

2019 OHGA REPORT

Prepared by: Canadian Food & Wine Institute
Innovation Centre

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Project Overview

Team

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Project Description

An overview of the results of the hops sent in by OHGA members during the 2019 harvest season, who have agreed to share their results with the OHGA. Individual varieties sent in by various hop growers were assessed for moisture, alpha and beta acids and hops storage index.

Methods

Alpha and Beta Acid Analysis and Moisture Content

Data was collected from OHGA members who opted in to having their results included in this report. The 2018 data in this report for comparative purposes was updated (from the previous year's report) to include testing done after the 2018 report was finalized (on samples from the 2018 growing year).

Alpha and beta acid content was determined using the ASBC Hops 6A method of analysis. Every sample tested was run in triplicate and every test was run alongside a hop extract with a known alpha and beta acid concentration as a standard. Moisture content was measured using a Mettler Toledo HE73 Moisture Analyzer.

For alpha and beta acids and hop storage index (H.S.I.), the average and standard deviation (for varieties with two or more samples) were calculated for each variety for each sample type (dry cone, wet cone and pellet). Corrected values were also calculated for alpha and beta acids, based on moisture content, with the following calculation:

$$\text{Corrected acid \%} = \text{measured acid \%} \times (90 / (100 - \text{measured moisture \%}))$$

Results

Year	Wet Cones	Dry Cones	Pellets	Total
2017	5	25	40	70
2018	5	25	83	113
2019	1	6	43	50
Total	11	56	167	

Table 1: Sample Type from 2017-2019

Varietal	Sample Type	Number Tested	α-acid			β-acid			H.S.I.		% Moisture
			Avg.	Corr. Avg.	Std. Dev.	Avg.	Corr. Avg.	Std. Dev.	Avg.	Std. Dev.	Avg.
Alpharoma	Pellets	1	4.8	5.0		2.2	2.3		0.3		13.6
Canadian Red Vine	Dry Cones	1	4.9	4.8		3.6	3.5		0.2		8.0
Cascade	Dry Cones	1	2.6	5.9		2.9	6.7		0.2		61.0
	Pellets	12	5.8	5.7	1.51	6.8	6.6	1.31	0.2	0.02	7.3
Cashmere	Pellets	1	5.9	5.4		6.2	5.7		0.3		2.8
Centennial	Dry Cones	1	4.7	9.0		1.9	3.7		0.2		52.9
	Pellets	6	7.8	7.6	0.65	4.3	4.2	1.09	0.3	0.02	7.5
Chinook	Wet Cones	1	2.5	10.0		0.5	2.2		0.1		78.0
	Dry Cones	2	6.1	8.1	2.53	2.1	2.8	0.64	0.2	0.01	31.5
	Pellets	4	8.5	8.3	0.75	2.9	2.9	0.18	0.3	0.03	7.9
Columbia	Pellets	2	5.6	5.7	1.14	2.4	2.4	0.30	0.3	0.00	11.5
Glacier	Pellets	2	4.2	4.1	0.11	6.1	6.0	1.96	0.3	0.01	7.8
Hallertauer	Pellets	2	3.3	3.3	0.47	6.2	6.2	0.24	0.2	0.00	9.2
Heritage	Pellets	1	3.8	3.6		3.7	3.5		0.2		5.7
Magnum	Dry Cones	1	6.5	6.4		2.6	2.6		0.2		8.9
Mt. Hood	Pellets	1	2.4	2.4		3.8	3.9		0.4		11.1
Mt. Rainier	Pellets	1	4.7	5.2		6.1	6.8		0.3		19.5
Newport	Pellets	2	7.5	7.2	0.58	6.2	6.0	1.56	0.3	0.05	5.9
Nugget	Pellets	1	11.4	10.9		4.3	4.1		0.3		5.9
Rakau	Pellets	1	6.1	6.0		2.5	2.4		0.2		8.2
Sorachi Ace	Pellets	1	10.2	10.3		6.0	6.1		0.2		10.9
Triple Perle	Pellets	2	7.4	7.3	1.04	3.1	3.1	0.01	0.3	0.03	9.2
Ultra	Pellets	1	9.0	9.7		4.1	4.4		0.3		16.5
Vanguard	Pellets	1	3.7	3.6		5.5	5.3		0.3		6.0
Zeus	Pellets	1	16.1	15.7		5.9	5.8		0.3		8.0

Table 2: 2019 Alpha and Beta Acids, Moisture and Hops Storage Index (H.S.I.)

