Xbeeriments – from [Brülosophy](http://r.search.yahoo.com/_ylt=A0LEVi3j5DtXntIAVRMnnIlQ;_ylu=X3oDMTE0cmJsMmxtBGNvbG8DYmYxBHBvcwMxBHZ0aWQDRkZVSTNDMl8xBHNlYwNzcg--/RV=2/RE=1463571812/RO=10/RU=http%3a%2f%2fbrulosophy.com%2f/RK=0/RS=TVfTtATvUKw6wb5MeyT1qmZ6qsU-)

Dry Hopping

# Methods to Compare Two Processes

* Two Batches – identical as possible
* One using one process; the other using the other process
* Compare finished beers using panel of tasters in double-blind triangle test
* Difference must be statistically valid

# Whole vs. Pellets

## Test Parameters

* Bell’s Two Hearted Ale using Centennial from Hops Direct
* Pellets for all hop additions except dry hop
* Dry hop – 60 g (2.2 oz.) in keg using hop blocker, kegs purged w/ CO2
* 2.5 gallons per keg via closed system

## Results

* Whole hop beer was clearer initially but both cleared within a few days
* 14 tasters, 8 correctly identified the different sample
  + Statistically significant, but barely
* Confidence correlated fairly well with accuracy
* Whole hops – fresher, stronger, sweeter and more pleasing
* Pellet hops – smoother and milder
* Sampling split into 3 groups, a few days after kegging, a week later and then a few days after that.
  + All of the early tasters (4) correctly identified the whole hopped beer
  + Later tasters were split and reported that the difference was subtle

## Conclusion

* Whole hops are better but only for a few days

# Single vs. Double Dry Hopping

* IPA recipe, split 3 gallon fermentations
* One received single addition, other received 2 half-sized additions
* 15 tasters, 4 correctly identified the different beer
* Not statistically significant

# Long vs. Short Dry Hopping

* IPA recipe, split 5 gallon fermentations
* One dry hopped for 24 hours, the other for 10 days
* 19 tasters, 12 correctly identified different beer
  + Statistically significant
* Aroma – 5 short, 6 no preference, 1 long
* Taste – 7 short, 1 no preference, 4 long
* Overall – 5 short, 3 no preference, 4 long