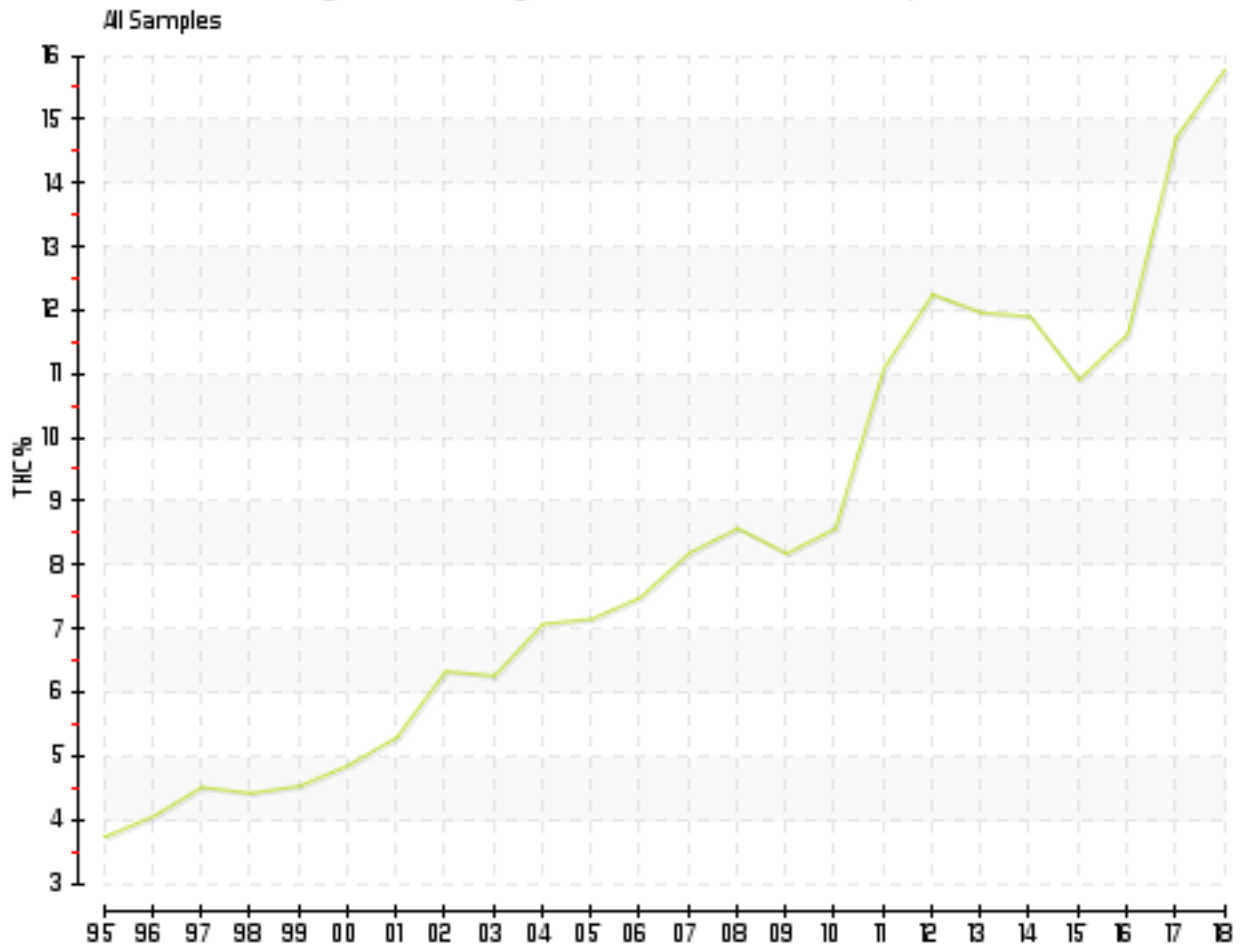
Table 2a. THC Potency of Domestic and Non-Domestic Cannabis Samples from 1995 to Present, by Year

	State		DEA Lab		Total	
Year	n	THC %	n	THC %	n	THC %
1995	997	2.93	3763	3.96	4760	3.75
1996	1029	3.48	1402	4.51	2431	4.07
1997	1118	3.95	1337	5.01	2455	4.53
1998	922	3.75	1341	4.91	2263	4.43
1999	833	4.43	1825	4.60	2658	4.55
2000	1185	4.10	1929	5.34	3114	4.87
2001	1009	3.97	1687	6.11	2696	5.31
2002	702	4.29	1690	7.20	2392	6.35
2003	625	3.67	1872	7.15	2497	6.28
2004	694	4.20	1914	8.14	2608	7.09
2005	656	4.21	2295	8.02	2951	7.17
2006	775	4.15	2081	8.76	2856	7.51
2007	883	4.86	2143	9.58	3026	8.21
2008	701	4.78	2000	9.93	2701	8.59
2009	966	4.87	2073	9.75	3039	8.20
2010	901	4.14	2260	10.36	3161	8.59
2011	14	7.41	2342	11.13	2356	11.11
2012		0.00	2100	12.27	2100	12.27
2013		0.00	1230	11.98	1230	11.98
2014		0.00	971	11.92	971	11.92
2015		0.00	1000	10.93	1000	10.93
2016		0.00	796	11.64	796	11.64
2017	6	13.90	666	14.75	672	14.74
2018	56	13.70	324	16.16	380	15.80
<b>Total</b>	<b>14088</b>	<b>4.13</b>	<b>41041</b>	<b>8.25</b>	<b>55129</b>	<b>7.20</b>

Table 2b. CBD Potency of Domestic and Non-Domestic Cannabis Samples from 1995 to Present, by Year

