

A SIMPLE SOFT CHEESE:

*the science and magic of
preserving fresh milk in period*



“MAKING CHEESE”
FROM THE TACUINUM SANITAS,
LATE 14TH CENTURY

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Documentation overview:

This is a recreation of a soft cheese that is documented to from the 1st to 17th century. Nearly every region of Europe and Asia valued milk and preserved it as a method of extending its use. It's a quick, fresh cheese made by heating milk; curdling it with an acid like vinegar or lemon; and, letting it hang to drain. The result is a spreadable, soft cheese that was used on its own as a simple protein or could be mixed with other ingredients to make a dish. It was eaten by both upper and lower classes.

Goal

My goal for this year's A&S entry is to learn more about making a basic soft cheese. I have been making soft cheeses similar to the recipe used for this project for several years. I have even featured it on tables for a couple of local feasts and at several of my friend's vigils. I was first introduced to a homemade soft cheese at a feast in the very northern part of Pentamere at an event known as "Viking's Come Home." I have since learned that the cheese they presented is known as "skyr" — which was a dairy product similar to yogurt.¹ While the cheese that I will present here is slightly different than the original inspiration, I'd still like to make mention to honor the memory! (Please see *Appendix A, pg. 15*, for more information about Viking "skyr.")



PHOTO OF MY CHEESE AT
MY FRIEND'S RECENT VIGIL
IN MARCH 2016.
(Photo courtesy of GermanRenaissance.net,
Genoveva von Lübeck)

This project gives me a chance to research the history of cheese making through the preservation of milk. It's my hope that it will help me have more educated conversations on the nature of the cheese, why and how these cheeses were made in period, and to develop my own documented recipe for making some cheeses. Lastly but most importantly, it will allow me to present my findings — of all of these items — so you may enjoy them!

During my research, I ran across a quote from a gentleman named Clifton Fadiman, who was a noted American intellectual, author and radio personality. He was quoted as describing cheese as "*milk's leap to immortality.*"² And what a wonderful thing to preserve it is, indeed!



ME (LEFT), WITH MY HUSBAND TAIRDELBACH, AND OUR FRIENDS,
THE BARON & BARONESS OF DONNERSHAFEN, CEDACH AND MAEBH,
AT A VIKINGS COME HOME FEAST TABLE. (My personal photo)

1. (No Author). "Viking Food: Scandinavian Cuisine." *The Viking Rune*. Retrieved 3/2016, from <http://www.vikingrune.com/2009/09/viking-food/>
2. Hurt, J., and Ehlers, S. (2008). *The Complete Idiot's Guide to Cheeses of the World*. New York: Penguin Group (USA) LLC.

So, How About we Start with Some Science!?

Cheese making is probably the best way to preserve milk for an extended period of time. Depending on the variety of cheese, it can be a long and involved process that makes use of bacteria, enzymes and naturally formed acids to solidify milk proteins and fat to preserve them. Once turned into cheese, milk can be stored for months or even years.³ There are basically three steps to cheese making: curd formation, curd treatment and curd ripening. These depend on what variety of cheese is being made.

You begin to make cheese by curdling milk. Curdling occurs when the proteins in the milk clump together and separate themselves from the watery-like portion.⁴ The clumpy protein portion

becomes the “*curd*,” which will then be strained and separated from the watery portion, which is called the “*whey*.” Always being most frugal, both the ancient and the medieval cook would keep

both of these items. The curd was saved for cheese or other recipes. And, even though whey is a by-product of the cheese-making process, it was reserved for its great nutritional value. Whey was made into drinks, used as a preservative, feed to animals, and was also made into cheese — but, that’s a whole ‘nother A&S project!

So what is it that can make milk curdle? There is a commonly-told story about the discovery of this process from the area of the Fertile Crescent (now known as southern Turkey and around the Mediterranean coast). A traveler who had stored some fresh milk for his journey in an animal skin pouch had discovered along his trip that the milk had soured. When he went to drink, he realized it had separated into curds and whey. It’s said that he found the whey to be refreshing and the curds to be delicious!⁵ While this is a nice story, it’s also a more practical theory that curdles of milk were discovered in the bellies of butchered baby mammals.⁶

Curdled milk could have quite possibly been one of the first instances of man’s venture in biotechnology. The stomach of mammals — like sheep, cows, and goats — contain enzymes, known as “*rennet*,” which modify the proteins in milk and turn them into the gel-like curds described above. They have a reaction with the proteins that are in milk (called “*caseinogen*”) turning it into “*casein*”, which does not dissolve in water.⁷ This is how the separation occurs.

