

HEMP REPORT 2019



Nevada Department
of Agriculture

Introduction

The Nevada Department of Agriculture (NDA) established an Industrial Hemp research and development program following passage of the [2014 Farm Bill](#). [State Senate Bill 305](#) was passed to initiate state authority under Nevada Revised Statute (NRS) for the registration, compliance and enforcement for growing hemp and producing seed. Registered growers were approved to begin production in 2016 through codified [NRS 557](#). [Nevada Administrative Code \(NAC\) 557](#) was established and approved in 2016, with hemp production licenses issued in 2017. In response to program requirements detailed in the 2018 Farm Bill, [2019 Senate Bill \(SB\) 347](#) was established to revise NRS 557. The number of NDA hemp certificate holders and the applied hemp production acreage increased as a result of the 2018 Farm Bill from 115 certified hemp growers with an applied 1,880.06 acres in 2018 to 213 certified hemp growers with an applied 14,693.86 acres in 2019.

The NDA has continued to support Nevada's growing hemp industry by submitting the State of Nevada Hemp Plan to the United State Department of Agriculture (USDA) in response to the provisions of the 2018 Farm Bill and corresponding Interim Final Rule. The Nevada Hemp Plan was formally approved by the USDA on May 28th, 2021.

Hemp data is a valuable resource to Nevada growers. The NDA intends to use this 2019 Hemp Report to provide producers' and interested parties' information regarding Nevada's ongoing hemp production and possible production trends. This report provides facts about Nevada hemp operations in 2019, such as the number of farms, number of hemp samples per variety, hemp compliance testing results, peak sampling season, number of non-compliant crops and the number of crop disposals overseen by the NDA.

Methodology: Sampling

NDA staff conducted all hemp sampling inspections for Nevada's hemp crops in 2019. All hemp crops were required to be harvested within 15 days of the sample collection date. Growers were responsible for notifying the NDA of the need for inspection with ample time for the inspection to be scheduled 15 days prior to harvest.

Per [NRS 557.270](#), all hemp crops were subject to sampling prior to harvest. Crops harvested prior to NDA sampling would be subject to an automatic testing failure and may have been detained, seized or embargoed by the Department.

NDA hemp inspections in 2019 were conducted in the following way:

An NDA inspector collected randomized clippings from the top six inches of flowering plant material from 10 plants or 20% of the total hemp plants per variety/lot. The random 10 clippings or clippings from 20% of the variety are returned to the laboratory for processing.

Equal parts flower to stem/leaf material with ratios between one and one (1:1) with 5% variability were measured by the NDA inspector for each sample. Excess plant material was disposed. The samples were then sealed and delivered to the NDA's Chemistry Laboratory for analysis.

Methodology: Testing Methods

Per [NRS 557.270](#) hemp samples must be analyzed to determine whether tetrahydrocannabinol (THC) concentrations exceed the 0.3% THC concentrations established by federal law. The 2018 Federal Farm Bill defines hemp in the following way: “(1) HEMP.—The term ‘‘hemp’’ means the plant *Cannabis sativa L.* and any part of that plant, including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salts of isomers, whether growing or not, with a delta-9 tetrahydrocannabinol concentration of not more than 0.3 percent on a dry weight basis.”

Federal law requires a post decarboxylation or similarly reliable method of testing, therefore the NDA utilized analytical testing of samples for delta-9 tetrahydrocannabinol concentration levels through post-decarboxylation or other similarly reliable methods.

The NDA hemp compliance testing was conducted using High Performance Liquid Chromatography (HPLC) to detect total potential THC of the hemp crops. HPLC is a USDA approved testing method, as it meets the requirements of the [Agriculture Improvement Act of 2018](#) to account for the conversion of THC-A to THC. NDA test results were derived using the formula $((\text{THC-A})(0.877)) + \text{Delta 9-THC} = \text{Total Potential THC}$, 0.877 being the mass ratio of the conversion from THC-A to THC. In 2019, the NDA Chemistry Laboratory maintained a measurement of uncertainty of 10%. As such, hemp samples testing up to 0.34% total potential THC were considered compliant. This equation accounted for 100% conversion rate of THC-A to THC.

Hemp samples that test below 0.34% were deemed compliant and a Report of Analysis (ROA) clearly identifying the testing results was provided to the associated grower. Any hemp crops that tested above 0.34% total potential THC were immediately retested by the NDA Chemistry Laboratory to confirm the results. The failed sample was reported to NDA program staff for coordination with the grower to schedule a re-sample of the hemp variety, if the grower desired a re-sample, and the crop had not been harvested (per [Nevada Senate Bill 209](#)). Upon a second failed sample analysis, crops were scheduled for disposal.

Data Sources

Data for this report was obtained through 2019 hemp applications, inspections, chemistry analysis reports, and certificate holder reports such as Hemp Harvest Reports. Using data collected from 2018, the NDA sought to identify changes in Nevada's hemp industry from 2018 to 2019, such as changes in number of hemp production applications and applied production acreage.

Data Analysis: Quantity of Hemp Samples Per Variety

The NDA recorded 144 different hemp varieties grown in Nevada in 2019. The varieties were identified and reported by the growers. Figure 1 demonstrate the different hemp varieties and the number of samples collected for each variety.

