



**YAKIMA
CHIEF
- HOPS -**



QUALITY

JOE NIEMANN

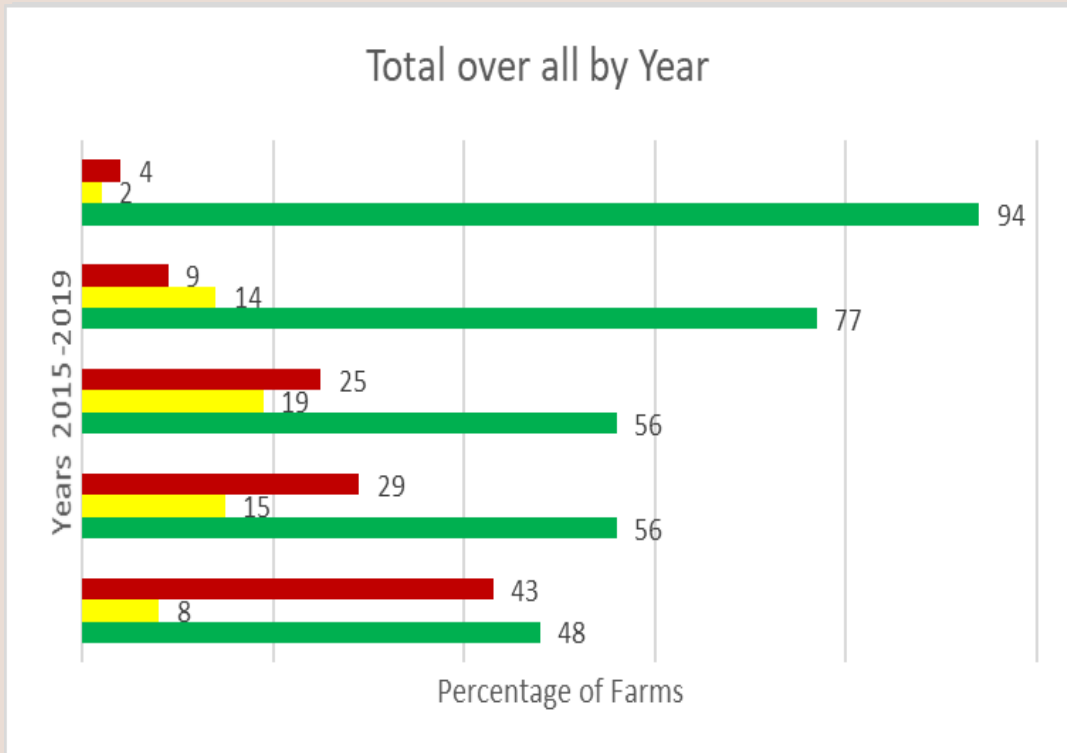
MISSY RAVER

JOE NIEMANN
QUALITY SYSTEMS & FOOD SAFETY MANAGER

CERTIFICATIONS
FARM TO PACKAGE

FARM – FACILITY ASSESSMENTS

- Every farms that delivers to Yakima Chief is required to have an assessment done of their picking, drying and baling facilities
- Growers must follow our GreenChief Quality Plan
- Requirements include
 - Risk assessments
 - Maintenance records
 - Safety
 - Recall and recovery policies
- Growers are committed to the program and investing in continues improvement



A RANCH OVER TIME



YCH CERTIFICATIONS

AT OUR FACILITIES



QUALITY MANAGEMENT SYSTEM: ISO:9001:2015

Contains tools and guidance that ensures YCH's products and services fulfill quality requirements, from both a regulatory and customer satisfaction perspective. YCH has been certified since 1994.



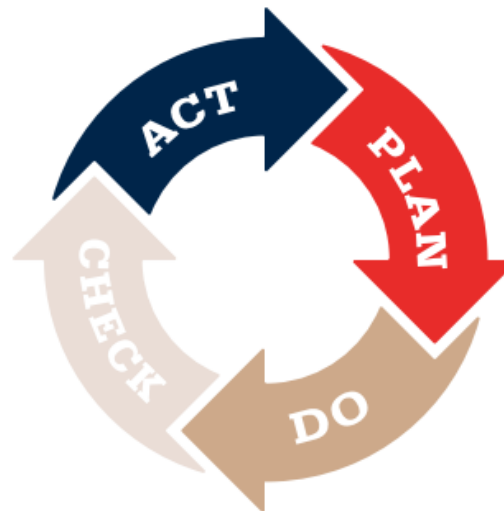
ENVIRONMENTAL MANAGEMENT SYSTEM: ISO:14001:2015

Provides YCH with the framework necessary to actively track the use of resources and production of waste within our operations to ultimately improve our overall environmental performance. YCH has been certified since 2010.



