Forecast: Too Hot to Make Soap

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"I like to combine my oils & lye at 80 degrees, but the temperature in my work area is 105 degrees! It's too hot for soap." —Anonymous soap maker. The heat of summer can be detrimental to the saponification of cold process soap; the treasured mixture may curdle, discolor, or separate. The most obvious solution is to change the method to either hot process or melt and pour. However, those of us who are devoted to the cold process method of making soap have other options when summer heat presents its challenge.

First, the cold process soap maker may be able to alter the environment in which the soap is made by either beating the heat or lowering the temperature of the work area. To beat the heat, one may get up very early in the morning (about 3:00 am) to make soap and allow the soap 8 hours of incubation before the day becomes hot. To lower the temperature of the work area, one may run an air conditioner, fan, or swamp cooler; block direct sunlight from entering the work area; replace heat-producing incandescent light bulbs with cool fluorescent bulbs; and etcetera.

Second, the soap maker can alter the cold process of soap making. This option is much more practical for those who cannot alter their work schedule or the temperature of their work environment. If the work area is 105 degrees during the summer, the lye water will obviously never cool to any temperature below 105. Therefore, alter the process: Do not insist on 80 degrees for combining lye water with oils; combine the lye water and oils when both are 105. Yes, it can be done when a few principles are considered.

When combining ingredients, consider these facts:

- Smaller batches are more susceptible to problems with heat and to problems with sudden changes in air temperature. Larger batches have less surface area per volume and are less affected by changes in air temperature.

- No matter the temperature, lye water and oils should only be combined when BOTH have reached the same temperature. (If the lye water stands and cools to the 105-degree work area, do NOT combine it with 90-degree oils stored and freshly mixed together in the cool cellar. Either refrigerate or ice bath the lye water to cool it to match the temperature of the oils, or heat the oils to match the temperature of the lye water, or allow all ingredients to stand in the 105-degree work area until all ingredients reach 105 degrees.) If the ingredients are not all the same temperature, they may not thoroughly incorporate with each other.

- High temperatures on hot days leave the soap mixture more vulnerable to curdling. To avoid curdling from heat, use a mixer (or hand-held blending wand) for fast & consistent stirring until trace. Also, to avoid curdling, NEVER pour the soap into a mold until AFTER trace has occurred.

- When lye water is combined with oils at higher temperatures, a greater percentage of the soap mixture will have saponified when trace occurs. 140-degree soap is about 55% saponified at trace. Likewise, when lye water is combined with oils at lower temperatures, a smaller percentage of the soap mixture will have saponified when trace occurs. 80-degree soap is only about 35% saponified at trace.

- Due to more of the soap mixture being saponified by the time trace is achieved, combining lye water and oils at higher temperatures may make the final soap seem to have a slightly grainier texture.

- Higher temperatures make the mixture more prone to seizing when scents are added. Therefore, stick to essential oils that have less of a propensity to seize the mixture than synthetic fragrances and add the essential oils to the soap mixture as the last step before pouring the soap into the mold.

When incubating soap in the mold, consider these facts:

- Insulation greatly depends upon the air temperature of the area where the soap will remain to incubate for the next 24 hours (the first 8 hours are most crucial).

- Hot days may make soap curdle or discolor in the mold, near the center of the block of soap. To avoid curdling due to heat, do not stack or insulate blocks of molds together. Insulate molds separately. If this is not possible, do not insulate the soap as thoroughly; use a thinner cloth (or nothing) instead of the usual blanket. In extreme cases of hot air temperature, David Critchfield, of Mission Peak Soaps in Fremont, CA, suggests, “I get hot days here. My problem/observation with soap making has been that the soap can sometimes overheat in the block mold—get very hot in the middle—and if carried to extremes, will discolor the finished soap in the center. I have a fan handy that I sometimes use to gently circulate air around the mold if it looks like it's too hot. Also, I sometimes space the mold up off the table (or floor) to let air circulate around the bottom of the mold.”

- Soap may separate in the mold if it is allowed to cool too quickly. When the air temperature is hot, the soap cannot cool too quickly and does not need much insulation (if any) to protect it from cold drafts.

Third, the soap maker may extend the shelf life of the finished soap product so that the summer heat will have less affect. The shelf life of a bar of soap may be extended by more efficient storage practices and through altering the ingredient recipe to include very stable oils and antioxidants. Of course, the easiest method to ensure a bar of soap does not spoil from prolonged exposure to summer heat is to sell it or use it as soon as it has cured sufficiently.

When storing the final soap product, consider these facts:

- Bars of finished soap become rancid more rapidly when they are exposed to heat and light. To slow the oxidation process, store soap in a cool dark location. If possible, store soap bars on a wire rack or spaced apart to allow air to circulate around and between the bars. Cardboard boxes and paper bags allow for more air circulation than plastic tubs.

- Certain oils (usually unsaturated fats) are more susceptible to rancidity than other (more saturated) oils. When bars of finished soap must be stored through the hot summer, the soap maker may choose to alter the ingredient recipe and include oils that are less prone to rancidity. The Natural Oils International website (www.naturaloils.com), posted by Barbara Hardy, presents the shelf lives of various oils. Most stable (1 year): Avocado, castor, coconut, jojoba, olive, palm, and wheat germ. Stable (6 to 12 months): Almond, canola, corn, cottonseed, peanut, and sesame. Less stable (3 to 6 months): Borage, evening primrose, flaxseed, grapeseed, kukui, rose hip, soybean, and sunflower. Unstable (0 to 3 months): Safflower (linoleic variety) and walnut.

- To slow the inevitable oxidation process of the final bar of soap, antioxidants may be added to the soap ingredients. Common antioxidants added to soap are vitamin A, beta carotene, carrot oleoresin, vitamin C, ascorbic acid powder, grapefruit seed extract, vitamin E, natural delta and gamma tocopherols.

So, cold process soap making in the extreme heat of summer is possible but requires forethought and advanced planning. Remember to consider the air temperature of the soap making environment, the temperature of the mixture, the lack of need for insulation during incubation, and tips for more efficient soap storage through the hot summer. It is never too hot to make soap!

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