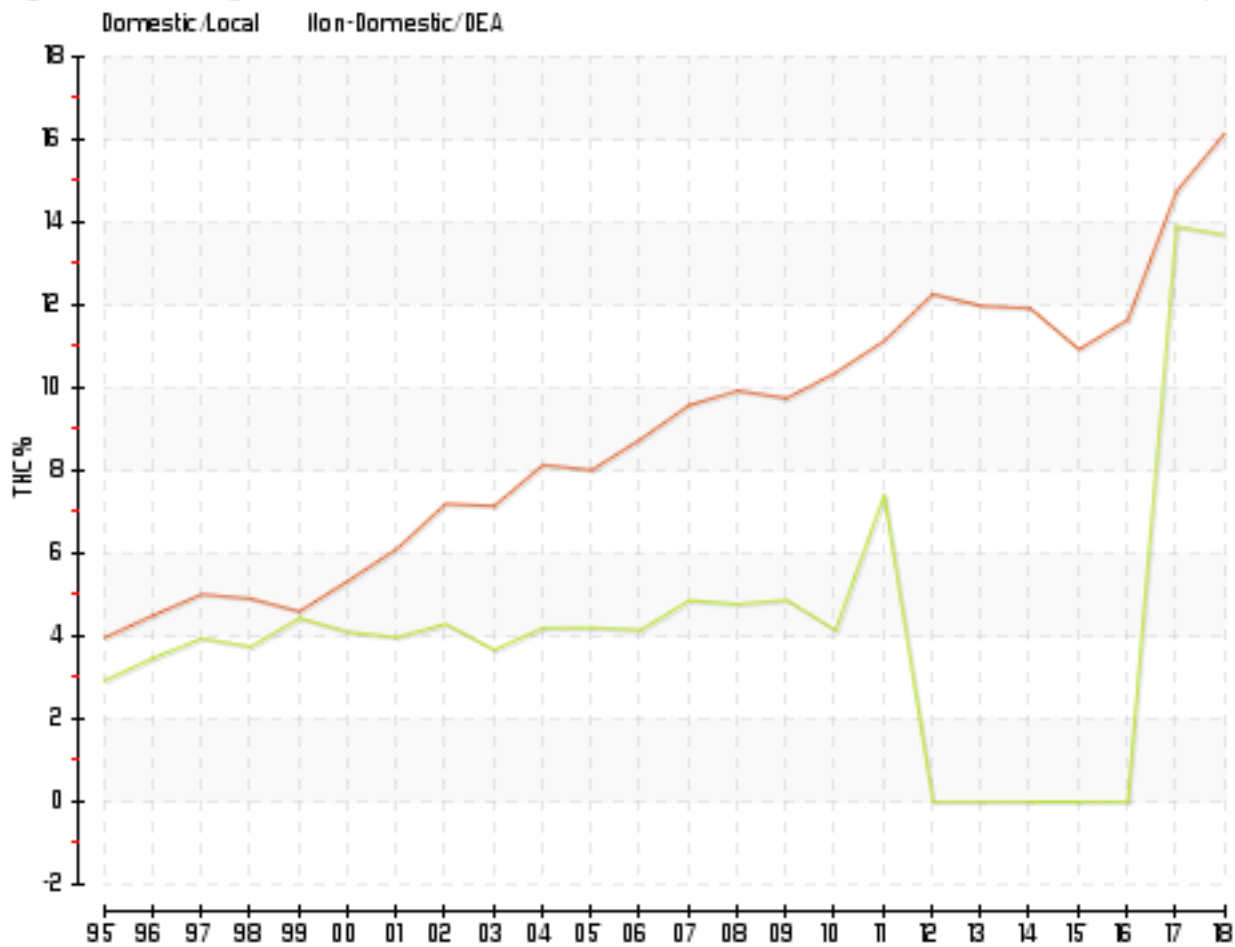
	State		DEA Lab		Total	
Year	n	CBD %	n	CBD %	n	CBD %
1995	997	0.41	3763	0.28	4760	0.31
1996	1029	0.49	1402	0.37	2431	0.42
1997	1118	0.40	1337	0.41	2455	0.40
1998	922	0.40	1341	0.41	2263	0.41
1999	833	0.46	1825	0.42	2658	0.43
2000	1185	0.33	1929	0.52	3114	0.45
2001	1009	0.32	1687	0.55	2696	0.47
2002	702	0.31	1690	0.47	2392	0.42
2003	625	0.41	1872	0.47	2497	0.46
2004	694	0.29	1914	0.51	2608	0.46
2005	656	0.32	2295	0.49	2951	0.45
2006	775	0.37	2081	0.43	2856	0.41
2007	883	0.30	2143	0.46	3026	0.41
2008	701	0.26	2000	0.41	2701	0.37
2009	966	0.26	2073	0.39	3039	0.35
2010	901	0.22	2260	0.28	3161	0.27
2011	14	0.49	2342	0.22	2356	0.22
2012		0.00	2100	0.20	2100	0.20
2013		0.00	1230	0.16	1230	0.16
2014		0.00	971	0.16	971	0.16
2015		0.00	1000	0.18	1000	0.18
2016		0.00	796	0.18	796	0.18
2017	6	0.01	666	0.13	672	0.13
2018	56	1.23	324	0.21	380	0.36

