

2018-2019
Vermont Fertilizer Analysis Report



Vermont Agency of Agriculture, Food and Markets
Public Health & Agricultural Resource Management
116 State Street
Montpelier, VT 05620-2901

Dear Reader:

This annual report summarizes all fertilizer sampling and analyses conducted by the Agency from January 1, 2018 through December 31, 2019. The report includes a summary total for each company from which a sample was collected. All samples are listed individually. In 2018, a total of 235 fertilizer samples were collected and analyzed. For these samples, the Agency's laboratory conducted 734 chemical analyses for nitrogen, available phosphorous, potash, and numerous secondary nutrients such as calcium, magnesium, sulfur, iron, zinc, and boron. In 2019, a total of 61 fertilizer samples were collected and analyzed. For these samples, the Agency's laboratory conducted 171 chemical analyses for nitrogen, available phosphorous, potash, and numerous secondary nutrients such as calcium, magnesium, sulfur, iron, zinc, and boron.

The purpose of the sampling and testing is to ensure that fertilizer consumers are receiving products that conform to the label guarantee for all nutrients. 57 samples failed to meet the label guarantee for one or more nutrients in 2018 and 12 failed to meet the label guarantee in 2019.

Fertilizer manufacturers can be assessed penalties for product deficiencies which exceed the permitted analytical variance. The dollar value of a penalty is based on how far below the guarantee a sample is, the total weight of the lot sampled, and the cost of the nutrient that is deficient. If a consumer is not identified, the penalty is paid to the Agency's fertilizer program.

If you have any questions regarding this report or Vermont's Fertilizer Program, please contact the Public Health and Agriculture Resource Management Division; Vermont Agency of Agriculture, Food and Markets; 116 State Street; Montpelier, VT 05620-2901 or call (802) 828-5050.

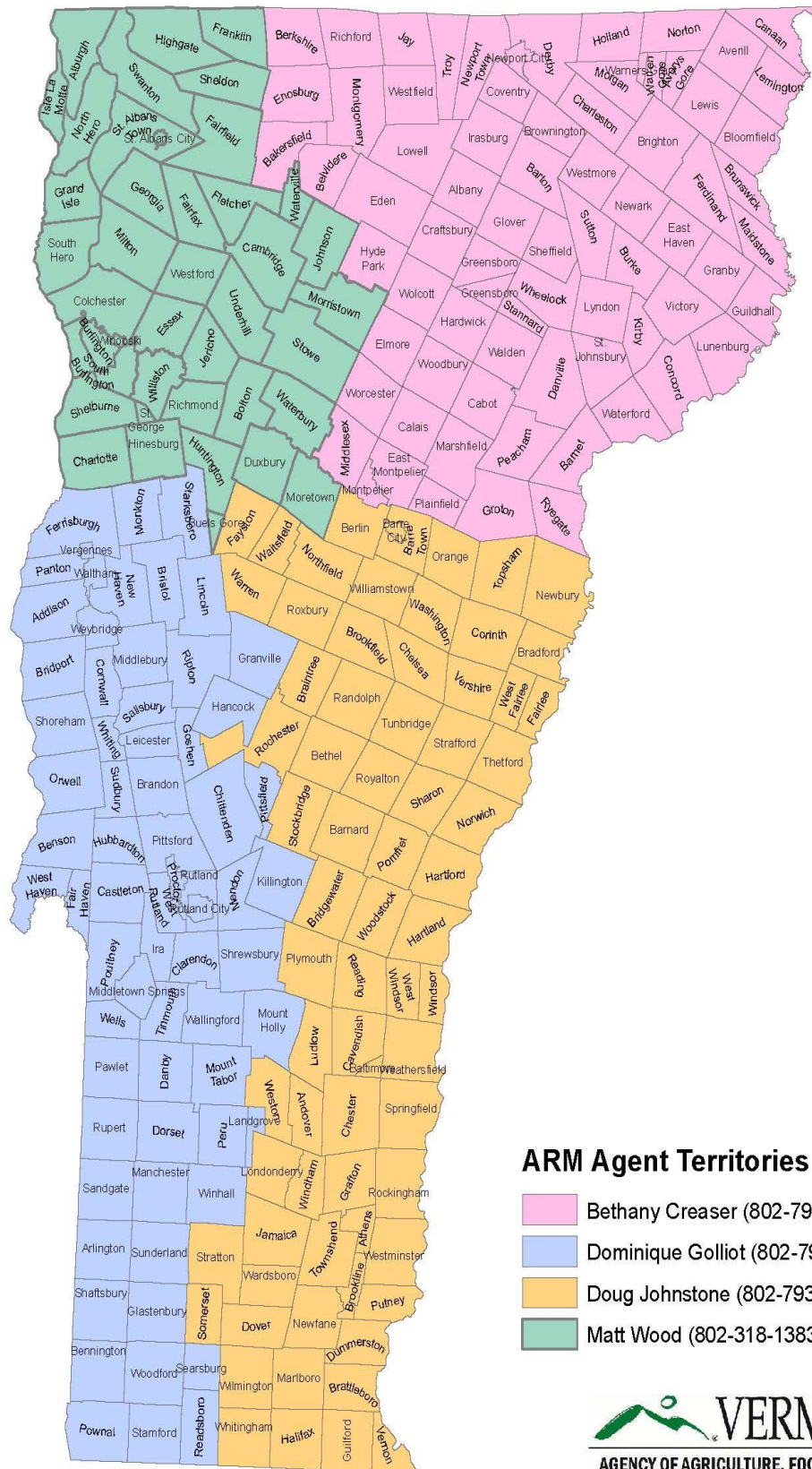
Sincerely,

A handwritten signature in black ink, appearing to read 'Cary Giguere', with a stylized, cursive script.