GOOD MANUFACTURING PRACTICES

Our facilities operate in accordance with current Good Manufacturing Practices (GMP) for food processors. All employees are given training on food safety during orientation and for their specific positions. We employ Hazardous Analysis and Critical Control Points (HACCP) system for all areas of production.



Plan. Do. Check. Act. Four simple words driving serious change with our organization. This four-stage method has provided a solid framework for constant improvements throughout all aspects of our operations at YCH.

ORGANIC



- YCH sources Organic Hops from 6 farms
- All facilities and products are certified
 - Warehouses
 - Pellet production facilities
 - CryoHops facility
 - Extract production facility
- Export our Organic hops to EU and Canada

QUALITY IN THE FINAL PACKAGE

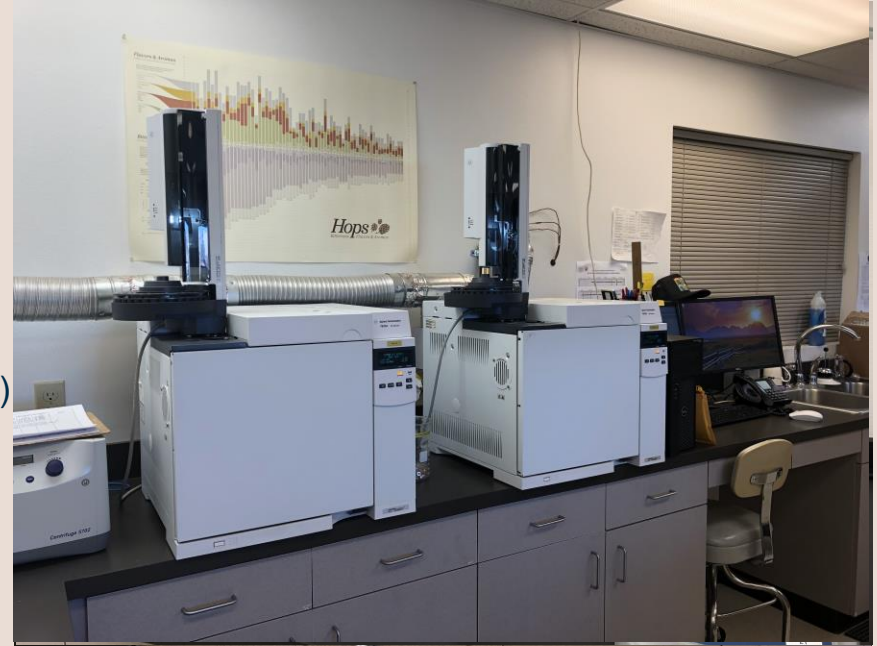
- Quality Management System integrated in our entire process from bale receipt to final package
- Standard Operating Procedures guide our daily work
- Training procedures requires every employee, full time and seasonal, to be fully trained prior to performing their duties
- Process controls and specifications
 - Standard sampling procedures
 - Monitor pelleting temperature and density
 - Strict controls on final package seal integrity and oxygen level
 - Warehouse temperature monitoring
- Process improvements identified and implemented