Figure 1. THC by Year - All Cannabis Samples



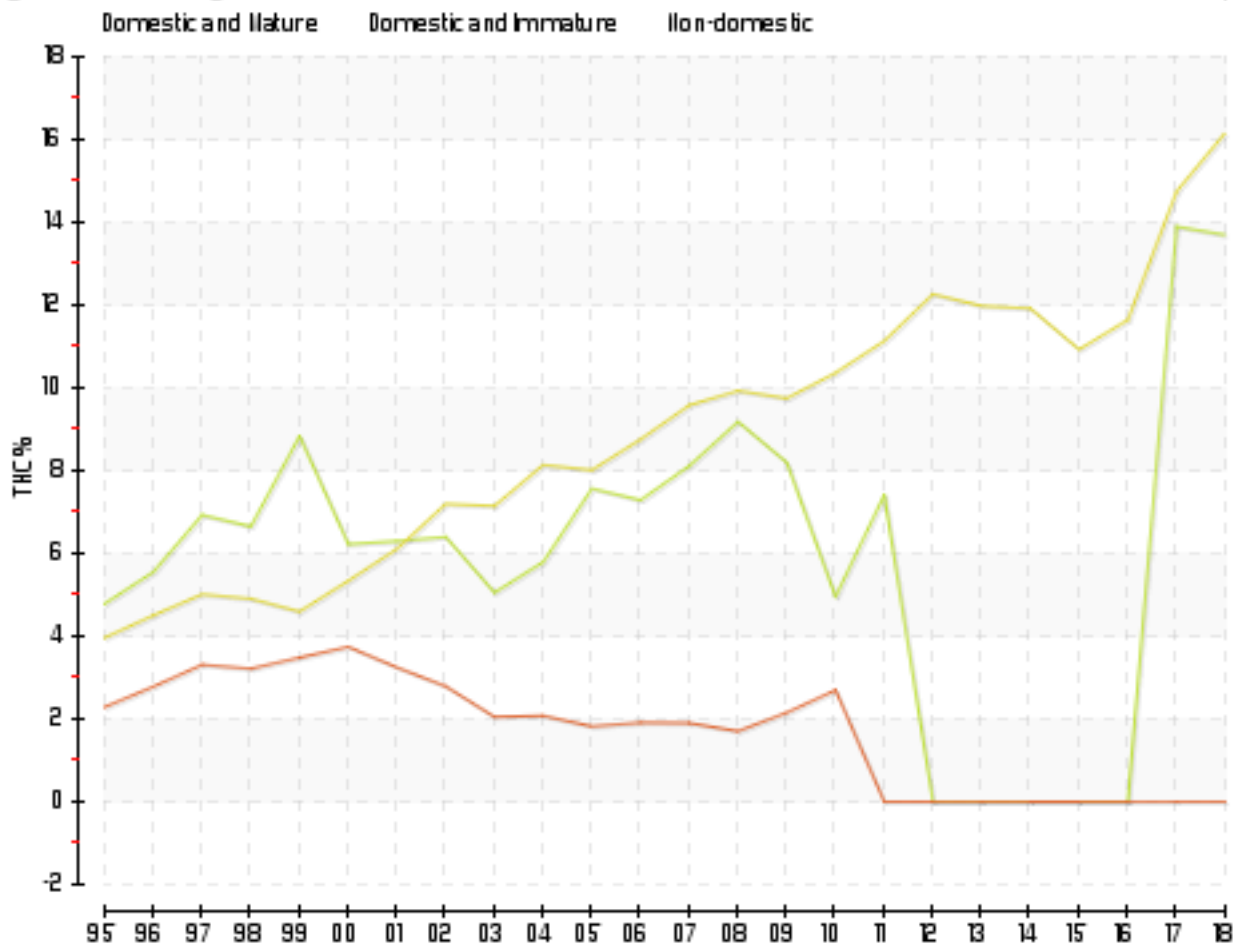
\* The current year is always an incomplete year and only reflects data analyzed to the end date on this report.

Figure 2. THC by Year - Domestic/Local and Non-Domestic/DEA Cannabis Samples



\* The current year is always an incomplete year and only reflects data analyzed to the end date on this report.

Figure 3. THC by Year - Domestic and Non-domestic, Mature and Immature Samples



\* The current year is always an incomplete year and only reflects data analyzed to the end date on this report.

Table 3a. THC Potency of Analyzed Cannabis Specimen Types from 1995 to Present

		n	High THC %	Low THC %
Marijuana	Loose Material	6,303	26.80	0.02
	Buds	9,031	41.75	0.07
	Leaves	9,009	26.57	0.01
	Bricks	11,988	27.13	0.02
	Thai Sticks	1	3.27	3.27
	Unknown	14	9.49	0.90
Sinsemella	Loose Material	50	18.16	0.64
	Buds	17,484	36.79	0.03
	Leaves	63	22.32	0.32
	Bricks	10	8.46	4.40
	Unknown	0	-	-
Ditchweed	Loose Material	78	1.17	0.04
	Buds	382	1.31	0.01
	Leaves	680	2.40	0.01
	Bricks	21	0.91	0.07
	Unknown	0	-	-

Table 3b. THC Potency of Analyzed Cannabis Specimens  
 from December 23, 2018 to March 22, 2019

		n	High THC %	Low THC %
Marijuana	Loose Material	1	1.11	1.11
	Buds	81	21.86	0.35
	Leaves	12	8.01	0.29
	Bricks	0	-	-
	Thai Sticks	0	-	-
	Unknown	0	-	-
Sinsemella	Loose Material	0	-	-
	Buds	280	28.74	0.80
	Leaves	0	-	-
	Bricks	0	-	-
	Unknown	0	-	-
Ditchweed	Loose Material	3	0.71	0.34
	Buds	17	0.87	0.28
	Leaves	0	-	-
	Bricks	0	-	-
	Unknown	0	-	-



Table 4a. Prevalence of High Potency Cannabis in all Samples, Per Year from 1995 to Present

Year	Total	n<3%	%	n=3-7%	%	n=7-12%	%	n>12%	%
1995	4760	1763	37.0	2730	57.4	213	4.5	54	1.1
1996	2431	930	38.3	1252	51.5	181	7.4	68	2.8
1997	2455	874	35.6	1199	48.8	283	11.5	99	4.0
1998	2263	888	39.2	1016	44.9	261	11.5	98	4.3
1999	2658	1103	41.5	1097	41.3	286	10.8	172	6.5
2000	3114	1142	36.7	1301	41.8	467	15.0	204	6.6
2001	2696	865	32.1	1197	44.4	421	15.6	213	7.9
2002	2392	657	27.5	944	39.5	467	19.5	324	13.5
2003	2497	655	26.2	1014	40.6	507	20.3	321	12.9
2004	2608	640	24.5	918	35.2	579	22.2	471	18.1
2005	2951	712	24.1	987	33.4	728	24.7	524	17.8
2006	2856	740	25.9	831	29.1	694	24.3	591	20.7
2007	3026	659	21.8	819	27.1	863	28.5	685	22.6
2008	2701	573	21.2	622	23.0	812	30.1	694	25.7
2009	3039	712	23.4	732	24.1	894	29.4	701	23.1
2010	3161	713	22.6	827	26.2	800	25.3	821	26.0
2011	2356	242	10.3	498	21.1	670	28.4	946	40.2
2012	2100	181	8.6	367	17.5	565	26.9	987	47.0
2013	1230	79	6.4	217	17.6	381	31.0	553	45.0
2014	971	85	8.8	159	16.4	297	30.6	430	44.3
2015	1000	59	5.9	236	23.6	357	35.7	348	34.8
2016	796	50	6.3	126	15.8	284	35.7	336	42.2
2017	672	27	4.0	50	7.4	188	28.0	407	60.6
2018	380	12	3.2	22	5.8	79	20.8	267	70.3

Table 4b. Prevalence of High Potency Cannabis

(All samples analyzed during this period are non-domestic DEA samples.)

from December 23, 2018 to March 22, 2019

	Total	n<3%	%	n=3-7%	%	n=7-12%	%	n>12%	%
Period	394	91	23.1	101	25.6	68	17.3	134	34.0