Cary Giguere
Director

Fertilizer Staff

Cary Giguere	Director
Linda Boccuzzo	Section Chief
Lisa Fantelli	ARM Specialist
Bethany Creaser	Field Agent
Dominique Golliot	Field Agent
Doug Johnstone	Field Agent
Matt Wood	Field Agent



2018 Fertilizer Summary Table

Fertilizer Companies with 10 or More Samples Taken

Company	Samples Collected	Nutrients Analyzed	# of Sample Violations
Bourdeau Brothers	65	130	13
Green Mnt. Fertilizer	13	36	7
Lawes Ag Service Inc	93	154	20
North Country Organics	11	27	1
Northeast Ag Sales Inc	43	112	16
Total of All Samples	225	459	57

Fertilizer Sample Chart Definitions

Pass: A sample receives a pass status if the guarantee for nitrogen, phosphorous or potash it is equal to or greater than the test results.

Fail: A Sample is considered deficient if the guarantee for nitrogen, phosphorous or potash exceeds the AAPFCO's established permitted analytical variance at an established confidence level of 97.5%.

Within Tolerance: A sample is within tolerance if it is greater than the AAPFCO's established permitted analytical variance at an established confidence level of 97.5% but less than 100%.

2018 Fertilizer Sample Results

Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
451819	Bourdeau Brothers	24-12-18	24.98	12.32	17.58		Within Tolerance
451820	Bourdeau Brothers	10-20-20	10.84	23.23	19.59	Pass	Within Tolerance
451821	Bourdeau Brothers	10-20-20	9.5	22.5	23.96	Pass	Within Tolerance
451822	Bourdeau Brothers	7-20-30	6.43	22.55	36.78	Pass	Within Tolerance
451823	Bourdeau Brothers	10-10-20	8.60	9.75	22.78	Pass	Fail
451825	Bourdeau Brothers	0-0-47	.00	.00	49.36	Pass	Pass
451826	Bourdeau Brothers	7-20-30	8.06	17.32	31.48		Fail
451828	Bourdeau Brothers	9-18-9	9.75	16.39	8.53		Fail
318199	Bourdeau Brothers	46-0-0 (Urea)	46.19	.00	.00		Pass
318198	Bourdeau Brothers	46-0-0 (Urea)	46.31	.00	.00		Pass
318197	Bourdeau Brothers	46-0-0 (Urea)	46.16	.00	.00		Pass
318185	Bourdeau Brothers	46-0-0 (Urea)	45.55	.00	.00		Within Tolerance
318183	Bourdeau Brothers	46-0-0 (Urea)	45.37	.00	.00		Within Tolerance
318182	Bourdeau Brothers	46-0-0 (Urea)	45.88	.00	.00		Within Tolerance
318181	Bourdeau Brothers	18-46-0	17.77	43.89	.00		Fail
318170	Bourdeau Brothers	46-0-0 (Urea)	45.21	.00	.00		Within Tolerance

Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
318169	Bourdeau Brothers	46-0-0 (Urea)	45.28	.00	.00		Within Tolerance
318168	Bourdeau Brothers	46-0-0 (Urea)	46.35	.00	.00		Pass
318167	Bourdeau Brothers	46-0-0 (Urea)	45.77	.00	.00		Within Tolerance
318166	Bourdeau Brothers	46-0-0 (Urea)	46.04	.00	.00		Pass
318165	Bourdeau Brothers	46-0-0 (Urea)	46.41	.00	.00		Pass
318164	Bourdeau Brothers	6-24-6	46.51	0.8	0.16		Fail
318163	Bourdeau Brothers	6-24-6	6.53	24.64	6.95		Pass
318162	Bourdeau Brothers	11-52-0	13.25	52.89	.00		Pass
318153	Bourdeau Brothers	46-0-0 (Urea)	45.02	.00	.00		Within Tolerance
318152	Bourdeau Brothers	46-0-0 (Urea)	45.37	.00	.00		Within Tolerance
318151	Bourdeau Brothers	46-0-0 (Urea)	45.76	.00	.00		Within Tolerance
318150	Bourdeau Brothers	6-24-6	6.07	22.76	5.67		Fail
318145	Bourdeau Brothers	6-24-6	6.7	23.74	5.2		Fail
318140	Bourdeau Brothers	46-0-0 (Urea)	46.79	.00	.00		Pass
318139	Bourdeau Brothers	6-24-6	5.93	22.19	5.47		Fail
318138	Bourdeau Brothers	6-24-6	5.99	21.54	5.5		Fail
318126	Bourdeau Brothers	46-0-0 (Urea)	46.84	.00	.00		Pass
318125	Bourdeau Brothers	46-0-0 (Urea)	46.44	.00	.00		Pass
318124	Bourdeau Brothers	32-0-0	31.78	.00	.00		Within Tolerance
318121	Bourdeau Brothers	6-24-6	6.18	25.06	5.62		Within Tolerance

Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
318120	Bourdeau Brothers	6-24-6	6.42	22.15	5.43		Fail
318118	Bourdeau Brothers	46-0-0 (Urea)	45.97	.00	.00		Within Tolerance
318115	Bourdeau Brothers	46-0-0 (Urea)	46.76	.00	.00		Pass
318114	Bourdeau Brothers	6-24-6	6.38	23.26	5.64		Within Tolerance
318110	Bourdeau Brothers	6-24-6	6.03	22.32	5.71		Fail
318105	Bourdeau Brothers	46-0-0 (Urea)	46.43	.00	.00		Pass
318104	Bourdeau Brothers	46-0-0 (Urea)	45.5	.00	.00		Within Tolerance
318102	Bourdeau Brothers	46-0-0 (Urea)	45.96	.00	.00		Within Tolerance
318100	Bourdeau Brothers	46-0-0 (Urea)	45.67	.00	.00		Within Tolerance
318054	Bourdeau Brothers	6-24-6	6.55	23.99	5.96		Within Tolerance
318050	Bourdeau Brothers	46-0-0 (Urea)	46.66	.00	.00		Pass
318042	Bourdeau Brothers	6-24-6	6.18	22.69	5.55		Fail
318041	Bourdeau Brothers	6-24-6	6.26	21.93	5.51		Fail
318040	Bourdeau Brothers	18-46-0	18	47	.00		Pass
318039	Bourdeau Brothers	32-0-0	32.14	.00	.00		Pass
318184	Bourdeau Brothers	46-0-0 (Urea)	45.74	.00	.00		Within Tolerance
318032	Bourdeau Brothers	11-52-0	11.16	51.32	.00		Within Tolerance
318031	Bourdeau Brothers	11-52-0	11.21	.00	.00		Sample Received
318030	Bourdeau Brothers	11-52-0	10.89	51.73	.00		Within Tolerance
318029	Bourdeau Brothers	11-52-0	11.17	51.92	.00		Within Tolerance

Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
318028	Bourdeau Brothers	11-7-25	11.27	7.4	23.87		Fail
318027	Bourdeau Brothers	11-52-0	11.01	52.72	.00		Pass
318026	Bourdeau Brothers	11-52-0	13.32	51.54	.00		Within Tolerance
318025	Bourdeau Brothers	11-52-0	11.27	7.2	25.36		Within Tolerance
318024	Bourdeau Brothers	11-52-0	13.71	51.24	.00		Within Tolerance
318008	Bourdeau Brothers	11-37-0	10.6	40.52	.00		Within Tolerance
318007	Bourdeau Brothers	6-24-6	6.38	24.07	7.3		Pass
318006	Bourdeau Brothers	6-24-6	7.33	24.57	6.57		Pass
318005	Bourdeau Brothers	0-0-60	.00	.00	59.54		Within Tolerance
318004	Bourdeau Brothers	0-0-60	.00	.00	62.61		Pass
1518001	Bourdeau Brothers	39.75-0-0	39.54	.00	.00		Within Tolerance
1518002	Green Mountain Fertilizer Div Ld Oliver	15-8-12	11.77	9.6	10.83		Fail
1518003	Green Mountain Fertilizer Div Ld Oliver	25-5-15	25.01	4.47	14.1		Within Tolerance
1518004	Green Mountain Fertilizer Div Ld Oliver	21-7-21	20.8	7.4	20.00		Within Tolerance
1518005	Green Mountain Fertilizer Div Ld Oliver	10-20-10	9.77	20.39	10.12		Within Tolerance

Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
1518006	Green Mountain Fertilizer Div Ld Oliver	10-6-4	8.82	4.79	4.04		Fail
1518007	Green Mountain Fertilizer Div Ld Oliver	0-0-22	.00	.00	22.05		Pass
1518008	Green Mountain Fertilizer Div Ld Oliver	0-20-20	.00	19.76	17.08		Fail
1518009	Green Mountain Fertilizer Div Ld Oliver	5-10-5	3.58	6.14	4.79		Fail
1518010	Green Mountain Fertilizer Div Ld Oliver	10-20-20	10.14	20.84	17.34		Fail
1518011	Green Mountain Fertilizer Div Ld Oliver	5-10-10	4.51	7.66	10.54		Fail
1518012	Green Mountain Fertilizer Div Ld Oliver	10-10-10	8.07	8.14	8.61		Fail
1518013	Green Mountain Fertilizer Div Ld Oliver	5-10-5	8.85	15.73	6.99		Pass
1518014	Green Mountain Fertilizer Div Ld Oliver	10-10-10	11.92	12.59	12.05		Pass
451824	La Coop Fédérée du Quebec	18-46-0	17.76	45.79	.00		Within Tolerance

Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
451827	La Coop Fédérée du Quebec	46-0-0	45.8	.00	.00		Within Tolerance
318196	Lawes Agricultural Service Inc	46-0-0	46.07	.00	.00		Pass
318195	Lawes Agricultural Service Inc	46-0-0	45.48	.00	.00		Within Tolerance
318194	Lawes Agricultural Service Inc	32-0-0	15.08	.00	.00		Fail
318193	Lawes Agricultural Service Inc	0-0-60	.00	.00	70.06		Pass
318192	Lawes Agricultural Service Inc	0-0-60	.00	.00	63.92		Pass
318191	Lawes Agricultural Service Inc	35-5-10	32.96	5.87	12.34		Fail
318190	Lawes Agricultural Service Inc	46-0-0	45.08	.00	.00		Within Tolerance
318189	Lawes Agricultural Service Inc	46-0-0	45.64	.00	.00		Within Tolerance
318188	Lawes Agricultural Service Inc	35-5-10	34.47	5.69	10.54		Within Tolerance
318187	Lawes Agricultural Service Inc	46-0-0	46.09	.00	.00		Pass
318186	Lawes Agricultural Service Inc	46-0-0	45.95	.00	.00		Within Tolerance
318180	Lawes Agricultural Service Inc	46-0-0	45.45	.00	.00		Within Tolerance

Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
318179	Lawes Agricultural Service Inc	11-37-0	10.89	36.24	.00		Within Tolerance
318178	Lawes Agricultural Service Inc	46-0-0	45.54	.00	.00		Within Tolerance
318177	Lawes Agricultural Service Inc	46-0-0	45.09	.00	.00		Within Tolerance
318176	Lawes Agricultural Service Inc	32-0-0	14.62	.00	.00		Fail
318175	Lawes Agricultural Service Inc	46-0-0	45.14	.00	.00		Within Tolerance
318174	Lawes Agricultural Service Inc	46-0-0	45.8	.00	.00		Within Tolerance
318173	Lawes Agricultural Service Inc	46-0-0	45.52	.00	.00		Within Tolerance
318172	Lawes Agricultural Service Inc	46-0-0	46.09	.00	.00		Pass
318171	Lawes Agricultural Service Inc	46-0-0	46.45	.00	.00		Pass
318161	Lawes Agricultural Service Inc	46-0-0	45.53	.00	.00		Within Tolerance
318160	Lawes Agricultural Service Inc	32-0-0	13.75	.00	.00		Fail
318159	Lawes Agricultural Service Inc	46-0-0	45.41	.00	.00		Within Tolerance
318158	Lawes Agricultural Service Inc	46-0-0	45.46	.00	.00		Within Tolerance

Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
318157	Lawes Agricultural Service Inc	32-0-0	14.51	.00	.00		Fail
318156	Lawes Agricultural Service Inc	7-24-3	7.38	21.49	2.7		Fail
318155	Lawes Agricultural Service Inc	32-0-0	14.98	.00	.00		Fail
318154	Lawes Agricultural Service Inc	46-0-0	46.18	.00	.00		Pass
318149	Lawes Agricultural Service Inc	46-0-0	45.37	.00	.00		Within Tolerance
318148	Lawes Agricultural Service Inc	35-5-10	34.51	5.63	10.79		Within Tolerance
318147	Lawes Agricultural Service Inc	35-5-10	35.11	5.51	11.12		Pass
318146	Lawes Agricultural Service Inc	46-0-0	45.78	.00	.00		Within Tolerance
318144	Lawes Agricultural Service Inc	46-0-0	45.64	.00	.00		Within Tolerance
318143	Lawes Agricultural Service Inc	46-0-0	46.6	.00	.00		Pass
318142	Lawes Agricultural Service Inc	46-0-0	46.52	.00	.00		Pass
318141	Lawes Agricultural Service Inc	46-0-0	14.83	.00	.00		Fail
318137	Lawes Agricultural Service Inc	46-0-0	46.42	.00	.00		Pass

Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
318136	Lawes Agricultural Service Inc	46-0-0	46.4	.00	.00		Pass
318135	Lawes Agricultural Service Inc	46-0-0	46.37	.00	.00		Pass
318134	Lawes Agricultural Service Inc	46-0-0	46.91	.00	.00		Pass
318133	Lawes Agricultural Service Inc	46-0-0	46.63	.00	.00		Pass
318132	Lawes Agricultural Service Inc	32-0-0	14.3	.00	.00		Pass
318131	Lawes Agricultural Service Inc	45-0-0	46.35	.00	.00		Pass
318130	Lawes Agricultural Service Inc	46-0-0	45.33	.00	.00		Within Tolerance
318128	Lawes Agricultural Service Inc	46-0-0	45.71	.00	.00		Within Tolerance
318129	Lawes Agricultural Service Inc	46-0-0	46.82	.00	.00		Within Tolerance
318127	Lawes Agricultural Service Inc	46-0-0	47.23	.00	.00		Within Tolerance
318123	Lawes Agricultural Service Inc	46-0-0	46.85	.00	.00		Pass
318122	Lawes Agricultural Service Inc	32-0-0	14.65	.00	.00		Fail
318119	Lawes Agricultural Service Inc	35-5-10	34.06	5.26	11.14		Within Tolerance

Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
318117	Lawes Agricultural Service Inc	35-5-10	34.84	6.25	10.79		Within Tolerance
318116	Lawes Agricultural Service Inc	32-0-0	15.67	.00	.00		Fail
318113	Lawes Agricultural Service Inc	16-21-0	7.2	21.78	.00		Fail
318112	Lawes Agricultural Service Inc	7-24-3	7.12	23.5	2.98		Within Tolerance
318111	Lawes Agricultural Service Inc	46-0-0	47.42	.00	.00		Pass
318109	Lawes Agricultural Service Inc	7-24-3	7.35	24.35	3.03		Pass
318108	Lawes Agricultural Service Inc	46-0-0	47.39	.00	.00		Pass
318107	Lawes Agricultural Service Inc	46-0-0	46.54	.00	.00		Pass
318106	Lawes Agricultural Service Inc	22-0-0	15.22	.00	.00		Fail
318103	Lawes Agricultural Service Inc	46-0-0	46.55	.00	.00		Pass
318101	Lawes Agricultural Service Inc	0-0-60	.00	.00	61.96		Pass
318049	Lawes Agricultural Service Inc	35-5-10	34.33	6.9	12.69		Within Tolerance
318048	Lawes Agricultural Service Inc	7-24-3	7.22	21.89	2.97		Fail

Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
318047	Lawes Agricultural Service Inc	46-0-0	46.11	.00	.00		Pass
318046	Lawes Agricultural Service Inc	46-0-0	45.83	.00	.00		Within Tolerance
318045	Lawes Agricultural Service Inc	7-24-3	7.2	21.86	3.02		Fail
318044	Lawes Agricultural Service Inc	46-0-0	46.63	.00	.00		Pass
318043	Lawes Agricultural Service Inc	35-5-10	34.57	5.86	11.96		Within Tolerance
318038	Lawes Agricultural Service Inc	32-0-0	15.09	.00	.00		Fail
318037	Lawes Agricultural Service Inc	46-0-0	46.44	.00	.00		Pass
318036	Lawes Agricultural Service Inc	35-5-10	35.02	5.42	9.86		Within Tolerance
318035	Lawes Agricultural Service Inc	46-0-0	46.67	.00	.00		Pass
318034	Lawes Agricultural Service Inc	35-5-10	33.93	5.8	11.66		Within Tolerance
318033	Lawes Agricultural Service Inc	46-0-0	45.87	.00	.00		Within Tolerance
318023	Lawes Agricultural Service Inc	24-12-18	23.08	11.94	18.59		Within Tolerance
318022	Lawes Agricultural Service Inc	11-37-0	11.02	36.28	.00		Within Tolerance

Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
318021	Lawes Agricultural Service Inc	35-5-10	33.99	5.83	10.24		Within Tolerance
318020	Lawes Agricultural Service Inc	35-5-10	32.64	6.25	12.18		Fail
318019	Lawes Agricultural Service Inc	46-0-0	45.99	.00	.00		Within Tolerance
318018	Lawes Agricultural Service Inc	32-0-0	14.84	.00	.00		Fail
318017	Lawes Agricultural Service Inc	46-0-0	46.15	.00	.00		Pass
318016	Lawes Agricultural Service Inc	46-0-0	46.13	.00	.00		Pass
318015	Lawes Agricultural Service Inc	35-5-10	32.65	5.97	11.91		Fail
318014	Lawes Agricultural Service Inc	8-32-16	12.95	29.93	20.11		Fail
318013	Lawes Agricultural Service Inc	35-5-10	34.07	6.03	9.49		Within Tolerance
318012	Lawes Agricultural Service Inc	13-5-20	13.52	6.99	19.74	Pass	Within Tolerance
318011	Lawes Agricultural Service Inc	35-5-10	34.16	5.01	11.73		Within Tolerance
318010	Lawes Agricultural Service Inc	30-0-16	29.6	.00	15.9	Within Tolerance	Within Tolerance
318009	Lawes Agricultural Service Inc	46-0-0	10.39	.00	.00		Fail

Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
318003	Lawes Agricultural Service Inc	35-5-10	34.8	5.3	11.98		Within Tolerance
318002	Lawes Agricultural Service Inc	7-24-3	7.17	24.34	2.79		Within Tolerance
318001	Lawes Agricultural Service Inc	46-0-0	45.22	.00	.00		Within Tolerance
318000	Lawes Agricultural Service Inc	32-0-0	15	.00	.00		Fail
318153	Liquid Products Llc	6-24-6	6.2	25.4	5.98		Within Tolerance
318052	Liquid Products Llc	0-0-0	.00	.00	.00	Within Tolerance	Within Tolerance
28001	North Country Organics	Pro-Start 2-3-3	2.51	3.19	3.79		Pass
28002	North Country Organics	Pro-Start 2-3-3	2.56	2.96	3.17		Within Tolerance
28003	North Country Organics	Pro-Gro 5-3-4	4.55	4.81	3.66		Within Tolerance
28004	North Country Organics	Pro-Gro 5-3-4	4.4	3.27	3.51		Within Tolerance
28005	North Country Organics	8-1-9	8.02	1.86	11.37		Pass
28006	North Country Organics	8-1-9	7.78	2.06	10.07		Within Tolerance
28007	North Country Organics	Pro-Holly 4-6-4	3.81	7.93	4.59		Within Tolerance
28008	North Country Organics	Pro-Holly 4-6-4	4.02	9.02	3.95		Within Tolerance

Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
28009	North Country Organics	Pro-Gro 5-3-4	4.72	3.37	4.85		Within Tolerance
28010	North Country Organics	Pro-Gro 5-3-4	5.12	3.76	3.75		Within Tolerance
28011	North Country Organics	10-0-0	9.18	1.49	0.96		Fail
28012	North Country Organics	10-0-0	9.29	1.44	1.22		Within Tolerance
28013	North Country Organics	4-3-3	3.96	2.97	2.76		Within Tolerance
28014	Northeast Agricultural Sales Inc	22-0-24	22.45	0.11	20.75		Fail
28015	Northeast Agricultural Sales Inc	19.8-0-24	19.15	.00	25.32		Within Tolerance
451801	Northeast Agricultural Sales Inc	45-0-0	44.31	.00	.00		Within Tolerance
451802	Northeast Agricultural Sales Inc	0-0-60	.00	.00	58.52		Within Tolerance
451803	Northeast Agricultural Sales Inc	0-0-60	.00	.00	59.66		Within Tolerance
451804	Northeast Agricultural Sales Inc	23-5-20	24.49	5.29	19.76	Pass	Within Tolerance
451805	Northeast Agricultural Sales Inc	23-4-16	25.23	5.12	14.18		Fail
451806	Northeast Agricultural Sales Inc	24-6-12 HY	25.59	6.06	11.59		Within Tolerance

Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
451807	Northeast Agricultural Sales Inc	39-0-0	40.84	.00	.00	Within Tolerance	Within Tolerance
451808	Northeast Agricultural Sales Inc	30-0-15	29.05	.00	16.06		Within Tolerance
451809	Northeast Agricultural Sales Inc	24-6-12 HY	23.63	7.94	14.65		Within Tolerance
451810	Northeast Agricultural Sales Inc	30-0-15	32.06	.00	14.64		Within Tolerance
451811	Northeast Agricultural Sales Inc	10-0-42	10.54	.00	41.15		Within Tolerance
451812	Northeast Agricultural Sales Inc	10-0-42	10.04	.00	42.75		Pass
451813	Northeast Agricultural Sales Inc	23.1-6.01-20.26	24.12	5.84	20.22		Within Tolerance
451814	Northeast Agricultural Sales Inc	15-10-30	12.46	11.41	32.81		Fail
451815	Northeast Agricultural Sales Inc	0-0-60	.00	.00	61.00		Pass
451816	Northeast Agricultural Sales Inc	10-10-10	7.91	10.39	12.00		Fail
451817	Northeast Agricultural Sales Inc	7-24-3	7.95	25.41	2.61		Within Tolerance
451818	Northeast Agricultural Sales Inc	25-11-0	24.82	11.98	.00		Within Tolerance
451829	Northeast Agricultural Sales Inc	23-12-18	24.05	12.76	16.1		Fail

Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
451830	Northeast Agricultural Sales Inc	23-12-18	24.73	11.51	20.9		Within Tolerance
451831	Northeast Agricultural Sales Inc	19-19-19	21.22	20.59	16.01		Fail
451832	Northeast Agricultural Sales Inc	19-19-19	20.32	19.52	16.52		Fail
451833	Northeast Agricultural Sales Inc	19-19-19	21.65	18.8	17.85		Within Tolerance
451834	Northeast Agricultural Sales Inc	19-19-19	22.18	19.59	16.37		Fail
451835	Northeast Agricultural Sales Inc	19-19-19	22.67	17.4	16.23		Fail
451836	Northeast Agricultural Sales Inc	25-5-15	26.82	4.53	14.02		Within Tolerance
451837	Northeast Agricultural Sales Inc	25-5-15	25.31	5.7	14.69		Within Tolerance
451838	Northeast Agricultural Sales Inc	39-0-0	41.72	.00	.00	Pass	Pass
451839	Northeast Agricultural Sales Inc	45-0-0	48.59	.00	.00		Pass
451840	Northeast Agricultural Sales Inc	30-0-20	32.38	.00	19.17		Within Tolerance
451841	Northeast Agricultural Sales Inc	0-0-60	.00	.00	59.78		Within Tolerance
451842	Northeast Agricultural Sales Inc	24-6-12 HY	25.08	11.78	16.44		Pass

Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
451843	Northeast Agricultural Sales Inc	10-21-10	14.11	19.24	9.16	Within Tolerance	Fail
451844	Northeast Agricultural Sales Inc	10-21-10	13.54	17.03	11.05	Pass	Fail
451845	Northeast Agricultural Sales Inc	19-19-19	24.35	19.7	11.39		Fail
451846	Northeast Agricultural Sales Inc	19-19-19	22.43	20.68	14.34		Fail
451847	Northeast Agricultural Sales Inc	9-19-9	13.1	21.11	20.07	Fail	Fail
451848	Northeast Agricultural Sales Inc	9-19-9	12.9	17.28	19.47	Fail	Fail
451849	Northeast Agricultural Sales Inc	34-0-15	31.86	.00	11.66		Fail
451850	Northeast Agricultural Sales Inc	28-7-14	28.58	7.04	12.62		Fail
28016	Northeast Agricultural Sales Inc	39-0-0	37.97	.00	.00	Pass	Within Tolerance
318051	Synagri	0-0-22	.00	.00	23.89	Pass	Pass

2019 Fertilizer Summary Table

Fertilizer Companies with 10 or More Samples Taken

Company	Samples Collected	Nutrients Analyzed	# of Sample Violations
Northeast Ag Sales	55	161	11
Total of All Samples	55	161	11

Fertilizer Sample Chart Definitions

Pass: A sample receives a pass status if the guarantee for nitrogen, phosphorous or potash it is equal to or greater than the test results.

Fail: A Sample is considered deficient if the guarantee for nitrogen, phosphorous or potash exceeds the AAPFCO's established permitted analytical variance at an established confidence level of 97.5%.

Within Tolerance: A sample is within tolerance if it is greater than the AAPFCO's established permitted analytical variance at an established confidence level of 97.5% but less than 100%.

2019 Fertilizer Sample Results

Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
29001	Carovail	21-17-0	20.99	14.17	.00	Fail	Fail
451901	Northeast Ag Sales Inc	28-0-15	29.63	.00	16.54	Pass	Pass
451902	Northeast Ag Sales Inc	8-8-16	10.52	8.62	15.96	Pass	Within Tolerance
451903	Northeast Ag Sales Inc	23-7-23	21.26	8.07	24.92		Fail
451904	Northeast Ag Sales Inc	34-0-10	33.18	.00	11.46	Pass	Within Tolerance
451905	Northeast Ag Sales Inc	34-0-10	33.83	.00	12.52	Pass	Within Tolerance
451906	Northeast Ag Sales Inc	18-0-31	17.67	.00	34.86	Pass	Within Tolerance
451907	Northeast Ag Sales Inc	18-0-31	19.93	.00	33.04	Pass	Pass
451908	Northeast Ag Sales Inc	18-0-31	18.08	.00	35.64	Pass	Pass
451909	Northeast Ag Sales Inc	18-0-31	18.01	.00	36.97	Pass	Pass
451910	Northeast Ag Sales Inc	23-12-18	24.07	11.25	20.11		Within Tolerance
451911	Northeast Ag Sales Inc	26-2-20	27.43	2.16	22.15	Pass	Pass
451912	Northeast Ag Sales Inc	23-7-23	23.17	6.34	25.07		Within Tolerance

Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
451913	Northeast Ag Sales Inc	24-6-12	25.44	5.27	12.89		Within Tolerance
451914	Northeast Ag Sales Inc	23-7-23	24.46	6.35	23.48		Within Tolerance
451915	Northeast Ag Sales Inc	45-0-0	46.04	.00	.00		Pass
451916	Northeast Ag Sales Inc	34-0-15	33.22	.00	17.74		Within Tolerance
451917	Northeast Ag Sales Inc	24-6-12	24.96	5.71	12.14		Within Tolerance
451918	Northeast Ag Sales Inc	25-12-18	24.30	10.19	19.19		Fail
451919	Northeast Ag Sales Inc	20-6-10	19.71	7.07	10.03		Within Tolerance
451922	Northeast Ag Sales Inc	23-0-23	23.06	.00	24.56		Pass
451924	Northeast Ag Sales Inc	7-24-3	7.83	24.28	2.68		Within Tolerance
451923	Northeast Ag Sales Inc	7-24-3	8.13	23.16	2.70		Within Tolerance
451925	Northeast Ag Sales Inc	30-5-15	30.94	5.12	13.35		Fail
451926	Northeast Ag Sales Inc	30-5-15	30.05	4.68	15.19		Within Tolerance
451927	Northeast Ag Sales Inc	30-0-20	30.03	.00	22.10		Pass
451928	Northeast Ag Sales Inc	25-5-15	30.38	4.36	13.36		Fail
451929	Northeast Ag Sales Inc	25-5-15	24.38	5.56	14.45		Within Tolerance

Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
451930	Northeast Ag Sales Inc	25-5-15	25.81	5.19	14.54		Within Tolerance
451931	Northeast Ag Sales Inc	25-5-15	29.39	4.45	14.79		Within Tolerance
451932	Northeast Ag Sales Inc	25-5-15	23.01	5.96	15.13		Fail
451933	Northeast Ag Sales Inc	25-5-15	22.98	5.53	15.91		Fail
451934	Northeast Ag Sales Inc	25-5-15	28.56	4.93	14.12		Within Tolerance
451935	Northeast Ag Sales Inc	25-5-15	24.56	5.30	15.43		Within Tolerance
451936	Northeast Ag Sales Inc	25-5-15	30.09	5.06	13.92		Within Tolerance
451937	Northeast Ag Sales Inc	30-0-15	29.42	.00	17.36	Pass	Within Tolerance
451939	Northeast Ag Sales Inc	10-20-10	10.86	19.56	12.42		Within Tolerance
451940	Northeast Ag Sales Inc	12-15-18	12.59	14.54	23.45	Fail	Fail
451941	Northeast Ag Sales Inc	23-7-23	25.25	6.26	23.97		Within Tolerance
451942	Northeast Ag Sales Inc	23-7-23	22.75	6.96	25.94		Within Tolerance
451944	Northeast Ag Sales Inc	23-7-23	22.07	.00	32.27		Within Tolerance
451946	Northeast Ag Sales Inc	17.11-11.1-10.44	17.39	10.44	16.86	Within Tolerance	Fail
451947	Northeast Ag Sales Inc	17.11-11.1-16.7	17.04	10.45	17.59	Within Tolerance	Within Tolerance
451948	Northeast Ag Sales Inc	17.11-11.1-16.7	16.46	10.73	17.93	Within Tolerance	Within Tolerance
451949	Northeast Ag Sales Inc	32-0-0	32.25	.00	.00		Pass
451950	Northeast Ag Sales Inc	6-23-3	7.50	20.73	2.78		Fail
451545	Northeast Ag Sales Inc	23-0-30	23.18	.00	31.43		Pass
451951	Northeast Ag Sales Inc	10-10-10	9.43	10.75	8.35		Fail

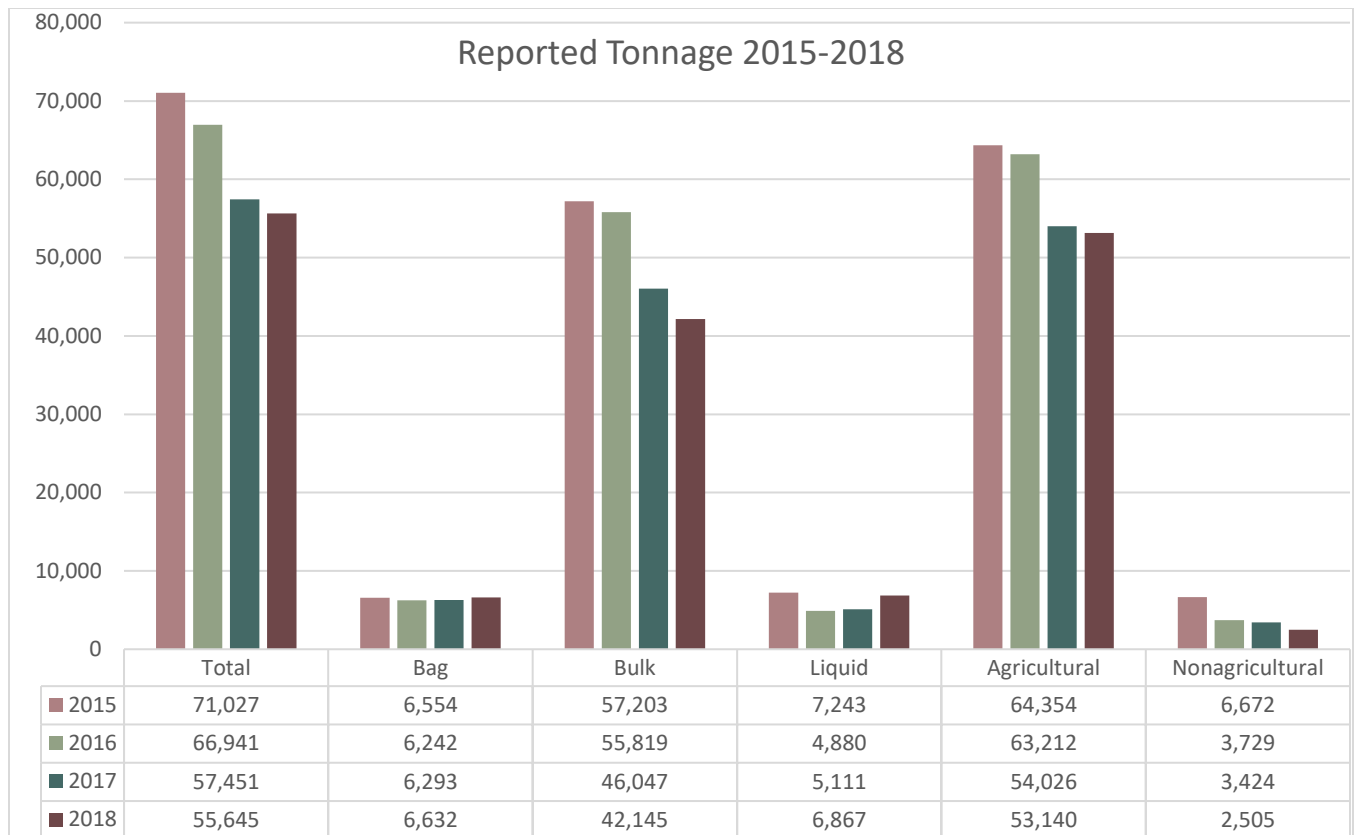
Sample ID	Business Name	NPK Guarantee	Lab Result N	Lab Result P	Lab Result K	Micronutrients	Sample Status
451952	Northeast Ag Sales Inc	25-0-15	25.08	.00	14.90		Within Tolerance
451953	Northeast Ag Sales Inc	34-0-15	34.65	.00	14.03		Within Tolerance
451954	Northeast Ag Sales Inc	30-0-15	29.31	.00	16.64	Pass	Within Tolerance
451955	Northeast Ag Sales Inc	30-0-15	31.94	.00	14.11	Pass	Within Tolerance
451956	Northeast Ag Sales Inc	39-0-0	36.70	.00	.00	Pass	Fail
451958	Northeast Ag Sales Inc	15-0-40	14.91	.00	41.10		Within Tolerance
451959	Northeast Ag Sales Inc	39-0-0	38.84	.00	.00		Within Tolerance
451960	Northeast Ag Sales Inc	5-4-3	4.49	4.34	4.66		Within Tolerance
451920	Yara North America Inc	46-0-0	46.29	.00	.00		Pass
451921	Yara North America Inc	46-0-0	46.22	.00	.00		Pass
451938	Yara North America Inc	46-0-0	46.58	.00	.00		Pass
451943	Yara North America Inc	46-0-0	46.68	.00	.00		Pass
451957	Yara North America Inc	0-0-60	.00	.00	62.12		Pass