Figure 1: Number of samples collected from each variety in 2019

Variety	# Samples
Abacus	5
Abbie	1
ACDC	5
ACDC/Otto Mix	1
Acid Rock	1
Alien Mind Control	1
Amnesia	1
Angel	1
Auto Flower	1
Auto Pilot	2
Avix Special	1
AVW	1
Bachs	1
Berry Blossom	44
Berry Blossom x Trump	1
Blue Delicious	1
Blue Genius	2
Blue Genius Auto	1
Blue Pineapple	1
Boax	12
Boax x Cherry Blossom	1
Boax x Otto 2	1
Boring Hemp #2	2
Buamann	1
Buster	1
C1	1
Cal	1
Cal Blue Diamond	1
Candy	1
Canna Blush	1
Cascade	1
Casino Cookies	1
CBD	1
CBD Diesel	1
CBD1	1
Chardonnay	2
Cherry Blossom	16

Variety	# Samples
Cherry Bubblegum	1
Cherry Cherry	2
Cherry Tea	2
Cherry Wine	47
Cherry Wine x T1	1
Cherry Wine x Auto	1
Cherry Wine x Berry Blossom	1
Churchill Cherry	3
CM: Funny Pistols	1
CM: Normal Pistols	1
CM: Purple Phenotype	1
Cobler	1
CW: Funny Pistols	2
CW: Normal Pistols	2
CW: Purple Phenotype	2
DCW	1
Desert Cherry	1
Desert Cherry Wine	3
Doc	1
Double Cherry	2
Dream	1
Early Bird	1
Eden	2
Elektra	1
Emerald Gold	1
Fragrant Rock	1
Franklin	2
Frosted Lime	1
Green Mango	1
Green Wave	2
Hawaiian Haze	9
Hempres 2	3
Hip Willy (HW)	2
Holy Grail	1
I-4	3
Juicy Fruit	1
Kits	1

Variety	# Samples
KLR1	3
Lifter	12
Lifter x Oregon CBD	3
Magic Bullet	1
MB: Funny Pistols	1
MB: Normal Pistols	1
MB: Purple Phenotype	1
Merlot	11
Mountain Mango	1
Nightingale	1
Oregon	1
Otto 2	1
P-1	1
P-2	1
P-3	1
P-4	1
P-5	1
P-6	1
Parkdale	1
Peacemaker	1
Pink	1
Purple	1
Rainbow Madonna	1
Relief Now 13	5
Remission	2
Ringo's Gift	2
Rocky Mountain Berry	1
Rogue Seed	2
S8 x Therapy	2
Sativa	1
Silver Maiden	1
Siskiyou	3
Siskiyou Gold	3
Sisters	1
Sour Space Candy	5
Special Sauce	4
SR4	1
SS	1

Variety	# Samples
Stormy Daniels	5
Stout	2
Strawberry Cake	1
Super CBD	1
Super Sativa	1
Suver Haze	3
Suzi Q	1
Sweelen	1
Sweet Berry Wine	3
Sweet Grass	1
Trump (T-1)	30
Trump 2 (T-2)	20
T-1 x Abacus	1
T-1 x Otto 2	1
Trump 5	1
Tahoe Kush	3
Tetra	1
Therapy	1
Trophy Wife	18
Ultra	2
Ultra NV	5
W86/CBG	2
Watermelon	1
Wife	5
Yellow 37	1
Yellow 41 x Yellow 31 x Yellow 19	1
Young Sim 10	2
ZT11-15	2

**Data collected from NDA 2019 inspections and hemp harvest reports submitted by growers.*

Data Analysis: 2019 Hemp Sample Results

All hemp crops in Nevada are tested for compliance with the federal definition of hemp. In 2019, the NDA collected a total of 430 hemp samples in Nevada, of which 58 samples tested above the compliance standard of 0.34% total potential THC. This equated to a crop failure rate of 13.49% for Nevada crops in 2019, as seen in Figure 2. Figure 3 reflects samples collected by the NDA and the associated total THC results of that sample. Samples are in chronological order based on the date of the inspection.

Figure 2: Hemp crop THC compliance failure rate

Total Samples	430
Non-Compliant Samples	58
Failure %	13.49%

Figure 3: 2019 sample test results

Sample Count	Test #	Date Sample Taken	Variety	Total Potential THC
1	20190305NB01	3/5/2019	Blue Genius	0.414
2	20190305NB02	3/5/2019	I-4	0.506
3	20190305NB03	3/5/2019	Remission	0.322
4	20190319NB01	3/19/2019	I-4	0.416
5	20190319NB02	3/19/2019	Blue Genius	0.361
6	20190319NB03	3/19/2019	Remission	0.185
7	20190319NB04	3/19/2019	I-4	0.141
8	20190319NB05	3/19/2019	Therapy	0.118
9	20190319NB06	3/19/2019	S8 Xtherapy	0.197
10	20190319NB07	3/19/2019	S8 Xtherapy	0.133
11	20190319NB08	3/19/2019	Avix Special	0.110
12	2019040902SH	4/9/2019	Fragrant Rock	0.250
13	2019040901SH	4/9/2019	Acid Rock	0.210
14	2019041119NB01	4/11/2019	Berry Blossom	0.181
15	2019042419NB01	4/24/2019	Berry Blossom	0.162
16	2019042419NB02	4/24/2019	Berry Blossom	0.130
17	20190522NB01	5/22/2019	Berry Blossom	0.258
18	2019062501DP	6/25/2019	Berry Blossom	0.150
19	2019062502DP	6/25/2019	Cherry Wine	0.284
20	2019062503DP	6/25/2019	Trump (T-1)	0.205
21	2019062601DP	6/26/2019	Berry Blossom	0.301
22	2019062701DP	6/27/2019	Cherry Wine	0.328