MISSY RAVER

**QUALITY CONTROL
BALES TO FINAL PACKAGE**

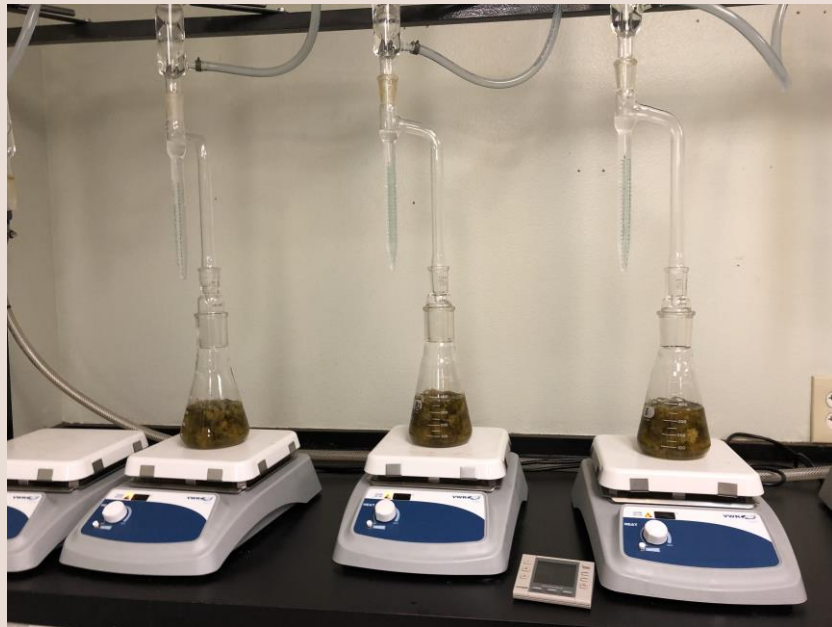
LABORATORY INFORMATION

- YCH's QC laboratory is at our Sunnyside west location
- Laboratory follows ASBC and EBC methods, standard operating procedures.
 - UV Spectro: % Alpha, % Beta, HSI (hop storage index)
 - HPLC: % Alpha, % Beta, % Cohumulone, % Colupulone
 - Mebak LCV 7.5 (pellets); LCV 7.6 (extract): % Alpha
 - Total Oil and Oil components; moisture



QUALITY AT EVERY STEP

- Starts at the farm
 - YCR Footprints program
 - Standard picking dates
 - Harvest maturity based on data
 - Dry matter analysis
 - Alpha, beta and HSI
 - Oil Analysis
 - Standard drying operations
 - Re-investment at the farm



QUALITY AT RECEIVING

- Every bale gets checked
 - Moisture and temperature specifications
 - Aroma and cone checks in the yard
- Lot samples by the truck load
 - Standard sampling of every truck load received.
 - Lab analyzes within 24hrs for UV and moisture
 - Checks consistency truck to truck
 - Composite sample
 - Combine truck samples for oil and oil components



QUALITY AT RECEIVING – DOCUMENTATION

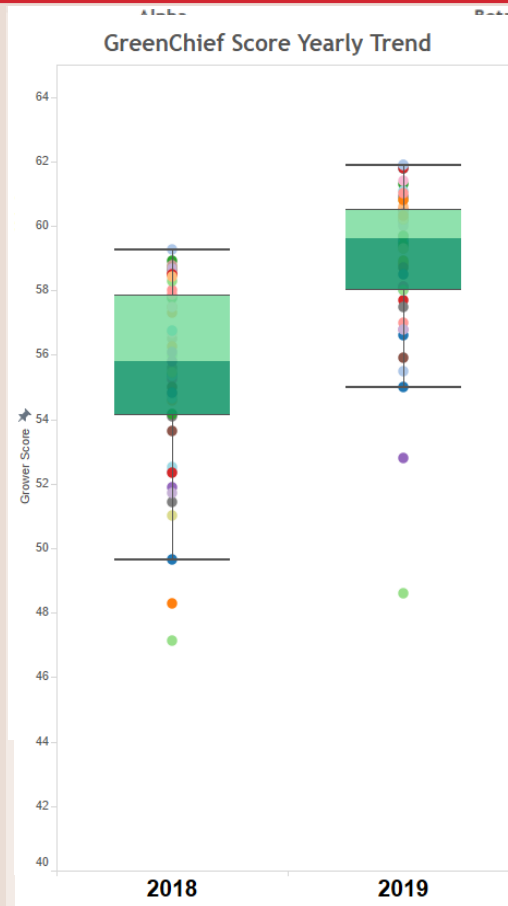
- All bale lots must be inspected by USDA prior to sale
 - Leaf, stem and seed percentage by weight
 - YCH contracts have strict requirements that all lots must meet
- Every lot must have spray records and harvest data sheet
 - YCH’s custom built Grower Portal
 - Providing resources for growers
 - Growers follow YCH’s spray guidelines to ensure products will meet MRL requirements

Variety	Chinook
Lot Number	-042
Fields	-1, -2, -4, -27
Date Harvest Start	09/23/
Date Harvest End	09/24/
Total Bales in Lot	130
Picking / Kilning Facility	Star
Picker Type	Dauenhauer
Kiln Fuel	Natural Gas
Kiln Depth	30.0 Inches
Drying Temp	135.0 °F

	001	002
017	08/30/2017	08/31/2017
al	Centennial	Simcoe® Brand
27	189.1	201.0
	5,104.6	23,319.5
	1%	0
	0	1%
	YCH	YCH