Curdling milk with the use of heat and different acids is another traditional — both ancient and modern — method to make cheese. Simply, soured milk contains acids that will set the milk proteins and create the solid portion. This was presumably discovered in warmer climates where milk would spoil and turn to curd all on its own. People quickly learned the value of preserving milk by adding ingredients in an effort to control the process. Romans used acids such as vinegar, wines, or citrus (like that of lemon or lime) in their cheese making processes. There are also several plants known to curdle milk, such as nettle, sorrel, thistle and even unripe fig sap.⁸ Some ancient cultures, like the



SEPARATION OF ‘CURD’ AND ‘WHEY’
(Photo courtesy of Thinkstock)

3. Marshall, B. (2000, Apr. 1). “How Food Preservation Works.” *How Stuff Works*. Retrieved 3/2016, from <http://science.howstuffworks.com/innovation/edible-innovations/food-preservation7.htm>

4. Connolly, A. (2010, Jan. 6). “Science And Magic of Cheesemaking.” *The Guardian*. Retrieved 3/2016, from <https://www.theguardian.com/science/blog/2010/jan/05/science-cheesemaking-cheese>

5. Kindstedt, P. (2012). *Cheese and Culture: A History of Cheese and its Place in Western Civilization*. White River Junction: Chelsea Green Publishing.

6. Connolly, A. (2010, Jan. 6). “Science And Magic of Cheesemaking.” *The Guardian*. Retrieved 3/2016, from <https://www.theguardian.com/science/blog/2010/jan/05/science-cheesemaking-cheese>

7. Marshall, B. (2000, Apr. 1). “How Food Preservation Works.” *How Stuff Works*. Retrieved 3/2016, from <http://science.howstuffworks.com/innovation/edible-innovations/food-preservation7.htm>

8. Wilde, M. (2013, Apr. 20). “Wild Vegetable Rennet.” *Wilde in the Woods*. Retrived 3/2016, from <http://monicawilde.com/wild-vegetable-rennet/>

Saxons, were said to use wooden utensils which were not sterilized and contained the bacteria from previous cheese making to turn milk into curds.⁹ Cheeses that were made using these methods tend to be creamy, bland in flavor, and very soft. They often have other flavors (like herbs) added to them.

Once milk has been curdled, the process of cheese making depends upon the variety being made. At this point, simple soft curdled cheeses would probably be salted, simply flavored, and eaten fresh or made into another dish. These are known as “unripened” cheeses. Firmer cheeses are made by pressing the curds together. These cheeses would be described as “ripened” because they are aged. In this process, the curd is put together more so that they can be sliced — which is done through pressing, salting, rotating, and even smoking the cheese. They can be stored to age for anywhere from a few months to several years depending upon the variety.¹⁰



A ROMAN CHEESE PRESS
(From the collection of the Hunterian Museum
and was selected by Louisa Hammersley,
University of Glasgow)

The Importance of Dairy and Cheese

Once humans began to settle, they maintained farms as a means of feeding themselves. A vast change in their diets — from that of mainly seafood and foraged items — to that of livestock meant fresh meat and dairy products.¹¹

It's been documented that dairy producing animals were kept as far back as 10,000 years ago in parts of China, 9,000 years ago in parts of what is now Turkey; 8,000 years ago in eastern Europe; 7,000 years ago ancient African cultures; and, 6,000 years ago in the British Isles. Many of these discoveries show dairy fats preserved in pottery

shards leading scientists to believe that people were processing milk for food production.¹²

Ancient people primarily got milk from sheep and goats who adjusted well to differing climates and were easy to feed. It was later in the medieval era when we find more indications of cow's milk being used.¹³

Dairy was the main source of animal protein in most of the common medieval class diets.⁴ You don't have to kill the animal to use the milk! Milk was a valuable product, and farmers would not want it to spoil. Plain fresh milk, for the most part, was rarely consumed fresh.¹⁴ Due to the lack of refrigeration, there was a lot of cheese production to make use of milk at later time. After preservation products, like butter