Sample Count	Test #	Date Sample Taken	Variety	Total Potential THC
23	2019062702DP	6/27/2019	Trophy Wife	0.373
24	2019062703DP	6/27/2019	Silver Maiden	0.314
25	2019062704DP	6/27/2019	Berry Blossom	0.277
26	20190701JD01	7/1/2019	Tahoe Kush	0.222
27	20190701JD02	7/1/2019	Sweet Berry Wine	0.228
28	20190701JD03	7/1/2019	Magic Bullet	0.240
29	20190701JD04	7/1/2019	Ringo's Gift	0.081
30	20190701JD05	7/1/2019	Cherry Wine	0.231
31	20190701JD06	7/1/2019	Wife	0.291
32	20190701JD07	7/1/2019	Trophy Wife	0.266
33	20190701JD08	7/1/2019	Churchill Cherry	0.192
34	20190701JD09	7/1/2019	Franklin	0.146
35	20190701JD10	7/1/2019	Stout	0.186
36	20190701JD11	7/1/2019	ACDC	0.168
37	20190718EA01	7/18/2019	Berry Blossom	0.106
38	20190718NB01	7/18/2019	Berry Blossom	0.223
39	20190730DP01	7/30/2019	Auto Pilot	0.072
40	20190801EA01	8/1/2019	Berry Blossom	0.236
41	20190815EA01	8/15/2019	Cherry Tea	0.479
42	20190815EA02	8/15/2019	Cherry Wine	0.297
43	20190815JD03	8/15/2019	Blue Delicious	0.222
44	20190815JD01	8/15/2019	Relief Now 13 (RN13)	0.443
45	20190815JD02	8/15/2019	Relief Now 13 (RN13)	0.490
46	20190820JD01	8/20/2019	Trophy Wife	0.089
47	20190820JD02	8/20/2019	W86/CBG	0.268
48	20190820JD03	8/20/2019	Lifter	0.105
49	20190820JD04	8/20/2019	Special Sauce	0.117
50	20190820JD05	8/20/2019	W86/CBG	0.075
51	20190820JD06	8/20/2019	Lifter	0.114
52	20190820JD07	8/20/2019	Sour Space Candy	0.099
53	20190820JD08	8/20/2019	Hawaiian Haze	0.103
54	20190820JD09	8/20/2019	Suver Haze	0.092
55	20190820JD10	8/20/2019	Elektra	0.111
56	20190820EA01	8/20/2019	Lifter	0.370
57	20190820EA02	8/20/2019	Hawaiian Haze	0.139
58	20190822JD01	8/22/2019	Rainbow Madonna	0.312
59	20190828AB01	8/28/2019	Lifter	0.159
60	20190828AB02	8/28/2019	Trump (T-2)	0.334
61	20190830EA01	8/30/2019	Suver Haze	0.106

Sample Count	Test #	Date Sample Taken	Variety	Total Potential THC
62	20190830EA02	8/30/2019	Lifter	0.011
63	20190830EA03	8/30/2019	Special Sauce	0.101
64	20190829EA01	8/30/2019	Trump (T-1)	0.113
65	20190829EA02	8/30/2019	Cherry Wine	0.157
66	20190910JD02	9/1/2019	Stormy Daniels	0.147
67	20190902EA01	9/2/2019	Bachs	0.221
68	20190902EA02	9/2/2019	Siskiyou	0.282
69	20190902EA03	9/2/2019	Sweet Grass	0.231
70	20190902EA04	9/2/2019	Cobler	0.140
71	20190902EA05	9/2/2019	ACDC	0.166
72	20190902EA06	9/2/2019	Cherry Wine	0.228
73	20190902EA07	9/2/2019	Cherry Blossom	0.212
74	20190903EA01	9/3/2019	Canna Blush	0.266
75	20190903EA02	9/3/2019	Boax	0.153
76	20190903EA06	9/3/2019	Berry Blossom	0.154
77	20190903EA05	9/3/2019	Cherry Wine	0.117
78	2019093EA04	9/3/2019	Cherry Wine	0.216
79	20190903EA03	9/3/2019	Cherry Wine Auto	0.237
80	20190904EA01	9/4/2019	Boax x Berry Blossom	0.163
81	20190904EA02	9/4/2019	Canna Blush x Berry Blossom	0.181
82	20190904AB01	9/4/2019	Suver Haze	0.170
83	20190904AB02	9/4/2019	Trophy Wife	0.151
84	20190904AB03	9/4/2019	Merlot	0.217
85	20190904AB04	9/4/2019	Berry Blossom	0.176
86	20190904AB05	9/4/2019	Merlot	0.174
87	20190904AB06	9/4/2019	Berry Blossom	0.190
88	20190904EA05	9/4/2019	Berry Blossom	0.162
89	20190904EA06	9/4/2019	Merlot	0.163
90	20190904EA07	9/4/2019	Trophy Wife	0.188
91	20190904EA03	9/4/2019	Boax & Cherry Blossom	0.172
92	20190904EA04	9/4/2019	Rogue Seed	0.205
93	20190905EA01	9/5/2019	Boax	0.146
94	20190905EA02	9/5/2019	Oregon	0.152
95	20190906AB01	9/6/2019	Cherry Wine	0.077
96	20190909AB02	9/9/2019	Sour Space Candy	0.249
97	20190909AB05	9/9/2019	Trump (T-2)	0.084
98	20190909AB08	9/9/2019	Sweet Berry Wine	0.180
99	20190909AB09	9/9/2019	Cherry Wine	0.167