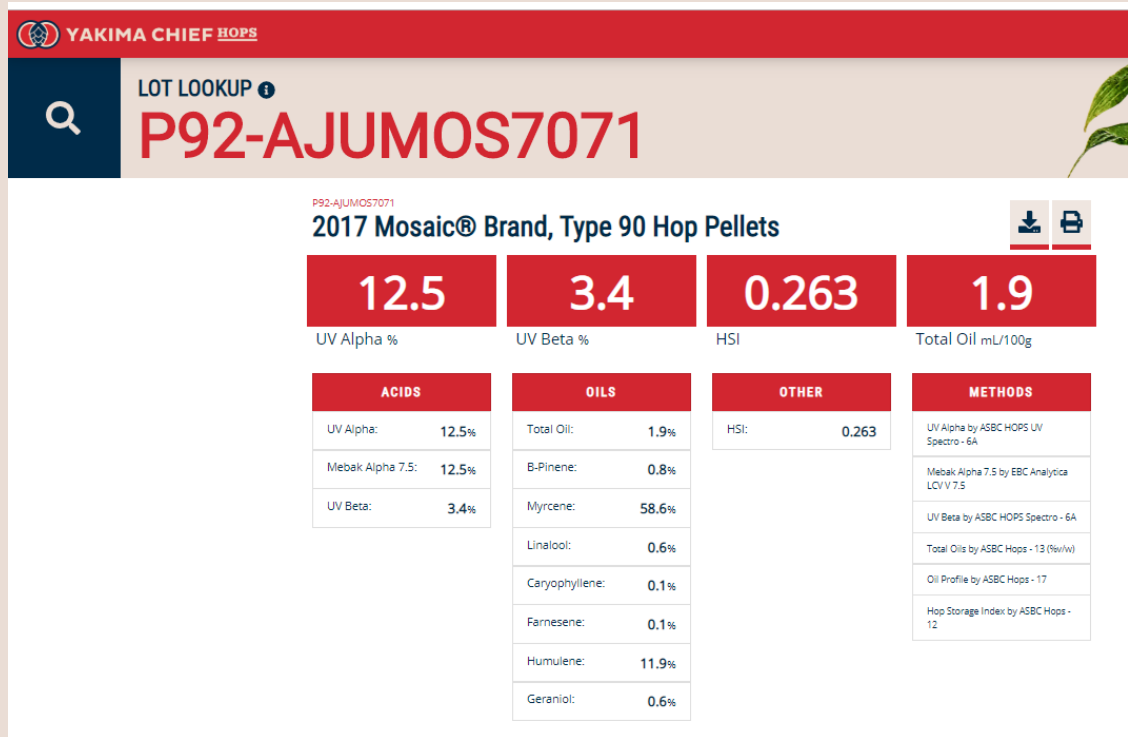
QUALITY INFORMATION

- Information flows back to growers
 - Quality information leads to quality decisions
 - Brewer feedback and sensory results during harvest
 - Lab results within 24 hrs of delivery
 - Live comparison with other growers
- Post harvest reports
 - Harvest windows
 - Harvest dates compared to analytics
 - Scoring based on sensory, analytics and food safety



QUALITY IN THE FINAL PACKAGE

- Every product gets checked
- Standard sampling plans for all products, leaf pack to advanced products
 - Production QC and lab samples
 - Lab analyzes per customer requirements
- QC checks at each step
 - Time of processing analysis for all final products
 - Analysis of final product; all results goes on the CofA



LOT LOOKUP

P92-AJUMOS7071

P92-AJUMOS7071
2017 Mosaic® Brand, Type 90 Hop Pellets

12.5	3.4	0.263	1.9
UV Alpha %	UV Beta %	HSI	Total Oil mL/100g

ACIDS	OILS	OTHER	METHODS
UV Alpha: 12.5%	Total Oil: 1.9%	HSI: 0.263	UV Alpha by ASBC HOPS UV Spectro - 6A
Mebak Alpha 7.5: 12.5%	B-Pinene: 0.8%		Mebak Alpha 7.5 by EBC Analytica LCV 7.5
UV Beta: 3.4%	Myrcene: 58.6%		UV Beta by ASBC HOPS Spectro - 6A
	Linalool: 0.6%		Total Oils by ASBC Hops - 13 (Rev/1w)
	Caryophyllene: 0.1%		Oil Profile by ASBC Hops - 17
	Farnesene: 0.1%		Hop Storage Index by ASBC Hops - 12
	Humulene: 11.9%		
	Geraniol: 0.6%		

UP NEXT FOR THE LABORATORY

Expansion underway!



• AMERICAN HOPS. •
FROM THE
PACIFIC NORTHWEST™