COWS GRAZING ON A FIELD, DUNBRODY
ABBEY, WATERFORD, IRELAND
(Photo courtesy of Thinkstock)

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9. Denning, R. (2010, Feb. 13). “Dairy Products in Anglo Saxon Times (Part of the Anglo Saxon Survival Guide)” *EZine Articles*. Retrieved 3/2016, at <http://ezinearticles.com/?Dairy-Products-in-Anglo-Saxon-Times-%28Part-of-the-Anglo-Saxon-Survival-Guide%29&id=3754387>
10. Marshall, B. (2000, Apr. 1). “How Food Preservation Works.” *How Stuff Works*. Retrieved 3/2016, from <http://science.howstuffworks.com/innovation/edible-innovations/food-preservation7.htm>
11. Griggs, M. (2014, Feb. 17). “6,000 Years Ago, the Trendiest Food in Ancient Britain was Dairy.” *Smithsonian*. Retrieved 3/2016, from <http://www.smithsonianmag.com/smart-news/ancient-british-food-craze-was-dairy-180949776/?no-ist2>.
12. Sohn, E. (2012, June 20). “Ancient Africans Made Cheese, Settled down.” *Discovery News*. Retrieved 3/2016, from <http://news.discovery.com/history/archaeology/milk-ancient-africans-120620.htm>
13. Toussaint-Samat, M. (Translated, Bell, A.) (1992)., *A History of Food*. Chichester, West Sussex: Wiley Blackwell.
14. No author or date. “Castle Life - Medieval Food.” *Castles and Manor Houses*. Retrieved 3/2016, http://www.castlesandmanorhouses.com/life_04_food.htm#dairy

and cheese were easy to transport. In fact, many debts were paid in trade during the Middle Ages with dairy since there was not much cash in circulation. There are 13th century records showing payments between noblemen that were made in cheese. This must have been such a common occurrence because a measurement of weight (known as a “quintal”) was specially termed to describe the weight of this currency.¹⁵

Ancient and Medieval Cheeses

To get an idea of what cheese was like in period, though, let’s look at this quote from the *The Boke of Nurture*: by John Russell, (Ab. 1460-70)

“There is iiiii. sortes of chese ... grene chese, softe chese, harde chese or spermyse. Grene chese is not called grene by the reason of colour, but for the newnes of it, for the whay is not half pressed out of it, and in operacion it is colde and moyste... Spermyse is a chese the which is made with curdes and with the iuce of herbes.”¹⁶

This is translated in *Food and Feast in Medieval England*, where Hammond states:

“Cheese was available in four main varieties: hard (probably of a cheddar type), soft (or cream cheese), green cheese (a very new soft cheese [basically a brick of compressed curds]) and ‘spermyse’ (cream cheese flavoured with herbs).”¹⁷

This not only describes what cheeses were like in period, but the varieties that were made. There are vast differences with each of these types. Dutch Edam, Northern French Brie and Italian Parmesan, are among just some of the varieties of cheeses known in late medieval era that are still eaten today. Cheeses made from by-products of the production of cheese, like ricotta, were also made.¹⁸ Soft cheeses, such as the Swiss Neufchâtel, is 9th century Norman cheese that’s also still made today in a similar style. Each variety of cheese was different because of their ingredients. This had a lot to do with the types of milk, what the animals were fed — and, the climates in which they were made. Cheese became associated by the area in which it originated and was so unique that it was frequently “branded” by the region where it originated. Because it was preserved, it could be shipped great distances. Various regional cheeses became extremely sought after and highly desirable.

Early Saxons considered aged harder cheeses to be more expensive since many resources would be required for them to be preserved and stored.¹⁹ But by the time we reach the later part of the Renaissance, soft cheeses



DAIRYMEN AND CHEESE-SELLERS
(mid-13th century, Stone,
Basilica di San Marco, Venice)

15. Toussaint-Samat, M. (Translated, Bell, A.) (1992)., *A History of Food*. Chichester, West Sussex: Wiley Blackwell.

16. Hammond, P.W. (1993). *Food and Feast in Medieval England*. Stroud, Gloucestershire, Sutton Publishing Ltd.

17. Russell, J. (1867). (Translated by Furnivall, F, Edited from the Harleian MS. 4011 in the British Museum). *Boke of Nurture Folowyng Englondis gise*, London: Brittish Museum.

