

Using Distilled Hop Oils

Efficiencies & Sustainability



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My Perspective



- First tested Distilled Oil production 3 years ago
- Partnered with Green Acre Farms in Toppenish, WA last year...supply chain!
- Spoken with hundreds of Brewers and Cider Makers (globally) last 2+ years
- Original intent...very different
- **Most of all...Listened. A lot.**

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What is it?

Quick FAQs

- **Aroma addition ONLY**
- **There is NO bittering component**
- **Added cold-side only.**
 - Heat would cause volatile oils to evaporate
 - Myrcene flash point – 104F
- **Substitute or enhancement for pellets**
 - Think of it as *LIQUID DRY-HOPPING*
- **What We Thought:**
 - *Fresh hop Seasonals...Year-round.*
- **What We Found:**
 - *Bit of a Game Changer*

Costing Worksheet

Per 15 BBL Batch

	Per Batch Example #1	Per Batch Example #2
Dry Hopping - Current Input costs		
Ingredients Calculations		
Batch Size (BBLs)	15	15
Dry Hopping Rate	1.5	2
Dry hop pellets used (pounds)	23	30
Dry Hop Cost/Lb (varies by variety)	\$12.00	\$12.00
Dry Hopping Pellet Cost Total	\$276.00	\$360.00
Freight (avg. UPS cost/lb)*	\$0.75	\$0.75
Estimated Freight Cost	\$17.55	\$23.40
Dry Hop Pellets/Hard Input Costs	\$293.55	\$383.40
Soft Costs		
Labor / filtration / dry-hopping (if stored separately)	Variable	Variable
Dry-hopping throughput increase	Variable	Variable
Went to dry-hopping: 8 days most common, can range 7-14 days. Substituting with Hopsoll, reduce to 24 hours throughput		
Freezer Storage on site	Variable	Variable
Hop pellets shelf life	1.5 - 2 years	1.5 - 2 years
Carbon footprint reduction	Variable	Variable
<small>Every 1000lb of pellets reduces from stimulating hop drying and reduced shipping costs</small>		
Hopsoll™ Costs		
Average Dosing Rate ML/BBL	5	5
ML / batch	75	75
Hopsoll Cost / BBL (high range)	\$15.44	\$15.44
Hopsoll Cost/Batch	\$231.60	\$231.60
PLUS SHIPPING	6.45	6.45
Total Hopsoll Input Cost/batch	\$238.05	\$238.05
Yield Gain (reduce filtration losses)		
Reduction in Dry Hopping Pellets	66%	100%
Gain in Kegs (actual - multiple breweries)	2.1	3.15
Taproom Sales Gain: net pints/keg	120	120
Retail Taproom Gross / Pint	\$5.00	\$5.00
Net Gain/Taproom Sales	\$1,260.00	\$1,890.00
Net Difference Using Hopsoll		
Total Dry Hop Pellets / Hard Input Costs	\$293.55	\$383.40
Soft Costs	Variable	Variable
Savings - % Reduction in Dry Hop Pellets	\$189.78	\$383.40
Hopsoll Input Costs/Batch	\$238.05	\$238.05
Net Gain/Taproom Sales	\$1,260.00	\$1,890.00
Net Difference / 15 BBL Batch	\$1,211.73	\$2,035.35

- ✓ Input hard costs
- ✓ Soft costs
- ✓ Distilled Oil & shipping costs
- ✓ Yield Gain
- ✓ Net Difference



Costing Worksheet

10,000 BBL Production Beer

	Production Beer	
	Example #1	Example #2
Annual Production (BBLs)	10,000	10,000
Dry Hopping Rate	1.0	2.0
Dry hop pellets used	10,000	20,000
Dry Hop Cost/Lb (varies)	\$11.00	\$11.00
Dry Hopping Pellet Cost total	\$110,000.00	\$220,000.00
Freight pallets/Bulk	\$0.20	\$0.20
	\$3,000.00	\$4,000.00
Dry Hop Pellets/Hard Input Costs	\$168,000.00	\$224,000.00
	Variable	Variable
	Variable	Variable
	1.5 - 2 years	1.5 - 2 years
	Variable	Variable
Average Dosing Rate ML/BBL	5	5
ML / Production year	\$0.000	\$0.000
Hopozoil Cost / BBL (high range)	\$15.21	\$15.21
Hopozoil Cost/Year	\$152,100.00	\$152,100.00
PLUS SHIPPED	\$115.63	\$115.63
Total Hopozoil Input Cost/Year	\$152,215.63	\$152,215.63
Reduction in Dry Hopping Pellets	66%	100%
Gain in Yield	7%	11%
Keg gain/year	700	1,000
Avg Gross Revenue/Keg	\$110.00	\$110.00
Net Gain/Keg sales	\$77,000.00	\$115,500.00
Total Dry Hop Pellets / Hard Input Costs	\$168,000.00	\$224,000.00
Soft Costs	Variable	Variable
Savings - Reduction in Dry Hop Pellets	\$15,880.00	\$24,000.00
Hopozoil Input Costs/Batch	\$152,215.63	\$152,215.63
Net Gain/Keg Sales	\$77,000.00	\$115,500.00
Net Difference / Annual Production	\$35,664.37	\$187,284.37

- ✓ Input hard costs
- ✓ Soft costs
- ✓ Distilled Oil & shipping costs
- ✓ Yield Gain
- ✓ Net Difference



Distilled Hop Oil by Definition:

It's "Essential Oil"

Produced from FRESH PLANT Material, not dried nor processed.



Best Packaging:

- Aluminum Bottle
- Beverage-grade Nitrogen flush
- LDPE Plug
- Tamper-evident, Re-sealable Cap

Shelf Life in the Container

- Enemies of Terpenes:
 - Oxygen
 - Light
 - Heat
- Proper Packaging:
 - "Best Before" Date
 - 5 Years from production
 - Could be longer...
 - *Nobody knows yet*
 - Don't Freeze. Just Refrigerate
 - Re-seal after opening

Organic? Eco-Friendly!

Some Varieties
are Certified

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GLOBALG.A.P.
The Global Partnership for Safe and Sustainable Agriculture

Good Agricultural Practices

- Worldwide Standard (UK)
- **Objectives:** Safe, sustainable agriculture
- Connects growers and retailers
- Addresses
 - Product Safety
 - Environmental impact
 - Healty, Safety and Welfare of Workers & Animals
- Safe Food
- **Rigid auditing requirements for certification**



- One of Nation's leading regional Eco-Labels
- 95,000 acres certified in OR, WA, CA and BC
- **Includes both organic growers and biologically-based integrated pest mgm't**

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Reducing Your Carbon Footprint



- **Raw Ingredient:** Fresh (“wet” or “green”) hops
- **Not kiln-dried**
 - No natural gas, propane or diesel used
- **Requires less fossil fuel to ship**
 - Biomass eliminated
 - Only the essential oil
 - 750-900 lbs of ‘fresh hop equivalent’ ships
 - \$12.40 anywhere in USA
- **Reduced storage energy costs**
 - Less space
 - Refrigerate, don’t freeze

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Thank You

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