Sample Count	Test #	Date Sample Taken	Variety	Total Potential THC
100	20190909AB10	9/9/2019	Cherry Cherry	0.207
101	20190909AB11	9/9/2019	Tahoe Kush	0.102
102	20190909AB12	9/9/2019	Wife	0.104
103	20190909AB13	9/9/2019	Churchill Cherry	0.102
104	20190909AB14	9/9/2019	Ringo's Gift	0.065
105	20190808AB15	9/9/2019	Hawaiian Haze	0.189
106	20190909AB16	9/9/2019	Sweet Berry Wine	0.162
107	20190909AB17	9/9/2019	Wife	0.091
108	20190909AB18	9/9/2019	Tahoe Kush	0.070
109	20190909AB19	9/9/2019	Cherry Wine	0.119
110	20190909AB20	9/9/2019	Churchill Cherry	0.083
111	20190909AB07	9/9/2019	Relief Now 13 (RN13)	0.530
112	20190909EA01	9/9/2019	Baox	0.143
113	20190909EA02	9/9/2019	Trump (T-1)	0.133
114	20190909EA03	9/9/2019	Mountain Mango	0.123
115	20190909EA04	9/9/2019	Cherry Wine	0.174
116	20190909EA05	9/9/2019	Berry Blossom	0.146
117	20190909EA06	9/9/2019	Merlot	0.167
118	20190909AB06	9/9/2019	Relief Now 13 (RN13)	0.155
119	20190909AB01	9/9/2019	Trump (T-2)	0.117
120	20190909AB03	9/9/2019	Cherry Blossom	0.150
121	20190909AB04	9/9/2019	Hawaiian Haze	0.189
122	20190909AB21	9/9/2019	Cherry Wine	0.122
123	20190910EA01	9/10/2019	P-1	0.204
124	20190910EA02	9/10/2019	P-2	0.154
125	20190910EA03	9/10/2019	P-3	0.201
126	20190910EA04	9/10/2019	P-4	0.192
127	20190910EA05	9/10/2019	P-5	0.286
128	20190910EA06	9/10/2019	P-6	0.207
129	20190910EA07	9/10/2019	Cal Blue Diamond	0.207
130	20190910EA08	9/10/2019	Trump (T-2)	0.185
131	20190910JD01	9/10/2019	Cherry Blossom	0.228
132	20190910JD03	9/10/2019	Cherry Blossom	0.130
133	20190911JD01	9/11/2019	Trump (T-1)	0.113
134	20190911JD02	9/11/2019	ACDC	0.124
135	20190911JD03	9/11/2019	Wife	0.111
136	20190911JD04	9/11/2019	AVW	0.128
137	20190911JD05	9/11/2019	Cherry Cherry	0.195
138	20190911JD06	9/11/2019	Cherry Wine	0.134

Sample Count	Test #	Date Sample Taken	Variety	Total Potential THC
139	20190911JD07	9/11/2019	Super CBD	0.112
140	20190912AB01	9/12/2019	Trophy Wife	0.128
141	20190912AB02	9/12/2019	Merlot	0.129
142	20190912AB03	9/12/2019	Berry Blossom	0.161
143	20190912AB04	9/12/2019	Trump (T-1)	0.088
144	20190912AB05	9/12/2019	Desert Cherry Wine	0.177
145	20190912AB06	9/12/2019	Boax	0.161
146	20190912AB07	9/12/2019	Siskiyou Gold	0.143
147	20190912AB08	9/12/2019	Siskiyou	0.204
148	20190912AB09	9/12/2019	Cherry Blossom	0.124
149	20190912AB10	9/12/2019	Stormy Daniels	0.137
150	20190912AB11	9/12/2019	Berry Blossom	0.108
151	20190912AB12	9/12/2019	Trump (T-2)	0.102
152	20190912AB13	9/12/2019	Hawaiian Haze	0.245
153	20190912AB14	9/12/2019	Trump (T-2)	0.121
154	20190912AB15	9/12/2019	Trump (T-2)	0.099
155	20190912AB16	9/12/2019	Berry Blossom	0.147
156	20190912AB17	9/12/2019	Berry Blossom	0.149
157	20190912AB18	9/12/2019	Trump (T-2)	0.129
158	20190912AB19	9/12/2019	Trophy Wife	0.184
159	20190912AB20	9/12/2019	Trump (T-2)	0.089
160	20190913EA09	9/13/2019	Berry Blossom	0.163
161	20190913EA10	9/13/2019	Boax	0.193
162	20190913EA11	9/13/2019	Siskiyou Gold	0.209
163	20190913EA12	9/13/2019	Trophy Wife	0.168
164	20190913EA13	9/13/2019	DCW	0.159
165	20190913EA14	9/13/2019	Cherry Blossom	0.149
166	20190913EA15	9/13/2019	Trump (T-1)	0.099
167	20190916EA01	9/16/2019	Trump (T-2)	0.215
168	20190916EA02	9/16/2019	Cherry Wine	0.261
169	20190916AB01	9/16/2019	Ultra NV	0.493
170	20190916AB02	9/16/2019	Ultra NV	0.297
171	20190916AB03	9/16/2019	Berry Blossom	0.114
172	20190916AB04	9/16/2019	Holy Grail	1.122
173	20190917EA03	9/17/2019	Trump (T-2)	0.184
174	20190917EA04	9/17/2019	Cherry Wine	0.249
175	20190917AB01	9/17/2019	Stormy Daniels	0.152
176	20190917AB02	9/17/2019	Desert Cherry	0.151
177	20190917AB03	9/17/2019	Trophy Wife	0.161

