**Ask Dr. Cheese: Those Bloomin’ Bloomies  (http://www.cheesesociety.org/those-bloomin-bloomies/)**

Bloomy-rind cheeses are finicky creatures, says Gianaclis Caldwell, Pholia Farm co-owner and cheesemaker and author of the forthcoming book, *Mastering Artisan Cheesemaking* (Chelsea Green, Fall 2012). In this interview with San Francisco Chronicle cheese columnist Janet Fletcher, Caldwell outlines some of the tricks to getting a Penicillium candidum rind to thrive.

***Q: When you’re evaluating a cheese with a P. candidum rind, what do you hope to see?***

*A:* An evenly thick or thin texture, and not so thick that it’s unpleasant in your mouth. A rind that is part of the paste and doesn’t pull away. Obviously, that it’s not bitter. And in the U.S., we’re accustomed to these rinds being pure white, but to have some other molds on there can be appealing. That’s a matter of taste and the cheesemaker’s intention.

***Q: What are the main factors in getting a P. candidum rind to grow successfully?***

*A:* The moisture content of the cheese. If it’s too wet, you get mucor growing, those blackish molds. Also, you need to have the right type of yeast growing to raise the pH of the cheese surface — either geotrichum or some other added yeast. Candidum won’t grow at the starting pH of the cheese, which is usually about 4.7. It needs to be higher, and that’s typically the job of environmental yeast or added yeast. Lastly, these cheeses need the right amount of salt initially to limit the immediate growth of other molds.

***Q: As for inoculating the milk with P. candidum versus spraying it on, do you favor one method over another?***

*A:* For small cheesemakers, adding it to the milk is easier but more costly because you use more. When you get to a certain size, misting is more affordable. But unless you’re really good at misting, the rind is likely to be more even if you add the candidum to the milk. It’s good to have some P. candidum available for misting in case you’re not getting even growth. But there’s no difference in how the cheese develops.

***Q: How soon should you expect to see a candidum rind develop? Is it important for it to grow quickly?***

*A:* You should see it in four to seven days. It’s important for it to come in quickly so it can outgrow the undesirable environmental molds. It’s a race.

***Q: What are the key considerations for maintaining the rind in the aging room?***

*A:* Air exchange, definitely. You’re raising the pH of the cheese and that’s going to create some ammonia. Once you get sufficient mold growth, you need to wrap the cheese and reduce the temperature so the rind doesn’t continue to grow too quickly. When turning these cheeses, you should have sanitized hands or gloves or you can get mold growth from spores on your fingers. And the aging room needs to be free of other cheeses with molds you don’t want.

***Q: What do retailers need to know about maintaining these cheeses?***

*A:* They need to make sure the producers or affineurs are shipping them properly. Bloomy-rind cheeses should be packed with lots of crinkle paper or shredded wood fiber so they can breathe and be well cushioned, and they must stay cold. If the temperature changes drastically, there will be moisture on the packaging and that’s going to damage them. Having a separate refrigerated section for these cheeses is helpful so they don’t absorb other odors and flavors. Don’t stack them too closely so the packaging isn’t pressing on them. Monitor for ripeness and have the wherewithal to sell them before they’re overripe.

**Soft Ripened Cheese Characteristics**

* Soft – high moisture curds/paste
* Primary ripening (acidification) with bacterial culture
* Shaped in molds/hoops but not pressed
* Secondary ripening with fungal mold – from the outside in
* “Bloomy” or wrinkly exterior
* Perishable – brief time window of perfection
* All about flavor – not a milk preservation method

**Cheesemaking Process – Soft Ripened Cheeses**

* Cultures
	+ Generally mesophillic bacterial culture
	+ Two or three strains produce diacetyl giving buttery flavor:
		- Leuconostoc mesenteroides ssp. Cremoris
		- Lactococcus lactis subsp. biovar diacetylactis
		- Lactococcus lactis ssp Lactis ?
	+ Two types of white mold – in starter or spray on
		- Penicillium candidum
		- Geotrichum candidum
	+ One blue mold
		- Penicillium roqueforti
* Ripening temperature: Low (75°) to moderate (90°)
* Milk ripening time: Varies – 1 – 24 hours
* Rennet: small quantity – few drops – 1.2t/gallon
* Curd cutting: Large pieces - Large cubes – slices – no cutting
* Stirring: none
* Cooking/washing: none
* Shaping: Drain in mold – no pressing
* Salting: Surface salting
* Aging: brief – 10 days – 6 weeks
* Shelf life: Short, perishable

**Cheese Aging Profile**

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| --- | --- | --- | --- | --- | --- |
| **Category** | **Initial process** | **First week(s)** | **Weeks-months** | **Ageing outcome** | **Ageing life** |
| Fresh cheeses | Milk is coagulated and drained | Spoilage may start any time |  |  | Hours to days or weeks |
| Soft ripened cheeses | Milk is ripened and coagulated.Mold added. | Mold rind appears.Bacterial culture develops flavors. | Paste ripens from rind to center. Paste liquefies. | Ammonia, sulfur, additional undesirable molds may develop. Spoilage. | Weeks |
| Surface ripened cheese | Milk is ripened and coagulated. Mold added. | Mold rind appears.Bacterial culture develops flavors. | Paste ripens just under rind.Paste slowly dries. | Gratable cheese  | Weeks to months |
| Firm/Hard cheese | Milk is ripened and coagulated.Curds are cooked and pressed. | Rind develops (or cheese may be waxed).Bacterial culture develops flavors. | Paste ripens from center toward rind (anaerobic) | Paste dries gradually over time.Enzymes from bacterial culture continue to develop flavors. | Months to years |