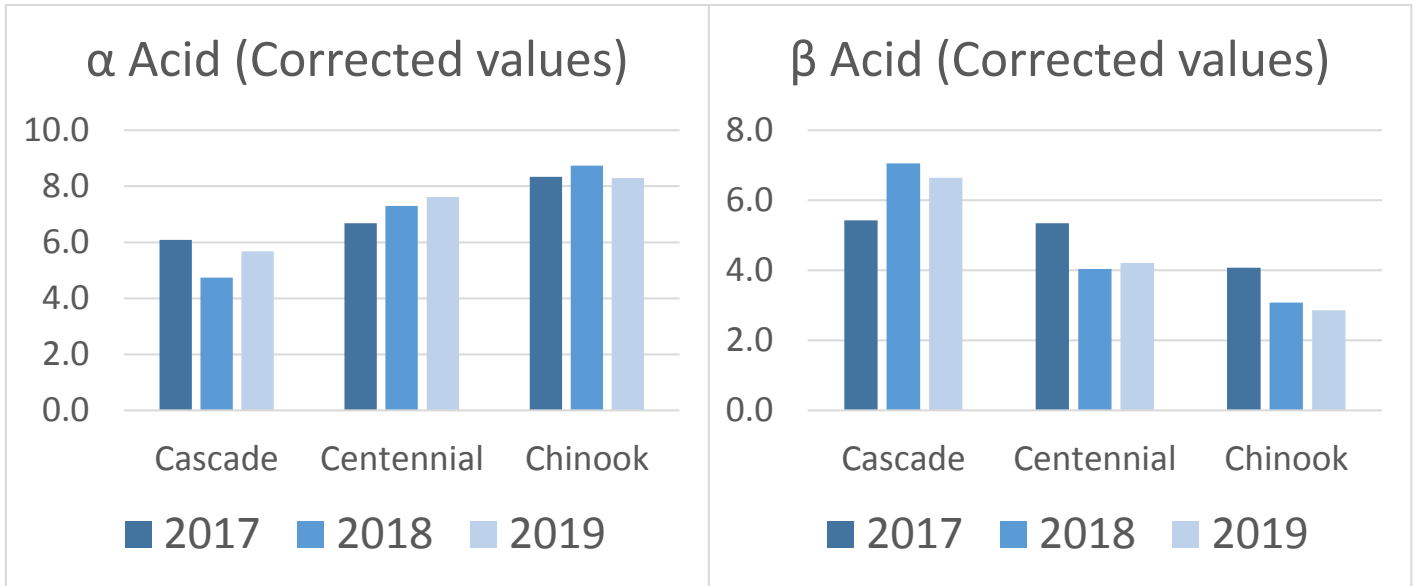


Figure 1: Corrected Acid Values for Three Varietals from 2017-2019

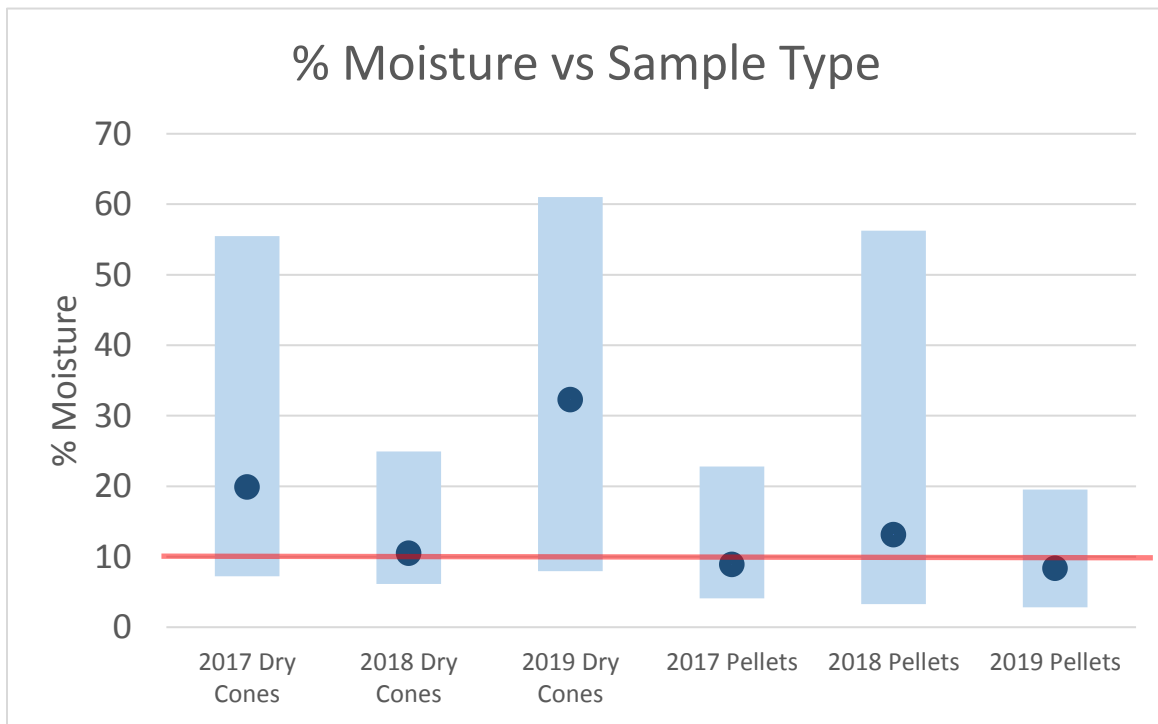


Figure 2: % Moisture vs Sample Type from 2017-2019. Bars = mix/max ranges, Circles = averages, Red line = 10% moisture.

Discussion and Conclusions

Overall, there was a 56% reduction in the number of samples tested from 2018 to 2019 (Table 1). Interestingly, there was a 76% decline in dry cone samples, which may mean more growers are opting for palletization, which is preferred by brewers. Similar to previous years, wet cones were the least common form sent in for analysis, with only one sample received this year. The total number of varieties also declined, with 21 different varieties tested this year, compared to 30 in 2018.

The average acid values, H.S.I. and moisture results are presented in Table 2. Once again, Cascade, Centennial and Chinook were the only varieties with a large sample size. While there are differences in the corrected acid values for each of the three varieties from 2017 to 2019, the difference is not significant, and there is no trend based on year (Figure 1).

The moisture content, especially in pelletized samples, is better than in previous years, possibly signifying that growers and processors are recognizing the importance of moisture to hop quality (Figure 2). The large range in the moisture in the dry cone samples is due to the small sample number (6), and the fact that three of those samples had moisture levels ranging from 30 – 60%.

With the maturation of the industry, it is encouraging to note that there seems to be a trend toward pelletized samples with adequate moisture control, which can help increase the quality of Ontario grown hops.