Sample Count	Test #	Date Sample Taken	Variety	Total Potential THC
178	20190917AB04	9/17/2019	Berry Blossom	0.114
179	20190917AB05	9/17/2019	Berry Blossom	0.146
180	20190918AB01	9/18/2019	Cherry Wine	0.162
181	20190918AB02	9/18/2019	Sour Space Candy	0.289
182	20190918AB03	9/18/2019	Hawaiian Haze	0.237
183	20190918AB04	9/18/2019	Trump (T-2)	0.166
184	20190918AB05	9/18/2019	Cherry Blossom	0.151
185	20190918AB06	9/18/2019	Trophy Wife	0.180
186	20190918AB07	9/18/2019	Merlot	0.204
187	20190918AB08	9/18/2019	Berry Blossom	0.164
188	20190918AB09	9/18/2019	Cherry Wine	0.199
189	20190918AB10	9/18/2019	Cherry Wine	0.169
190	20190918AB11	9/18/2019	Berry Blossom and Trump mixed variety	0.165
191	20190919NB01	9/19/2019	Cherry Wine	0.257
192	20190919NB02	9/19/2019	Trump (T-1)	0.182
193	20190919JD01	9/19/2019	ZT11-15	0.171
194	20190919JD02	9/19/2019	ZT11-15	0.158
195	20190919JD03	9/19/2019	Siskiyou	0.074
196	20190919JD04	9/19/2019	Frosted Lime	0.103
197	20190919JD05	9/19/2019	KLR1	0.132
198	20190919EA01	9/19/2019	Lifter	0.397
199	20190919EA02	9/19/2019	Hawaiian Haze	0.302
200	20190919EA01	9/19/2019	Lifter	0.397
201	20190920AB01	9/20/2019	Trump (T-2)	0.191
202	20190920AB02	9/20/2019	Berry Blossom	0.202
203	20190920AB03	9/20/2019	Berry Blossom	0.185
204	20190920AB04	9/20/2019	Trump (T-2)	0.141
205	20190920AB05	9/20/2019	Trump (T-2)	0.124
206	20190920AB06	9/20/2019	Trump (T-2)	0.174
207	20190920EA04	9/20/2019	Abbie	0.235
208	20190920EA05	9/20/2019	Buamann	0.286
209	20190920EA06	9/20/2019	SR4	0.197
210	20190920EA07	9/20/2019	Trump (T-1)	0.258
211	20190920EA08	9/20/2019	C1	0.279
212	20190920EA09	9/20/2019	Angel	0.140
213	20190920EA10	9/20/2019	Kits	0.142
214	20190920EA11	9/20/2019	Dream	0.236
215	20190920EA12	9/20/2019	Doc	0.211

Sample Count	Test #	Date Sample Taken	Variety	Total Potential THC
216	20190920EA13	9/20/2019	Candy	0.089
217	20190920EA14	9/20/2019	Suzi Q	0.139
218	20190920EA15	9/20/2019	Cal	1.456
219	20190920EA16	9/20/2019	Rocky Mountain Berry	0.070
220	20190920EA17	9/20/2019	Green Mango	0.083
221	20190920EA18	9/20/2019	Amensia	2.471
222	20190920EA19	9/20/2019	Pink	0.194
223	20190920EA20	9/20/2019	Purple	0.100
224	20190923JD01	9/23/2019	Cherry Wine	0.116
225	20190923JD02	9/23/2019	Berry Blossom	0.058
226	20190923JD03	9/23/2019	Merlot	0.060
227	20190923JD04	9/23/2019	Cherry Wine	0.065
228	20190923JD05	9/23/2019	Cherry Wine	0.118
229	20190923JD06	9/23/2019	Berry Blossom	0.065
230	20190923JD07	9/23/2019	Merlot	0.065
231	20190923JD08	9/23/2019	Merlot	0.108
232	20190923EA01	9/23/2019	Berry Blossom	0.330
233	20190924EA02	9/24/2019	Sativa	0.144
234	20190924EA03	9/24/2019	Cherry Wine	0.260
235	20190924AB01	9/24/2019	Franklin	0.077
236	20190924AB02	9/24/2019	ACDC	0.146
237	20190924AB03	9/24/2019	Stout	0.111
238	20190924AB04	9/24/2019	Trump (T-1)	0.202
239	20190924AB05	9/24/2019	Otto Sweet	0.101
240	20190924AB06	9/24/2019	Super Sativa	0.110
241	20190924AB07	9/24/2019	Cherry Wine	0.183
242	20190924AB08	9/24/2019	Green Wave	0.225
243	20190924AB09	9/24/2019	Berry Blossom	0.216
244	20190924AB10	9/24/2019	Trophy Wife	0.246
245	20190924AB11	9/24/2019	Trump (T-1)	0.828
246	20190924AB12	9/24/2019	Boax	0.185
247	20190924AB13	9/24/2019	Cherry Blossom	0.209
248	20190924AB14	9/24/2019	Abacus	0.848
249	20190924AB15	9/24/2019	Trump (T-1)	0.891
250	20190924AB16	9/24/2019	Green Wave	0.227
251	20190924AB17	9/24/2019	Chardonay	0.198
252	20190924AB18	9/24/2019	Otto 2	0.108
253	20190924AB19	9/24/2019	Cherry Wine	0.154
254	20190925EA01	9/25/2019	Cherry Wine	0.213