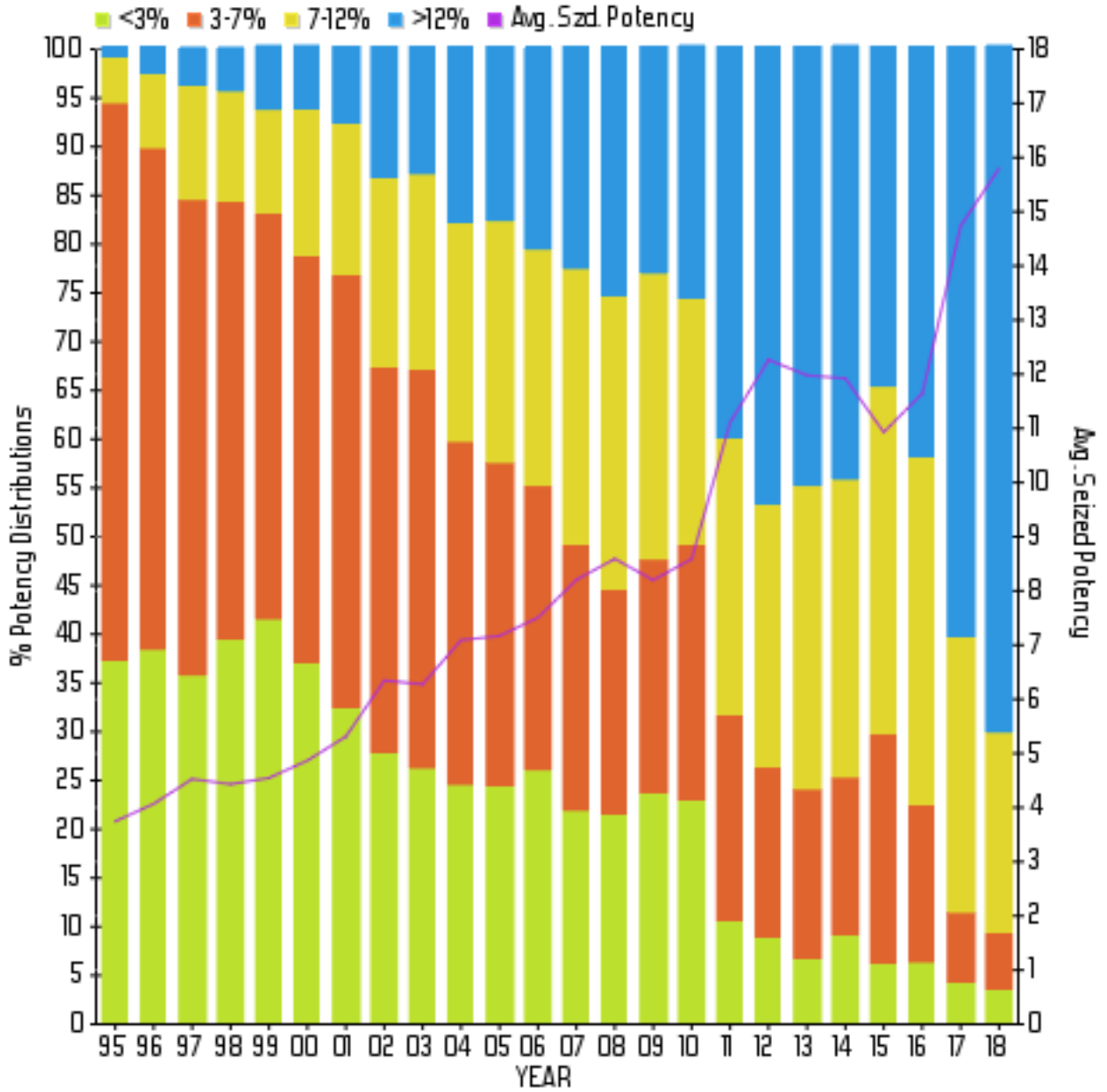
Table 5. Prevalence of Domestic High Potency Cannabis, Per Year from 1995 to Present

Year	Total	n<3%	%	n=3-7%	%	n=7-12%	%	n>12%	%
1995	997	693	69.5	209	21.0	65	6.5	30	3.0
1996	1029	644	62.6	252	24.5	88	8.6	45	4.4
1997	1118	641	57.3	304	27.2	111	9.9	62	5.5
1998	922	571	61.9	205	22.2	88	9.5	58	6.3
1999	833	478	57.4	171	20.5	102	12.2	82	9.8
2000	1185	679	57.3	269	22.7	154	13.0	83	7.0
2001	1009	611	60.6	206	20.4	129	12.8	63	6.2
2002	702	406	57.8	145	20.7	92	13.1	59	8.4
2003	625	410	65.6	108	17.3	73	11.7	34	5.4
2004	694	382	55.0	192	27.7	67	9.7	53	7.6
2005	656	399	60.8	115	17.5	85	13.0	57	8.7
2006	775	467	60.3	153	19.7	90	11.6	65	8.4
2007	883	495	56.1	172	19.5	124	14.0	92	10.4
2008	701	411	58.6	107	15.3	104	14.8	79	11.3
2009	966	535	55.4	186	19.3	128	13.3	117	12.1
2010	901	493	54.7	263	29.2	82	9.1	63	7.0
2011	14	3	21.4	3	21.4	6	42.9	2	14.3
2017	6	0	0	0	0	3	50.0	3	50.0
2018	56	6	10.7	3	5.4	13	23.2	34	60.7

Table 6. Prevalence of Non-domestic High Potency Cannabis, Per Year from 1995 to Present

Year	Total	n<3%	%	n=3-7%	%	n=7-12%	%	n>12%	%
1995	3763	1070	28.4	2521	67.0	148	3.9	24	0.6
1996	1402	286	20.4	1000	71.3	93	6.6	23	1.6
1997	1337	233	17.4	895	66.9	172	12.9	37	2.8
1998	1341	317	23.6	811	60.5	173	12.9	40	3.0
1999	1825	625	34.2	926	50.7	184	10.1	90	4.9
2000	1929	463	24.0	1032	53.5	313	16.2	121	6.3
2001	1687	254	15.1	991	58.7	292	17.3	150	8.9
2002	1690	251	14.9	799	47.3	375	22.2	265	15.7
2003	1872	245	13.1	906	48.4	434	23.2	287	15.3
2004	1914	258	13.5	726	37.9	512	26.8	418	21.8
2005	2295	313	13.6	872	38.0	643	28.0	467	20.3
2006	2081	273	13.1	678	32.6	604	29.0	526	25.3
2007	2143	164	7.7	647	30.2	739	34.5	593	27.7
2008	2000	162	8.1	515	25.8	708	35.4	615	30.8
2009	2073	177	8.5	546	26.3	766	37.0	584	28.2
2010	2260	220	9.7	564	25.0	718	31.8	758	33.5
2011	2342	239	10.2	495	21.1	664	28.4	944	40.3
2012	2100	181	8.6	367	17.5	565	26.9	987	47.0
2013	1230	79	6.4	217	17.6	381	31.0	553	45.0
2014	971	85	8.8	159	16.4	297	30.6	430	44.3
2015	1000	59	5.9	236	23.6	357	35.7	348	34.8
2016	796	50	6.3	126	15.8	284	35.7	336	42.2
2017	666	27	4.1	50	7.5	185	27.8	404	60.7
2018	324	6	1.9	19	5.9	66	20.4	233	71.9