18. No author or date. “Castle Life - Medieval Food.” *Castles and Manor Houses*. Retrived 3/2016, from http://www.castlesandmanorhouses.com/life_04_food.htm#dairy

19. Denning, R. (2010, Feb. 13). “Dairy Products in Anglo Saxon Times (Part of the Anglo Saxon Survival Guide).” *EZine Articles*. Reviewed 3/2016, at <http://ezinearticles.com/?Dairy-Products-in-Anglo-Saxon-Times-%28Part-of-the-Anglo-Saxon-Survival-Guide%29&id=3754387>

were brought to a higher level and featured on the banquet tables of nobility.²⁰ An Italian philosopher, Marsilio Ficino (1433-1499), describes “hard, older cheeses were only suitable for peasants where as the softer more ‘milky’ cheese were for the very well to do solars, philosophers and nobility.” Soft cheese, plain or flavored, could be eaten at almost any meal served with bread. It was also used as an ingredient for stuffings with all varieties of meat and poultry; incorporated into stews and soups; added to make interesting pies and tarts; and, sweetened and used in desserts. By the later part of the 16th century, cheese and cheese dishes were highly regarded in many published cookbooks throughout Spain, France and England.²¹

(Please see **Appendix A**, which starts on pg. 15, for a selection of recipes and descriptions of cheeses from various regions I found worth sharing.)

Period Recipes (My Project)

For this project I will be making a fresh, or what’s sometimes called a ‘green,’ cheese. It’s not visually green in color – but rather given the name due to it’s freshness. In various cultures, soft cheeses like this were found in almost all areas of Europe during the Middle Ages, and had various names like farmer’s cheese, Neufchâtel, and slipp-coat cheese. In researching recipes for this project, I discovered many recipes that call for soft cheese or soft curds with little to no explanation as to how to make them. It’s likely that cheese preservation techniques were passed from generation to generation rather than kept in records.

When I have made cheese in the past — using modernly processed milks — I have been able to keep it nice and creamy for about three-weeks. In period, however, this cheese was only meant to be kept and used for only a few days or possibly a couple of weeks if kept in cold storage (like an underground cellar).²² You would only ever make about as much as would be needed.

MY PLAIN CHEESE:

1. Combining milk with acid, as previously discussed, is a very ancient method of cheese making. Below is my first period recipe source which is from Cassianus Bassus* (Greek, 7th Century) with a recipe for *Melca*, or curds:

*“The best method for making what are known as curds is to pour sharp vinegar into new earthenware pots and then to put these pots on a slow fire. When the vinegar begins to boil, take it off the flame so it does not bubble over and pour milk into the pots. Place the pots in a store or some other place where they will not be disturbed. The next day you will have curds that are much better than those made with a great deal of fuss.”*²³

This is an extremely simple recipe in which you heat the vinegar, add the milk and let it set to curdle. And, according to the author, are better than “those made with a great deal of fuss!” Simply redacted, it asks to put a strong vinegar into a clay pot on the low heat of the fire. When it boils, it’s removed from the fire and you pour in the milk. The pot is then moved to storage so they are not touched or compromised. Curds will be present the following day.

20. McIver, K. (2014). *Cooking and Eating in Renaissance Italy: From Kitchen to Table*. Lanham: Rowman & Littlefield Publishers.

21. Albala, K. (2007). *The Banquet: Dining in the Great Courts of Late Renaissance Europe*. Champaign: University of Illinois Press.

22. Kindstedt, P. (2012). *Cheese and Culture: A History of Cheese and its Place in Western Civilization*. White River Junction: Chelsea Green Publishing.

23. Grant, M. (2008). *Roman Cookery, Ancient Recipes for Modern Kitchens*. London: Serif.

* Cassianus Bassus was a 7th century Greek writer who adapted and collected sources of agricultural literature.

