Big Batch Soap Making

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Fragrances

and

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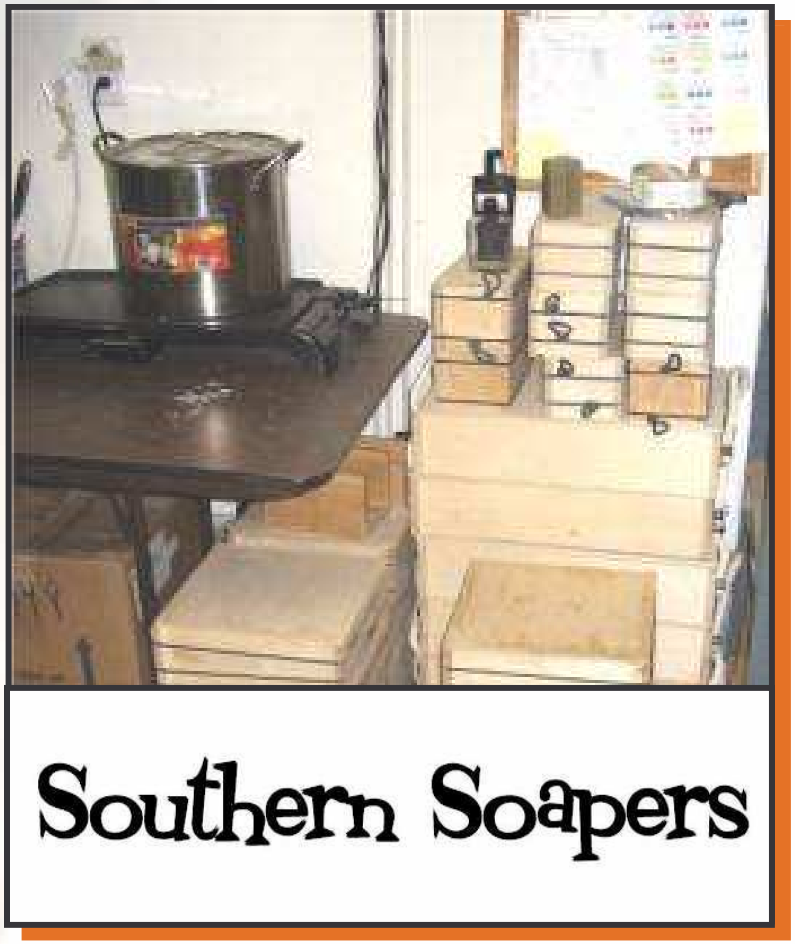

Outline

- The advantages of "big batch" cold-process soap
- What supplies do I need?
- How do I do it?
- What are some resources I can use to get started?

Big Batch Soap?

- A large quantity of soap in the same time, same work space, for less money per bar!
- More cost effective
  - Your time: same steps, more soap!
  - Lower ingredient cost per ounce in larger quantities
  - Lower shipping costs for supplies in bulk
- More consistent soap quality
  - Larger batches reduce the impact of small variations in ingredient weight
- Minimal set-up costs

Getting Started

- To start "big batch" soaping, you will need the following:
  - Your ingredients and soap base recipe
  - A calculator and note page for scaling ingredients to your batch size
  - Empty 5-gallon bucket(s) for mixing and storing your soap base "master batch"(es)
  - A stirring paddle
  - Medium or Large Soap molds suitable for your batch size
  - A soap cutter
  - A curing rack

Basic Ingredients

Sample 3 oil, 1 Butter Formula

- 50% Olive Oil, pomace
- 20% Coconut, 76 degree
- 25% Palm
- 5% Cocoa Butter

100%

Formulate Your Recipe

Sample 3-oil, one-butter Base Formula portioned for a 5 lb. (80 oz) batch.

Sample Formula Ratios:

50% Olive Oil, pomace
20% Coconut, 76 degree
25% Palm
5% Cocoa Butter
100%

Sample Formula in oz:

40 oz Olive Oil, pomace
16 oz Coconut, 76 degree
20 oz Palm
4 oz Cocoa Butter
80 oz = one 5 lb batch

Big Batch it!

- Now that we have a 5 lb. (80 oz) batch ratio for our "soap base formula" you are ready to make a big or "master" batch
- A 50 pound (800 oz) oil bucket will hold ten 5 lb (80 oz) batches
- You can make 10, 20, even 30 batches of soap base with the same number of steps as you would for one batch!
  - **hauling your raw ingredients**
  - **measuring, placing into containers**
  - **clean up**

More Consistent Soap

Single Batch Formula

40 oz Olive Oil, pomace
16 oz Coconut, 76 degree
20 oz Palm
4 oz Cocoa Butter
80 oz Batch

Actual Single Batch Weight (example)

Olive 40.1 oz
Coconut 15.9 oz
Palm, 20.2 oz
Coco Butter 3.99 oz
80.19 oz Batch

The Big Batch Effect

Single Batch

Olive 40.1 oz
Coconut 15.9 oz
Palm, 20.2 oz
Coco Butter 3.99 oz
Total: 80.19 oz

Double Batch (similar weight variance)

Olive 80.1
Coconut 31.9 oz
Palm, 40.2 oz
Coco Butter 7.99 oz
Total: 160.19 oz

Double Batch (Split)

