

Annual Operational Expense comparison BREWHA vs Traditional brewing system

Summary

	BREWHA	Traditional
Batches / year with six 5BBL fermenters on a 3 week rotation	104	104
A Lease cost (brewing equipment space only)	\$ 2,415.00	\$ 4,815.00
B Labor cost	\$ 20,800.00	\$ 33,800.00
C Brewing/cleaning water cost	\$ 222.92	\$ 1,025.25
D Cleaning chemical cost	\$ 585.00	\$ 9,984.00
Total annual brewing expense	\$ 24,022.92	\$ 49,624.25
Total annual operational savings with BREWHA	\$ 25,601.33	
Installation cost estimate*	70%	100%
Annual water consumption (brewing and equipment cleaning)	36%	100%

*BREWHA setup cost is less due to less vessels and the portable nature of the BREWHA equipment

Detailed

A Lease Cost	BREWHA	Traditional
#sf needed for brewing equipment*	240	480
Lease/sf	\$ 15.00	\$ 15.00
NNN/sf	\$ 10.00	\$ 10.00
Annual lease	\$ 2,415.00	\$ 4,815.00
B Labor Cost	BREWHA	Traditional
Brewer hourly wage	\$ 25.00	\$ 25.00
Brewing hr/batch	6	7
Cleaning hr/batch*	2	6
Labor cost/batch	\$ 200.00	\$ 325.00
5BBL batches/year	104	104
Brewing labor cost/year	\$ 20,800.00	\$ 33,800.00
Brewing labor cost/pint	\$ 0.17	\$ 0.28

*Without a brew platform, BREWHA takes up about 50% less space than a traditional system

*Up to 60% of a traditional equipment brewer's time is spent cleaning

C Brewing/cleaning water cost	BREWHA	Traditional
Water cost USD/L*	\$0.0015	\$0.0015
Sewer disposal cost USD/L**	\$0.0029	\$0.0029
Batch size	585	585
Water pre boil volume (5BBL) L	625	620
Water absorbed in grain	136	136
Water cleaning Mash Colander/Tun	40	300
Water cleaning Boil Kettle	N/A	600
Water rinse Fermenter and lines**	100	350
Water chemical cleaning Fermenter and lines***	600	800
Batches per chemical Fermenter cleaning cycle	6	1
L of water per L of beer (Gallons same number)	1.7	4.8

*<https://www.circleofblue.org/waterpricing/>

**Based on Victoria, BC rates

**Complete lid removal on BREWHA fermenter allows more direct/efficient spraying

***BREWHA does not use fermenter lines

D Cleaning Chemical Cost	BREWHA	Traditional
PBW Cost /kg	\$ 10.00	\$ 10.00
PBW kg/L water	0.015	0.015
Acid 5 Cost/L	\$ 5.00	\$ 5.00
Acid 5 L/L water	0.015	0.015
Star San Cost/L	\$ 15.00	\$ 15.00
Star San L/L water	0.0015	0.0015
Boil Kettle alkaline cleaner L/batch	N/A	600
Batches per BK alkaline cycle*	N/A	6
Boil Kettle acid cleaner L/batch	N/A	600
Batches per BK acid cycle*	N/A	6
Fermenter and lines alkaline cycle L/batch	150	133
Batches per Fermenter alkaline cycle**	6	1
Fermenter and lines acid cycle L/batch	150	133
Batches per Fermenter acid cycle	6	1
Fermenter and lines sani cycle L/batch	N/A	133
Batches per Fermenter sani cycle	N/A	1
Total Cost/batch PBW	\$ 3.75	\$ 35.00
Total Cost/batch Acid 5	\$ 1.88	\$ 61.00
Total Cost/batch Star San	N/A	\$ 3.00

*methods vary but chemical clean of kettle once every six brews is not unusual

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**While the heat of the boil perfectly sanitizes BREWHA's fermenters (which are also the boil kettle, mash tun and brite) a traditional

cleaning cycle to remove beer stone can be completed once ever six batches