Tonnage Data 2018

Total fertilizer tonnage reported summary

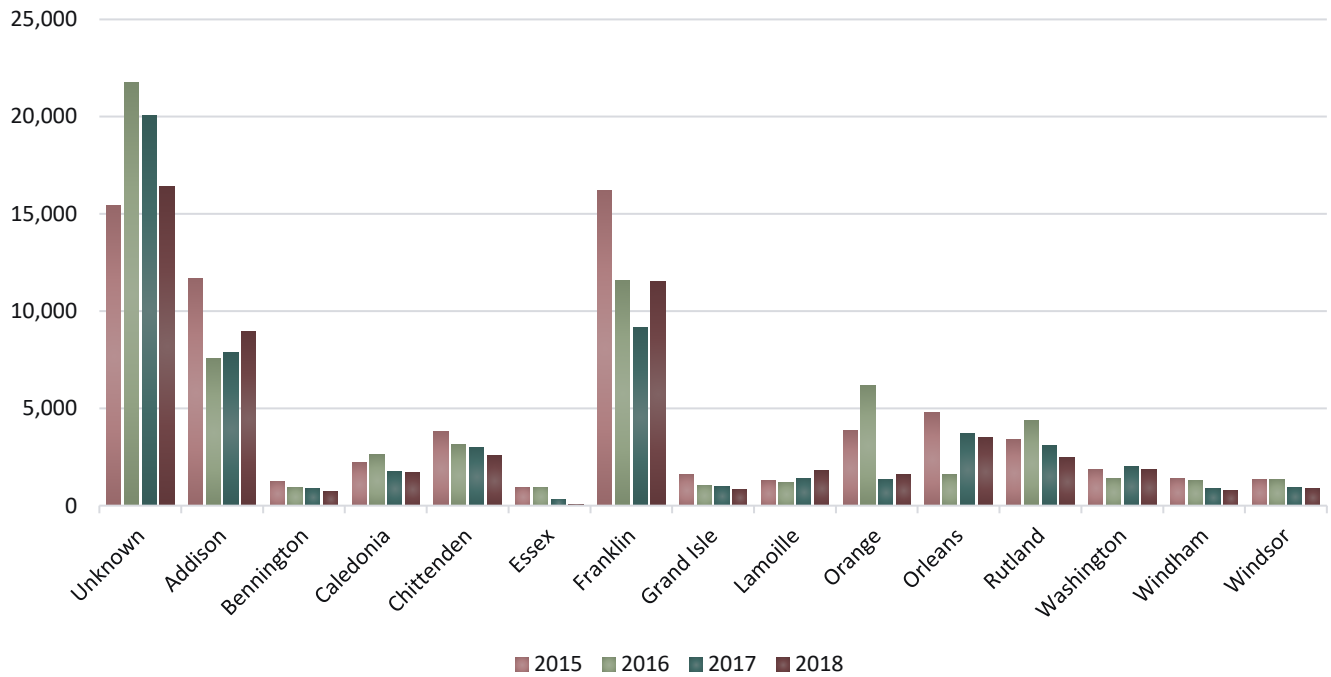
January 1, 2018-December 31, 2018

	Total (tons)	Container (tons)			Use (tons)	
		Bag	Bulk	Liquid	Agricultural	Nonagricultural
Multi-nutrient	7,496	459	6,113	924	7,283	213
Nitrogen	9,985	20	8,691	1,273	9,984	1
Phosphate	15	1	13	0	14	0
Potash	2,379	6	2,373	0	2,376	3
Sec/Micro	1,330	521	793	16	1,316	14
Misc.*	34,440	5,625	24,162	4,654	32,166	2,274
	55,645	6,632	42,145	6,867	53,139	2,506
*Misc. = lime, calcite, compost, etc.						



Since 2015, there has been a gradual decrease in total reported tonnage. In 2018 there was a slight increase of reported bag and liquid fertilizer with a continued decrease of reported bulk fertilizer. The decrease in tonnage is reported for both Agricultural and nonagricultural fertilizer. Counties with the highest amount of reported tonnage are Franklin and Addison counties.

Tons per County by Year 2015-2018



County	2015	2016	2017	2018
Unknown	15,422	21,734	20,052	16,415
Addison	11,673	7,553	7,882	8,949
Bennington	1,267	933	896	706
Caledonia	2,196	2,613	1,763	1,713
Chittenden	3,813	3,150	3,000	2,588
Essex	934	958	296	47
Franklin	16,187	11,571	9,153	11,503
Grand Isle	1,623	1,062	1,008	847
Lamoille	1,275	1,203	1,415	1,787
Orange	3,850	6,197	1,364	1,586
Orleans	4,789	1,591	3,728	3,518
Rutland	3,396	4,363	3,072	2,494
Washington	1,849	1,400	2,009	1,869
Windham	1,396	1,288	868	764
Windsor	1,356	1,326	943	859
	71,027	66,941	57,449	55,644

2018 Product Registration

	2018 Products registered	Percentage
Feed	14424	48
Fertilizer	3,923	13
Lime	115	<1
Pesticides	11,628	39
Total	30,356	100.00