Olive 40.05 oz
Coconut 15.95 oz
Palm, 20.01 oz
Coco Butter 4.00 oz
Total: 80.1 oz
For both batches

Batch Sizing Ratios (10 batch example)

Single Batch

Olive 40 oz
Coconut 16 oz
Palm, 20 oz
Coco Butter 4 oz
Total: 80 oz

Batch Increased Tenfold

Olive 400 oz
Coconut 160 oz
Palm, 200 oz
Coco Butter 40 oz
Total: 800 oz

Oil	Weight (Oz)	Vol (Oz)	% of Oils	Pounds, Ounces
Olive	400.0	435.7	50%	25 lb, 0 oz
Coconut	160.0	173.2	20%	10 lb, 0 oz
Palm	200.0	218.6	25%	12 lb, 8 oz
Cocoa Butter	40.0	41.3	5%	2 lb, 8 oz
				lb, oz
				lb, oz
				lb, oz
				lb, oz
				lb, oz
				lb, oz
				lb, oz
				lb, oz
				lb, oz
Total:	800.0	868.8	100%	50 lb, 0 oz

Making your "Master Batch" Formula

- Clean out 50 pound buckets from previous bulk palm kernel oil, coconut oil, etc.
- Line up the number you wish to fill with your "master" batches (10 batches per bucket).
- Using the formula we have been working from:
  - – Weigh out 40 oz of cocoa butter for each bucket
  - – Weigh out 160 oz of Coconut oil, 76 degree for each bucket
  - – Weigh out 200 oz of Palm oil for each bucket

Making your "Master Batch" Formula

- To keep your olive oil fresh, hold off adding the 400 oz of Pomace Olive Oil to each bucket until you are actually ready to use the contents of the bucket.

- For storage until ready to use, hammer the gasket sealed lids on your buckets of Master Batch Formula and Stack up in a corner of your work space.

Making your Lye Solution

- You can save time by making your lye solution ahead of time.
- A standard batch of lye solution can be used for any soap formula. Prepare the lye solution at the concentration you normally soap at.

Safety First!

- **Safety** should be an key concern on storage and mixing of lye solution. Your choice can be impacted by
  - **Children or pets**
  - **Safety and stability of your storage space**
  - **Time you anticipate before using your solutions**

The "Science" of Lye Solutions

- Facts to remember
  - The amount of water your formula uses should be based on the weight of the sodium hydroxide (lye) required by your oils SAP values. **
  - Dry Lye weight + water weight = same weight of two combined
  - You can always add more water to weaken a concentrated lye solution.

**Water is only a solvent for your sodium hydroxide. It remains unchanged and evaporates away.

Formulate Your Lye Solution

Sample 40% Lye Solution

Solution Ratios:

1 part Lye to 1.5 parts Water

Sample Solution(s) in oz:

- 6 oz Lye to 9 oz Water
- 10 oz Lye to 15 oz Water
- 15 oz Lye to 22.5 oz Water

4 oz Lye to 6 oz Water

8 oz Lye to 12 oz Water

Ratios for Lye Solutions

These are the multiplication factors for water to create various concentrations of Lye solution.

Lye Weight x Water Factor = % Solution

- **Lye x 1.5 = 40%**
- **Lye x 1.6 = 38%**
- **Lye x 1.7 = 37%**
- **Lye x 1.8 = 35.7%**
- **Lye x 1.9 = 34.5%**
- **Lye x 2.0 = 33%**
- **Lye x 2.1 = 32%**
- **Lye x 2.2 = 31%**

Making Adjustments to your Lye Solution

How to calculate the additional water needed to add to lower the lye solution concentration :

Lye x 1.5 = 40% solution
6 oz lye + 9 oz water = 15 oz

6 oz lye x 2.2 = 31% solution
6 oz lye + 13.2 oz water = 19.2 oz

13.2 oz water – 9 oz water = 4.2 oz additional water needed to weaken your 40% solution to a 31% solution.

Another Lye Solution Tip

- To reduce time waiting for your lye solution to cool, you can use ice as 2/3 of your water weight
  - Ice cools the solution faster for use
  - Water weighs the same frozen as liquid
    - 2 oz Water by weight = 2 oz ice by weight
  - Use of ice also reduces the fumes from the solution

Equipment for Large Batch Soaping

Equipment Essentials

Stick Blenders

Safety Equipment

Soap Pots

Colorants, Herbs, Clays, additives

Molds

Fragrances, Essential oils

Log Splitters and Soap Slicers

Drying Racks and Curing Shelves

Sources for Supplies

- The bulk of equipment costs are concentrated on Molds, Log Splitters, Soap Slicers, Heat Belts, Curing Racks.
- What I use:
  - **Molds –** *Upland Soap Factory*
  - **Log Splitter –** *For Crafts Sake*
  - **Tank Soap Slicer –** *For Crafts Sake*
  - **Guest Soap Slicer –** *For Crafts Sake*
  - **Scales –** *Soap Equipment*
  - **Curing Racks –** *Soap Equipment*
  - **Heat Belt –** *Soap Equipment*
  - **Stainless Steel Paddle –** *Soap Equipment*
  - **50 lb pails –** *Soapers Choice or US Plastics*

Questions?