Figure 4. Potency Distribution of All Samples



\* The current year is always an incomplete year and only reflects data analyzed to the end date on this report.

Figure 5. Potency Distribution of Domestic Samples

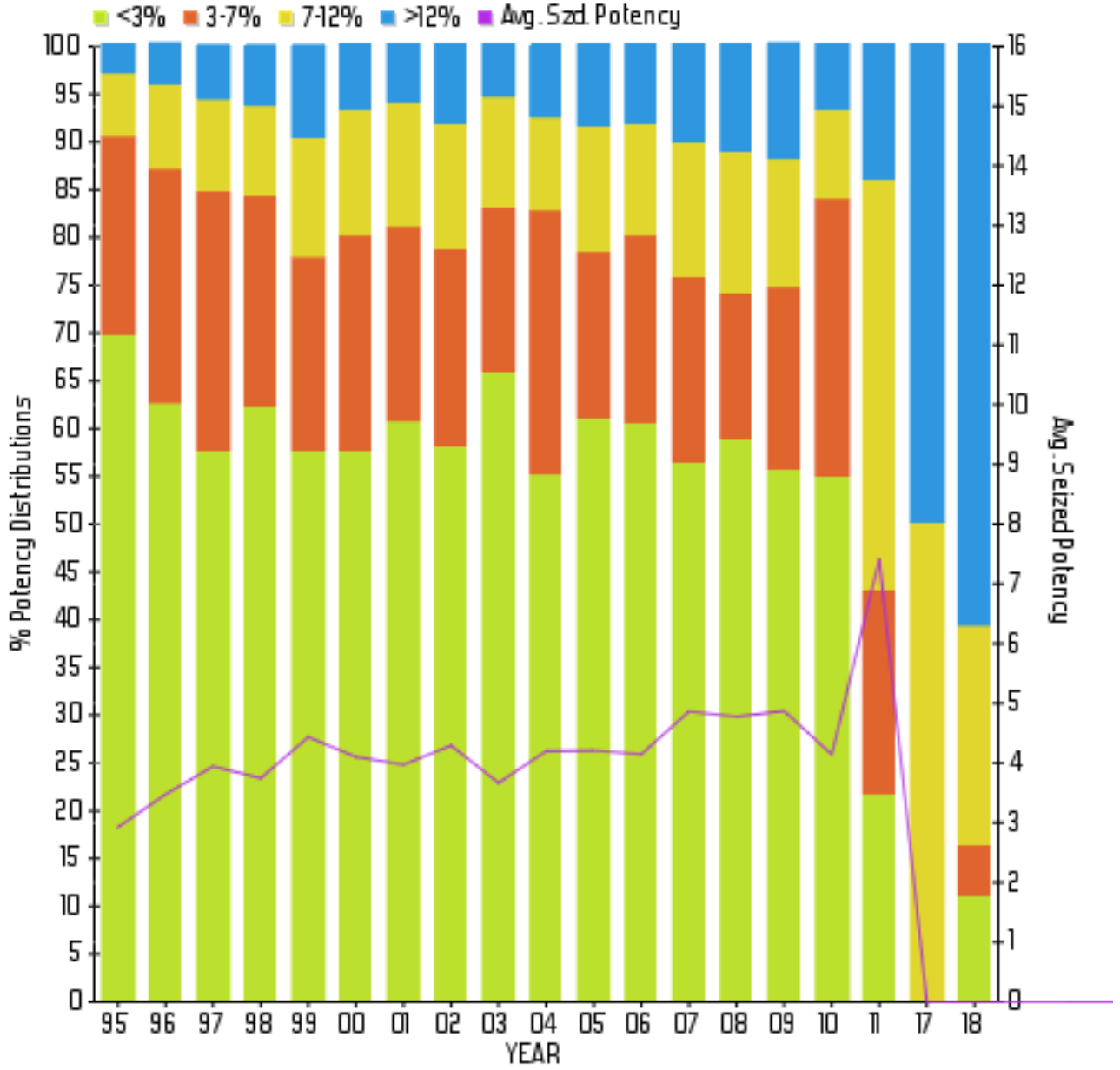
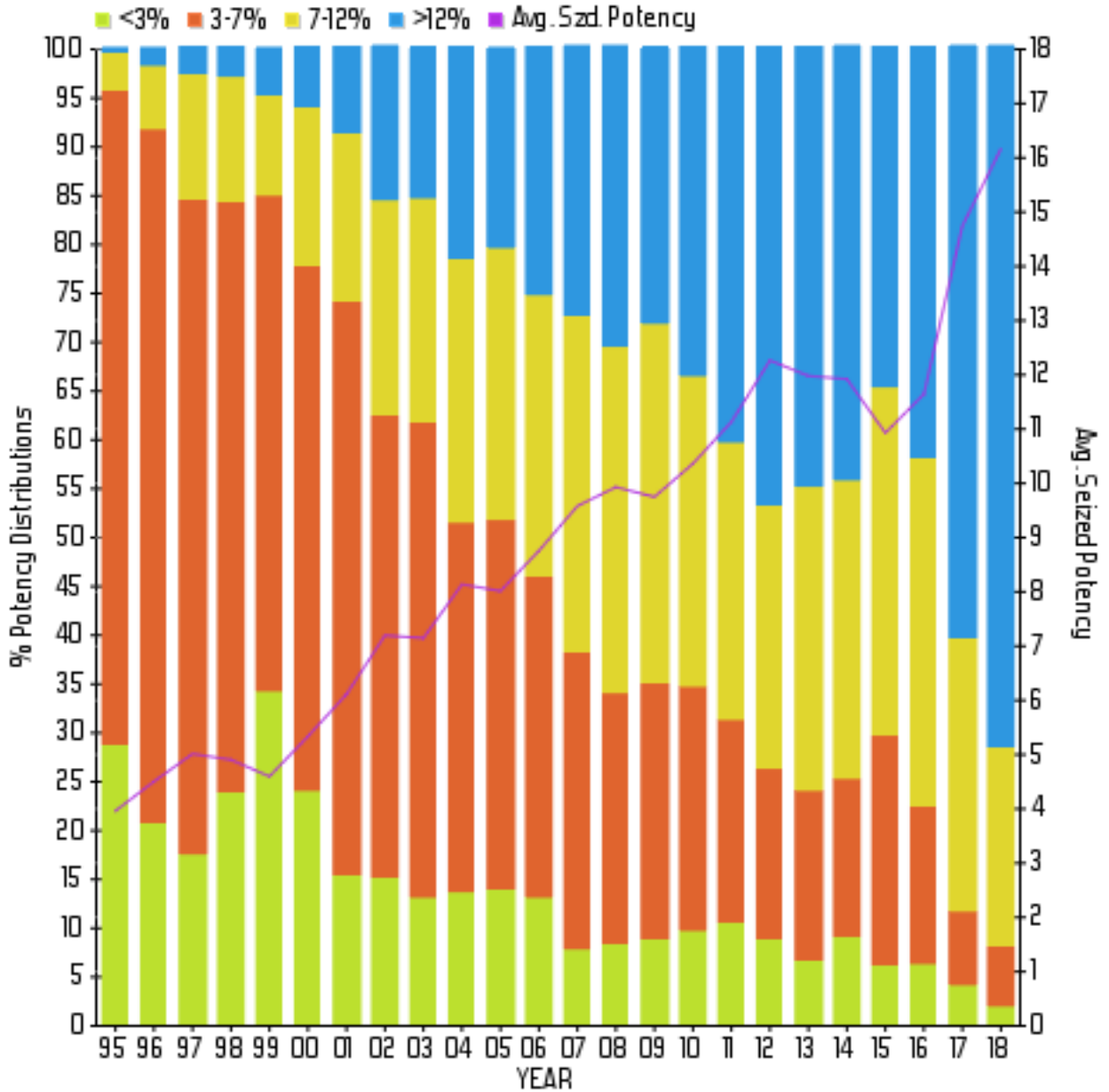