2. My second reference is from *A True Gentlewoman's Delight*, with the translation found on the *Boke of Gode Cookery* website. The book was first printed in London in the mid-17th century, and contained information about cookery, preserving, conserving, drying, and candying.

“To make a fresh Cheese

Take a pint of fresh cream set it on the fire, then take the white of six eggs, beat them very well, and wring in the juyce of a good Lemon into the whites, when the cream seeths up, put in the whites, and stir it about till it be turned, and then take it off, and put it into the cheesecloth, and let the whay be drawn from it, then take the curd and pound it in a Stone mortar with a little Rose water and Sugar, then put it into an earthen Cullender, and so let it stand till you send it to table, then put it into a dish, and put a little sweet cream to it, and so serve it in.”

In this recipe, a pint of fresh cream is heated until steaming on the fire. Six egg whites are beaten along with lemon juice and added to the heated cream. The solution is then removed from the fire and strained through cheesecloth. It then instructs the cook to use a mortar (and pestle) to mix or grind it along with rosewater and sugar, strain it again (*Cullender*) and let it stand until served. More sweet cream is added to it just before serving.

Both of these recipes are the inspiration for my plain cheese. I have made two different batches to compare the curdling agents. The base recipe for each will be done in the same manner. Here's a summary of my plan:

- I used the heat method to warm milk
- To curdle the milk, I used vinegar for one batch and lemon juice for another batch
- The solution was strained with the sieve basket and fine-linen cloth
- Then I strung it up to hang and drain the remaining whey
- Once drained to my desired consistency, I salted it to taste
- I then divided my total yield into three even containers, for each batch, and...

WAIT, BUT...PLAIN CHEESE? THAT'S KINDA BORING, RIGHT?:

Yes...yes it is. Fresh curd cheese was eaten plain, but it has very little taste. It was frequently mixed with other ingredients to make it taste more interesting. In addition, as the cheese aged, flavoring could be added to disguise any spoilage as it became older. Below are a couple of recipes describing the flavoring of curds.

3. In this 15th century recipe, curds are made with wine and ale – and, then sweetened with honey, cinnamon and ginger.

A pottage on fishday.

*Take and Make a stiff Posset of Milk and Ale' then take & draw the curds through a strainer with white Sweet Wine, or else Rochelle Wine, & make it somewhat running and somewhat standing, & put Sugar and a good quantity thereto, or **honey**, but not too much; then heat a little, & serve it forth all about in the dishes; and strew on Cinnamon, & **Ginger**, and if [though] have White powder, strew on and keep it as white a[s] it maybe, & then serve f[orth]*

From: Harleian MS. 279, *Potage Dyvers* (Translation by Anderson, Renfrow)
(Two Fifteenth-century Cookery-books: Harleian Ms. 279 (ab. 1430), & Harl. Ms)

4. Another example of a sweetened cheese from *Curie on Inglysch** #23 (V), English, 14th Century:

“Chinche. Take good milk. Put it through a strainer into a pan. Warm it. Add a little rennet and take it off the fire and stir it together and cover it. Then take a rush the length of half a platter and around this rush bind other rushes crosswise as thick as you may. Then lay these bound rushes on a platter. Cast about the curd and pour out the whey; then turn it upside down on another platter. Add sugar & ginger & so forth.”

5. Pounding curd cheese in a mortar and pestle with flavorings was also done in ancient Rome. Here’s an example of a Roman (2 AD) recipe from *Apicius** (AP 36) where lots of fresh herbs are combined and then thinned with vinegar, if needed:

“Moretaria: mentam, rutam, coriandrum, feniculum, omnia virida, ligusticum, piper, mel, liquamen, si opus fuerit, acetum addes.”

“Mortar mixture: mint, rue, corander, fennel, all fresh, lovage, pepper, honey, garum. Ad some vinegar if necessary.”

(Translation: Barbara Flower, Elisabeth Alföldi-Rosenbaum, *The Roman Cookery Book*)

6. The last example is a Catalan (Spanish) recipe from the 14th century out of *The Book of Sent Soví*, It described itself as a “garlic cheese” though mentions it being served as a sauce for meats.