Sample Count	Test #	Date Sample Taken	Variety	Total Potential THC
255	20190925EA02	9/25/2019	Berry Blossom	0.284
256	20190925EA03	9/25/2019	Trophy Wife	0.241
257	20190925AB01	9/25/2019	CBD Diesel	3.904
258	20190925AB02	9/25/2019	Abacus	0.508
259	20190925AB03	9/25/2019	Cherry Wine	0.325
260	20190925AB04	9/25/2019	Cherry Blossom	0.290
261	20190925AB05	9/25/2019	Trump (T-1)	0.286
262	20190925AB6	9/25/2019	Boax	0.148
263	20190925EA04	9/25/2019	Cherry Tea	3.219
264	20190926EA05	9/26/2019	Cherry Wine	0.150
265	20190926EA06	9/26/2019	Sisters	0.182
266	20190926EA07	9/26/2019	ACDC/Otto mix	0.147
267	20190927EA01	9/27/2019	Boax	0.315
268	20190927EA02	9/27/2019	Trophy Wife	0.325
269	20190927EA03	9/27/2019	Cherry Blossom	0.345
270	20190930AB01	9/30/2019	Cherry Wine	0.227
271	20190930AB02	9/30/2019	Buster	0.118
272	20190930AB03	9/30/2019	Hip Willy (HW)	0.110
273	20190930AB04	9/30/2019	SS	0.113
274	20191001EA08	10/1/2019	Trump (T-1)	0.276
275	20191001EA04	10/1/2019	Berry Blossom	0.296
276	20191001EA05	10/1/2019	Trophy Wife	0.287
277	20191001EA06	10/1/2019	Cherry Wine/Berry Blossom	0.295
278	20191001EA07	10/1/2019	Desert Cherry Wine	0.240
279	20191002EA01	10/1/2019	Lifter x Oregon CBD	0.404
280	20191001EA01	10/1/2019	Cherry Wine	0.110
281	20191001EA02	10/1/2019	Cherry wine	0.115
282	20191002AB01	10/2/2019	Trump (T-2)	0.123
283	20191002AB02	10/2/2019	Auto Pilot	0.114
284	20191002AB03	10/2/2019	Trump (T-2)	0.088
285	20191002AB04	10/2/2019	CBD1	0.079
286	20191002AB05	10/2/2019	Ultra NV	0.437
287	20191002AB06	10/2/2019	Trump 5	0.309
288	20191002AB07	10/2/2019	Merlot	0.144
289	20191002AB08	10/2/2019	Cherry Wine	0.187
290	20191002EA02	10/2/2019	Berry Blossom	0.226
291	20191002EA02	10/2/2019	Berry Blossom	0.226
292	20191004JD01	10/4/2019	Hip Willy (HW)	0.164
293	20191004JD02	10/4/2019	Trump (T-1)	0.109

Sample Count	Test #	Date Sample Taken	Variety	Total Potential THC
294	20191004JD03	10/4/2019	Trump (T-1)	0.199
295	20191004LJ03	10/4/2019	Stormy Daniels	0.251
296	20191004LJ04	10/4/2019	Cherry Blossom	0.230
297	20191004LJ05	10/4/2019	Chardonay	0.216
298	20191004LJ06	10/4/2019	Baox	0.454
299	20191004LJ07	10/4/2019	Siskiyou Gold	0.212
300	20191004EA08	10/4/2019	Cherry Blossom	0.222
301	20191007JD01	10/7/2019	Cherry Blossom	0.276
302	20191007JD02	10/7/2019	Abacus	0.320
303	20191007JD03	10/7/2019	Trophy Wife	0.258
304	20191007JD10	10/7/2019	Trophy Wife	0.281
305	20191007JD04	10/7/2019	Sweelen	0.335
306	20191007JD05	10/7/2019	CBD	0.281
307	20191007JD06	10/7/2019	Boax	0.212
308	20191007JD07	10/7/2019	Trump (T-1)	0.204
309	20191007JD08	10/7/2019	ACDC	0.185
310	20191007JD09	10/7/2019	Trophy Wife	0.263
311	20191007AJ01	10/7/2019	Relief Now 13 (RN13)	0.491
312	20191007LJ04	10/7/2019	Berry Blossom	0.312
313	20191007LJ05	10/7/2019	Trump (T-2)	0.296
314	20191007LJ01	10/7/2019	Trump (T-1)	0.444
315	20191007LJ02	10/7/2019	Abacus	0.305
316	20191007LJ03	10/7/2019	Cherry Wine	0.412
317	20191008AB01	10/8/2019	Double Cherry	0.260
318	20191008JD01	10/8/2019	Berry Blossom	0.189
319	20191008LJ01	10/8/2019	Stormy Daniels	0.276
320	20191008LJ02	10/8/2019	Cascade	0.202
321	20191008LJ03	10/8/2019	Peacemaker	0.202
322	20191008LJ04	10/8/2019	Cherry Blossom	0.288
323	20191008LJ05	10/8/2019	Special Sauce	0.437
324	20191008EA05	10/8/2019	Special Sauce	0.437
325	20191009LJ04	10/9/2019	Trump (T-2)	0.301
326	20191009LJ02	10/9/2019	Desert Cherry Wine	0.969
327	20191009LJ03	10/9/2019	Trump (T-1)	0.319
328	20191009EA01	10/9/2019	Trump (T-1)	0.114
329	20191009EA05	10/9/2019	Trump (T-1)	0.207
330	20191009EA06	10/9/2019	Watermelon	0.119
331	20191010AB01	10/10/2019	Berry Blossom	0.110
332	20191010AB02	10/10/2019	Ultra	0.984