Figure 6. Potency Distribution of Non-Domestic Samples



\* The current year is always an incomplete year and only reflects data analyzed to the end date on this report.



Table 7a. Average Cannabis Cannabinoid Concentrations Per Year

1995 to Present

Year	n	D-8 THC %	D-9 THC %	CBD %	CBC %	CBN %	CBG %	THCV %
1995	4760	0.00	3.75	0.31	0.20	0.31	0.13	0.05
1996	2431	0.00	4.07	0.42	0.23	0.23	0.16	0.06
1997	2455	0.00	4.53	0.40	0.25	0.20	0.18	0.08
1998	2263	0.00	4.43	0.41	0.22	0.23	0.16	0.05
1999	2658	0.00	4.55	0.43	0.21	0.38	0.17	0.04
2000	3114	0.00	4.87	0.45	0.21	0.34	0.23	0.06
2001	2696	0.00	5.31	0.47	0.23	0.28	0.25	0.08
2002	2392	0.00	6.35	0.42	0.25	0.22	0.24	0.08
2003	2497	0.00	6.28	0.46	0.24	0.23	0.29	0.08
2004	2608	0.00	7.09	0.46	0.25	0.28	0.34	0.08
2005	2951	0.00	7.17	0.45	0.27	0.32	0.36	0.08
2006	2856	0.00	7.51	0.41	0.24	0.26	0.33	0.08
2007	3026	0.00	8.21	0.41	0.25	0.24	0.37	0.09
2008	2701	0.00	8.59	0.37	0.26	0.33	0.32	0.09
2009	3039	0.01	8.20	0.35	0.26	0.37	0.28	0.08
2010	3161	0.05	8.59	0.27	0.25	0.62	0.31	0.07
2011	2356	0.06	11.11	0.22	0.25	0.46	0.42	0.09
2012	2100	0.08	12.27	0.20	0.24	0.56	0.43	0.09
2013	1230	0.08	11.98	0.16	0.26	0.63	0.46	0.10
2014	971	0.07	11.92	0.16	0.22	0.67	0.43	0.08
2015	1000	0.07	10.93	0.18	0.22	0.76	0.47	0.08
2016	796	0.09	11.64	0.18	0.23	0.77	0.46	0.08
2017	672	0.15	14.74	0.13	0.28	0.64	0.54	0.09
2018	380	0.17	15.80	0.36	0.30	0.49	0.52	0.10
2019	16	0.07	1.81	15.29	0.65	0.01	0.28	0.01

Table 7b. Average Hashish Cannabinoid Concentrations Per Year

1995 to Present

Year	n	D-8 THC %	D-9 THC %	CBD %	CBC %	CBN %	CBG %	THCV %
1995	19	0.00	3.60	3.34	0.51	1.70	0.32	0.14
1996	12	0.00	2.52	4.54	0.70	2.43	0.34	0.09
1997	31	0.00	8.92	3.99	0.75	2.13	0.48	0.32
1998	15	0.00	5.87	1.73	0.80	2.04	0.32	0.21
1999	23	0.00	4.94	1.79	0.59	2.07	0.51	0.30
2000	27	0.00	4.16	4.90	0.59	2.31	0.36	0.13
2001	13	0.00	8.48	2.72	0.58	1.54	0.58	0.30
2002	16	0.00	9.12	2.49	0.60	1.38	0.43	0.18
2003	16	0.00	9.23	3.92	0.68	1.85	0.41	0.16
2004	25	0.00	18.95	0.76	0.74	1.42	0.67	0.23
2005	47	0.00	11.98	1.67	0.86	1.91	0.37	0.17
2006	32	0.00	29.33	1.57	0.67	1.34	0.81	0.23
2007	70	0.00	27.71	1.19	0.80	1.84	0.97	0.30
2008	62	0.00	21.96	2.25	0.91	2.20	0.75	0.36
2009	42	0.06	17.40	1.47	0.92	2.74	0.40	0.15
2010	79	0.24	22.75	0.65	0.86	2.96	0.51	0.21
2011	120	0.24	30.04	0.51	1.12	2.97	0.70	0.23
2012	116	0.33	31.69	0.54	0.82	2.79	0.71	0.22
2013	41	0.28	29.28	0.36	0.72	2.44	0.83	0.21
2014	23	0.33	30.30	1.38	0.97	3.05	0.90	0.24
2015	23	0.15	17.62	0.95	0.51	2.60	0.56	0.14
2016	18	0.14	15.51	0.64	0.72	5.70	0.85	0.07
2017	9	0.32	40.79	0.27	0.85	3.05	1.15	0.23
2018	7	0.36	23.41	0.14	0.46	1.62	0.81	0.14

Table 7c. Average Hash Oil Cannabinoid Concentrations Per Year

1995 to Present

Year	n	D-8 THC %	D-9 THC %	CBD %	CBC %	CBN %	CBG %	THCV %
1995	13	0.00	13.23	0.72	1.00	4.24	0.51	0.34
1996	8	0.00	12.82	1.27	1.09	3.99	0.45	0.55
1997	10	0.00	18.20	0.28	1.05	3.51	0.35	0.57
1998	5	0.00	15.78	0.21	0.78	3.58	0.23	0.51
1999	11	0.00	16.21	0.38	1.34	4.83	0.33	0.35
2000	7	0.00	28.58	0.51	1.57	1.65	0.91	0.74
2001	7	0.00	19.44	1.32	1.20	4.36	0.95	0.58
2002	5	0.00	22.51	0.33	0.54	1.69	1.20	0.31
2003	4	0.00	15.54	0.19	0.80	1.32	0.33	0.39
2004	4	0.00	31.32	1.12	1.14	2.20	1.17	0.36
2005	6	0.00	6.40	0.35	0.22	1.15	0.15	0.18
2006	3	0.00	18.74	0.13	0.43	0.59	0.38	0.12
2007	18	0.00	24.85	0.57	0.89	1.53	0.65	0.31
2008	14	0.00	6.73	0.20	0.33	1.41	0.14	0.13
2009	6	0.08	12.71	0.34	0.21	3.28	0.26	0.24
2010	11	0.41	36.16	0.25	0.73	2.28	0.62	0.37
2011	22	0.21	35.28	0.42	0.91	2.41	0.82	0.30
2012	48	0.50	53.52	0.66	0.96	2.73	1.05	0.33
2013	32	0.37	49.98	0.46	1.06	2.18	1.05	0.27
2014	62	0.33	50.89	1.12	0.92	2.23	1.30	0.42
2015	55	0.53	56.26	0.57	1.14	2.84	1.60	0.29
2016	51	0.52	37.26	2.64	1.04	2.92	1.29	0.27
2017	33	0.73	56.77	0.46	1.05	2.62	1.54	0.35
2018	13	0.54	60.95	0.21	0.91	1.43	2.11	0.32

Table 8a

1995 to Present

Domestic Cannabis Specimen Types, Average THC Percentage Per Year

Year	Marijuana								Sinsemella							
	Loose Material		Buds		Leaf		Kilo Bricks		Loose Material		Buds		Leaf		Kilo Bricks	
		#		#		#		#		#		#		#		#
95	3.011	14	4.121	72	2.355	614	4.070	1			7.259	147				
96	3.339	14	5.361	99	2.520	653	3.930	1			8.938	146				
97	6.896	12	6.194	101	2.951	839	0.880	2			11.501	104				
98	5.593	22	7.592	104	2.604	651	7.880	1			12.583	64				
99	4.428	55	8.213	141	2.412	495					13.308	81				
00	5.660	54	8.005	252	2.484	751					12.715	51				
01	4.002	73	7.484	160	2.426	571	6.320	1	0.640	1	8.164	133	2.408	6		
02	6.455	11	4.064	225	2.038	173					7.290	226				
03	4.380	1	2.938	171	1.899	205					7.208	191				
04	7.180	1	3.463	150	1.969	244			4.350	1	7.749	241	3.948	4		
05			4.142	69	1.796	285			6.030	4	8.011	237	2.494	9		
06	2.257	3	3.584	68	1.583	289	6.225	2			6.830	363	0.890	1		
07			3.521	58	1.585	282					7.328	491	2.533	12		
08	8.000	2	3.477	45	1.474	255			12.215	2	7.518	367	1.655	2		
09	4.273	7	3.461	68	2.191	360	4.190	1	5.530	2	7.477	481	2.436	11		
10	2.256	5	4.701	133	1.807	256					5.500	467	1.314	5		
11			6.986	5							7.651	9				
17			11.150	1							14.446	5				
18			9.940	4							15.111	48				
19	1.110	1									9.930	2				

Table 8b

1995 to Present

## Non-Domestic Cannabis Specimen Types, Average THC Percentage Per Year

Year	Marijuana								Sinsemella							
	Loose Material		Buds		Leaf		Kilo Bricks		Loose Material		Buds		Leaf		Kilo Bricks	
		#		#		#		#		#		#		#		#
95	4.233	984	5.988	17	1.756	16	3.848	2,713			9.637	17				
96	4.334	662	5.701	60	2.230	23	4.436	632			11.301	22				
97	4.925	687	8.256	72	2.470	45	4.688	509			12.015	18				
98	4.476	637	7.298	128	2.250	56	4.666	477			11.882	37				
99	4.140	974	9.192	130	2.387	58	3.838	587			13.491	55				
00	4.680	975	9.687	214	1.927	47	4.406	624			12.869	62				
01	5.230	676	9.234	270	2.314	25	4.992	616			12.054	94	11.310	1		
02	5.459	131	6.994	474	3.195	83	5.078	692	10.450	1	14.424	301				
03	4.161	56	7.075	465	3.674	87	5.149	908			14.002	347				
04	4.463	36	7.651	563	3.241	74	5.426	745	8.367	3	14.118	481	2.860	1		
05	5.089	30	7.448	479	3.052	172	5.685	926	10.124	5	13.089	673	6.020	3		
06	4.774	40	8.247	535	3.356	184	6.041	650	11.595	2	13.605	661	11.832	5		
07	6.355	19	8.197	701	3.348	124	6.723	459	11.945	8	13.423	824	6.630	1		
08	6.703	38	8.040	631	3.017	112	6.874	271	8.042	6	13.115	936			6.710	1
09	4.719	27	7.570	484	7.153	226	6.613	288	7.292	10	12.441	1,027	12.280	1	6.726	5
10	5.480	6	8.043	372	4.449	225	6.684	290	9.920	1	12.820	1,358			6.285	4
11	5.175	29	7.118	317	2.832	194	5.992	182	3.837	3	13.655	1,612				
12	9.996	9	7.190	227	3.768	165	6.809	147			14.455	1,549				
13	4.068	5	7.369	143	3.615	52	6.110	68			13.610	959				
14	2.490	3	7.008	75	2.905	56	7.234	56	1.680	1	13.436	776	12.140	1		
15			7.351	164	3.455	26	6.702	115			12.806	692				
16	5.775	2	7.606	299	2.383	16	7.419	24			15.043	449				
17			9.818	223	3.005	16					17.759	427				
18	17.125	2	10.808	62	4.040	4					17.848	253				