Sample Count	Test #	Date Sample Taken	Variety	Total Potential THC
333	20191010AB03	10/10/2019	Ultra	0.511
334	20191010EA01	10/10/2019	Lifter x Oregon CBD	0.404
335	20191010AB03	10/10/2019	Ultra NV	0.511
336	20191010AB02	10/10/2019	Ultra NV	0.984
337	20191011EA01	10/11/2019	Cherry Wine	0.212
338	20191015EA07	10/15/2019	Trump (T-1)	1.156
339	20191015EA08	10/15/2019	Berry Blossom	0.333
340	20191015EA04	10/15/2019	Early Bird	0.252
341	20191015EA05	10/15/2019	Berry Blossom	0.456
342	20191015EA06	10/15/2019	Cherry Wine	0.506
343	20191015EA01	10/15/2019	Trump (T-1)	0.152
344	20191015EA02	10/15/2019	Hempres 2	0.899
345	20191015EA03	10/15/2019	Blue Genius Auto	0.268
346	20191015JD01A	10/15/2019	Lifter	0.322
347	20191015JD01B	10/15/2019	Lifter	0.362
348	20191015JD01C	10/15/2019	Lifter	0.378
349	20191015JD02	10/15/2019	Cherry Blossom	0.242
350	20191015JD03	10/15/2019	Trophy Wife	0.241
351	20191016EA01	10/16/2019	Cherry Bubblegum	0.248
352	20191016EA02	10/16/2019	Cherry Blossom	0.256
353	20191016EA07	10/16/2019	Young Slim 10	0.676
354	20191016EA08	10/16/2019	Cherry Wine	0.229
355	20191016EA03	10/16/2019	T1, Otto 2	0.278
356	20191016EA04	10/16/2019	T1, Cherry Blossom	0.305
357	20191016EA05	10/16/2019	T1, Cherry Wine	0.331
358	20191016EA06	10/16/2019	Trump (T-1)	0.339
359	20191018LJ03	10/18/2019	Cherry Wine	0.321
360	20191018LJ04	10/18/2019	Trump (T-1)	0.311
361	20191018EA01	10/18/2019	Hawaiian Haze	0.407
362	20191018EA02	10/18/2019	Sour Space Candy	0.403
363	20191021LJ01	10/21/2019	KLR1	0.324
364	20191021EA02	10/21/2019	Berry Blossom	0.348
365	20191021EA03	10/21/2019	KLR1	1.672
366	20190924JD01	10/24/2019	Emerald Gold	0.058
367	20190924JD02	10/24/2019	Boax and Otto 2	0.434
368	20190924JD03	10/24/2019	Berry Blossom	0.056
369	20190924JD04	10/24/2019	Berry Blossom	0.041
370	20191024EA03	10/24/2019	Boring Hemp #2	0.170
371	20191024EA04	10/24/2019	Boring Hemp #2	0.175

Sample Count	Test #	Date Sample Taken	Variety	Total Potential THC
372	20191024EA05	10/24/2019	Cherry wine	0.320
373	20191024EA06	10/24/2019	Parkdale	0.223
374	20191024EA01	10/24/2019	Merlot	0.349
375	20191024EA02	10/24/2019	Berry Blossom	0.214
376	20191024EA07	10/24/2019	Trump (T-1)	0.256
377	20191026EA01	10/26/2019	cherry wine	0.293
378	20191026EA02	10/26/2019	Cherry Wine	0.281
379	20191028AB01	10/28/2019	Young Slim 10	0.550
380	20191029EA01	10/29/2019	Baox	0.309
381	20191029EA02	10/29/2019	Baox	0.251
382	20191101KO01	11/1/2019	Cherry Wine	0.150
383	20191107EA01	11/7/2019	Hawaiian Haze	0.252
384	20191107EA02	11/7/2019	Sour Space Candy	0.223
385	20191108LJ01	11/8/2019	Hempres 2	1.128
386	20191112JD01	11/12/2019	MB: Purple Phenotype	0.205
387	20191112JD02	11/12/2019	MB: Funny Pistols	0.111
388	20191112JD03	11/12/2019	MB: Normal Pistols	0.145
389	20191112JD04	11/12/2019	Yellow 41, Yellow 31, Yellow 19	0.133
390	20191112JD05	11/12/2019	Yellow 37	0.309
391	20191112JD06	11/12/2019	CW: Purple Phenotype	0.171
392	20191112JD07	11/12/2019	CW: Funny Pistols	0.213
393	20191112JD08	11/12/2019	CW: Normal Pistols	0.226
394	20191112JD09	11/12/2019	CM: Funny Pistols	0.145
395	20191112JD10	11/12/2019	CM: Purple Phenotype	0.156
396	20191112JD11	11/12/2019	CM: Normal Pistols	0.153
397	20191112JD12	11/12/2019	CW: Funny Pistols	0.169
398	20191112JD13	11/12/2019	CW: Purple Phenotype	0.190
399	20191112JD14	11/12/2019	CW: Normal Pistols	0.120
400	20191113LJ01	11/13/2019	Rogue Seed	0.307
401	20191115LJ01	11/15/2019	Lifter X Oregon CBD	0.348
402	20191125AB01	11/25/2019	Wife	3.350
403	20191125AB02	11/25/2019	Cherry Wine	1.963
404	20191125AB03	11/25/2019	Double Cherry	0.124
405	20191126EA01	11/26/2019	Trump (T-1)	0.120
406	20191126EA02	11/26/2019	Hempres 2	0.135
407	20191126EA03	11/26/2019	Tetra	0.118
408	20191126EA04	11/26/2019	Blue Pineapple	0.078
409	20191203EA01	12/3/2019	Auto Flower	0.133

Sample Count	Test #	Date Sample Taken	Variety	Total Potential THC
410	20191204EA01	12/4/2019	Abacus	0.782
411	20191204EA02	43803	Trump (T-1)	0.139
412	20191205EA03	12/5/2019	Eden	0.056
413	20191205EA04	43804	Casino Cookies	0.074
414	20191205EA05	12/5/2019	Nightingale	0.554
415	20191205EA06	43804	Strawberry Cake	0.068
416	20191205EA07	12/5/2019	Juicy Fruit	0.085
417	20191205EA08	43804	Alien mind control	0.061
418	20191206EA01	12/6/2019	Cherry Wine	0.181
419	20191206EA02	43805	Cherry Wine & T1	0.18
420	20191206EA03	12/6/2019	T1 & Abacus	0.106
421	20191206EA04	43805	Trump (T-1)	0.203
422	20191209EA01	12/9/2019	Cherry Wine	0.319
423	20191209EA02	12/9/2019	Trump (T-1)	0.361
424	20191211EA01	12/11/2019	Cherry Wine	0.351
425	20191211EA02	12/11/2019	Lifter	0.388
426	20191211EA03	43810	Eden	0.094
427	20191211EA04	43810	Trump (T-1)	0.239
428	20191213EA01	12/13/2019	Berry Blossom	0.318
429	20191230NB01	12/30/2019	Lifter	0.517
430	20191230NB02	12/30/2019	Cherry Wine	0.526

Data Analysis: 2019 Non-Compliant Hemp Varieties

Below, Figure 4 reflects the different hemp varieties in 2019 that produced samples exceeding the compliance standard, the number of samples collected for each variety, the number of samples that were compliant and non-compliant of each variety, and the rate at which each variety tested above compliance.