Table 8c

1995 to Present

## Cannabis Ditchweed Specimen Types, Average THC Per Year

Year	Domestic								DEA Lab								Dom.	DEA
	L. Material		Buds		Leaf		Kilo Bricks		L. Material		Buds		Leaf		Kilo Bricks		Sum	Sum
		#		#		#		#		#		#		#		#		
95	0.69	1	0.53	20	0.39	128			0.40	12					0.64	2	149	14
96	0.34	4	0.34	24	0.39	88			0.49	2			0.71	1			116	3
97	0.35	1	0.55	8	0.47	51			0.74	3					0.07	1	60	4
98	0.23	3	0.31	21	0.46	56			0.20	4			0.10	1	0.20	1	80	6
99			0.31	11	0.33	50			0.50	13	0.96	1					61	14
00	0.24	3	0.27	15	0.36	59			0.42	3					0.91	1	77	4
01	0.36	12	0.48	9	0.41	43			0.65	4			0.30	1			64	5
02	0.43	1	0.36	44	0.53	22			0.30	1	0.33	4	0.36	2	0.13	1	67	8
03	0.27	1	0.46	19	0.30	37			0.15	1	0.32	4	0.05	1	0.53	3	57	9
04			0.35	31	0.41	22			0.15	2	0.33	3	0.81	1	0.59	3	53	9
05			0.28	25	0.39	27					0.76	3			0.78	3	52	6
06			0.26	31	0.32	18					0.43	1			0.52	3	49	4
07			0.31	27	0.45	13					0.50	4	0.77	3			40	7
08			0.33	16	0.59	12			0.21	2	0.66	2			0.42	1	28	5
09	0.04	1	0.31	16	0.39	18			0.08	1	0.48	2	0.97	1	0.29	1	35	5
10			0.38	12	0.58	20					0.48	2	0.76	1			32	3
11											0.51	3	0.42	2				5
12											0.60	1	0.71	1				2
13											0.45	2						2
14											0.21	1						1
15											0.49	2			0.10	1		3
16											0.72	1	0.88	1				2
18	0.50	1	0.49	3							0.42	3					4	3
19	0.53	2	0.63	11													13	

Table 9

Comparison of Non-normalized Delta-9 THC Concentrations  
in Different Forms by Year Confiscated 1995 - Present

	Type of Cannabis			Physical Description					Type
	Ditchweed	Marijuana	Sinsemella	Buds	Kilobricks	Loose Leaf	Loose Other	Thai Sticks	Cannabis
1995	0.41	3.73	7.51	6.01	3.85	4.17	2.01	4.52	3.75
1996	0.38	3.87	9.25	6.94	4.43	4.28	2.26		4.07
1997	0.49	4.26	11.58	8.70	4.66	4.93	2.79		4.53
1998	0.39	4.22	12.33	8.40	4.66	4.47	2.42		4.43
1999	0.37	4.18	13.38	9.97	3.84	4.11	2.24		4.55
2000	0.35	4.69	12.80	9.33	4.40	4.71	2.31	3.27	4.87
2001	0.42	5.03	9.55	8.88	4.99	5.01	2.30		5.31
2002	0.40	5.11	11.36	8.03	5.07	5.50	2.25		6.34
2003	0.35	4.97	11.59	8.39	5.13	4.03	2.18		6.28
2004	0.38	5.38	11.91	9.19	5.41	4.60	2.16		7.09
2005	0.38	5.25	11.62	9.81	5.67	5.83	2.19		7.17
2006	0.30	5.57	11.20	9.73	6.02	4.91	2.30		7.51
2007	0.39	6.10	11.07	9.80	6.72	8.01	2.09		8.21
2008	0.44	5.97	11.50	10.15	6.85	6.88	1.90		8.59
2009	0.36	5.73	10.75	9.75	6.59	5.03	3.97		8.20
2010	0.51	5.49	10.88	10.05	6.68	4.51	2.92		8.58
2011	0.47	5.62	13.55	12.48	5.99	5.05	2.81		11.08
2012	0.66	6.10	14.46	13.52	6.81	10.00	3.75		12.27
2013	0.45	6.26	13.61	12.78	6.11	4.07	3.62		11.98
2014	0.21	5.79	13.43	12.85	7.23	2.29	3.07		11.92
2015	0.36	6.77	12.81	11.73	6.64		3.46		10.93
2016	0.80	7.28	15.04	12.06	7.42	5.78	2.29		11.64
2017		9.37	17.72	15.02			3.01		14.73
2018	0.47	10.49	17.44	15.96		8.83	4.04		15.76



Table 10: Number of Specimens Submitted by DEA Labs through 03/22/2019

	Types							
	Cannabis		Hashish		Hash Oil		Yr/Total	
	n	THC	n	THC	n	THC	n	THC
STRL	47	5.09	109	4.88	6	11.04	162	5.17
NERL	4916	10.12	100	15.64	34	32.73	5050	10.39
MARL	3536	7.79	38	18.27	20	37.80	3594	8.07
SERL	5941	8.02	62	14.07	66	28.58	6069	8.31
NCRL	6729	7.65	50	20.26	20	51.69	6799	7.87
SCRL	4181	5.90	15	32.27	18	42.35	4214	6.15
SWRL	11158	7.14	226	26.77	192	48.69	11576	8.21
WRL	5828	10.69	302	26.63	93	35.00	6223	11.83
Total	42336	8.11	902	21.34	449	40.58	43687	8.72

Table 11a. Paraquat Testing-Confirmed Results from 1999 to 2018

Lab	n	Positive	Negative	Average PPM
SWRL	4509	176	4333	12.56
SCRL	2058	66	1992	8.84

Figure 7. Paraquat Positive Rates of Selected Specimens