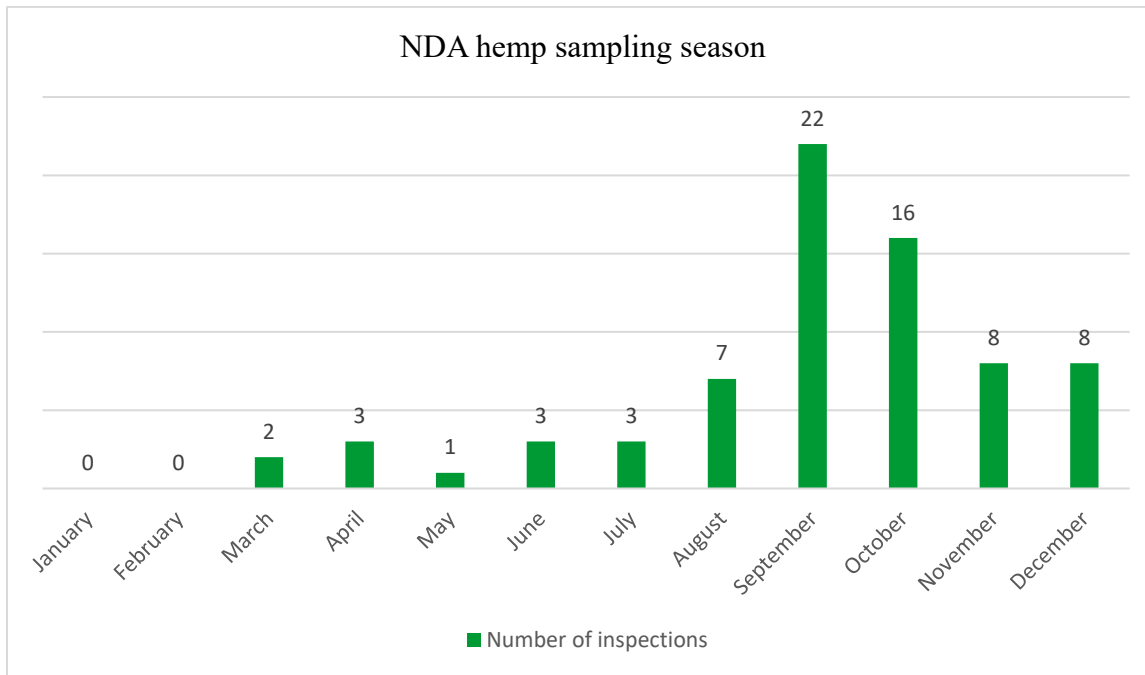
Figure 4: 2019 hemp varieties with non-compliant samples

Variety with Non-Compliant Samples	Total Samples Collected Per Variety	Total Compliant Samples Per Variety	Total Non-Compliant Samples Per Variety	Percentage of Non-Compliance
Abacus	5	2	3	60%
Amensia	1	0	1	100%
Baox	4	3	1	25%
Berry Blossom	44	43	1	2%
Blue Genius	2	0	2	100%
Boax x Otto 2	1	0	1	100%
Cal	1	0	1	100%
CBD Diesel	1	0	1	100%
Cherry Tea	2	0	2	100%
Cherry Wine	47	42	5	11%
Desert Cherry Wine	3	2	1	33%
Hawaiian Haze	9	8	1	11%
Hempres 2	3	1	2	67%
Holy Grail	1	0	1	100%
I-4	3	1	2	67%
KLR1	3	2	1	33%
Lifter	12	5	7	58%
Lifter x Oregon CBD	3	1	2	67%
Nightingale	1	0	1	100%
Relief Now 13 (RN13)	5	1	4	80%
Sour Space Candy	5	4	1	20%
Special Sauce	4	2	2	50%
Trump (T-1)	30	25	5	17%
Trophy Wife	18	17	1	6%
Ultra	2	0	2	100%
Ultra NV	5	1	4	80%
Wife	5	4	1	20%
Young Slim 10	2	0	2	100%

Data Analysis: 2019 Peak Harvest Season

The NDA experienced the highest number of inspections for 2019 from August to September. The number of inspections began to decline in October until leveling out again in November. Figure 5 demonstrates how many NDA hemp inspections were conducted each month of 2019.

Figure 5: Number of hemp inspections by month in 2019



**All samples were collected two weeks prior to harvest. Harvest dates are at the discretion of the grower and do not reflect the age of the plant at the date of harvest.*

Data Analysis: 2019 Intended Production

Hemp growers indicate the products they are intending to grow for on their hemp applications. Figure 6 reflects 2019 hemp production intent as indicated by each hemp grower in their 2019 applications. Many growers indicated they had more than one production intent for their hemp crops, therefore the below data demonstrates how many growers marked production intent for each category. In 2019, 97 hemp growers indicated more than one production intent and only 42 hemp growers indicated only one production intent.

Figure 6: Total number of producers growing for each intended production

Intended Production	Quantity of Growers per Intended Production
Animal Bedding	32
Biofuel	25
Compost	33
Cosmetic	45
Cultivars	37
Dietary Supplement	44
DNA Sequencing	16
Fiber	46
Food-Drink Additive	49
Hempcrete	25
Hemp Oil Extraction	96
Insulation	12
Phytoremediation	13
Seed Stock	48
Undisclosed	4
Other	25

**Data collected from 2019 hemp grower applications*