“llos Quesos. Si vols fer allos quesos, hages formatge magre blanc e pica’l ab alls ensem. E quan serà ben picat, mit-hi un poc d’oli e destrempa-ho ab aigua tèbea que no haja bullit. Si hi mits dedins quatre o cinc mujols d’ous, ja serà molt millor, majorment si els dónes ab carn.”

“XVIII Garlic Cheese. If you want to make garlic cheese, take dry white cheese and grind it together with garlic. When it is well ground, put in a little oil or mix it with lukewarm water that has not boiled. If you put in four or five egg yolks, it will be even better, especially if it is served with meat.”

(Translation Joan Santanach and Robin Vogelzang.)

I flavored my plain cheeses to show it’s versatility by using a combination of some of the ingredients listed in the last four recipes (#3-6). It will hopefully show you a different aspect of curded soft cheese...and, it’s just delicious! Flavored with these items — it makes an excellent starter or dessert! My flavored cheese plan was as follows:

Using 1/3 of each of the plain cheese mixtures, combine:

- garlic (*Allium sativum*) and fresh chives (*Allium schoenoprasum*) for one
- and, honey and powdered ginger (*Zingiber officinale*) for the second one

* *Curie on Inglysch* included the very popular “Forme of Cury” which is referenced frequently with SCA cooks. The recipes in this book date from the 14th century and are some of the earliest examples in English. Interestingly, many of these recipes, found predominantly on the menus of the upper classes, remained virtually unchanged until about the sixteenth century.

* *Apicius* is the sole remaining cookery book from the days of the Roman Empire. Though there were several other ancient Greek and Latin works concerning food, some previously mentioned, this collection of recipes is unique because of how extensive it is.

Ingredients Used:

For this project I used (total):

2 gallons	Calder's Dairy, whole (4%) pasteurized cow's milk
1/4 + 1/4 c.	raw apple cider vinegar
1/2 c. (approx.)	fresh juice from 2 large lemons
1 TBSP.	grated lemon rind
8 cloves	whole, roasted garlic
4 TBSP.	Fresh chives
4 TBSP.	honey
1/2 tsp.	powdered ginger
	sea salt, to taste



The chart below indicates the ingredients as they may have been in period and compares them with my choices.

INGREDIENT	IN PERIOD	I USED
Milk	Pure, farm-fresh, unaltered milk from dairy animals like sheep, goats or cows. <i>(This is also referenced, in part, on page 4)</i>	The milk used was pasteurized — but not homogenized ("Natural Milk") — whole (4%) cow's milk. It was from Calder's Dairy, which is local to me. I chose this milk because I do not have access to raw milk (completely unaltered) in the state where I live. This is the nearest food-safe milk to which I have access. I also chose this milk for value and so I could make a large quantity of cheese for the price.
Acid-based Curdling Ingredients	<ul style="list-style-type: none"> • Vinegar or wines (based from fruits, see page 3) • Lemons or limes (see recipe #2, page 7) • Specific plants known (see page 3) 	<p><i>Vinegar:</i> I used Eden Organic brand raw, unpasteurized apple cider vinegar. I chose this because it was raw and the most natural variety.</p> <p><i>Lemons:</i> I purchased organic lemons and they were juiced by hand in my kitchen. A small amount the rind was also grated and used.</p>
Garlic <i>(Allium sativum)</i>	Fresh herbs grown in their own gardens or purchased locally. I'm choosing garlic as documented in recipe #6 on page 8.	A whole, organic garlic bulb was purchased from Whole Foods market. I roasted it myself in my oven at home in effort to create a more mild flavor mixture in the cheese.
Chives <i>(Allium schoenoprasum)</i>	Fresh herbs grown in their own gardens or purchased locally. I'm choosing chives as something similar to the items used in recipe #5 on page 8.	These were grown in my garden at home. They were picked and chopped the same day as they were added. They were chosen for the most Medieval reason: because that's what I had on hand!
Honey	Honey would have been locally produced and farmed. It would have been one of the primary ways of sweetening foods before sugar was imported. Recipes #3 on pg. 7 and #5 on pg. 8 use honey.	I used honey from the Michigan Bee Co. I chose this honey because it is local to me.
Ginger <i>(Zingiber officinale)</i>	Spices were either purchased or traded generally locally. Ginger was one of those items that could have been either freshly grown or preserved. Ginger is referenced in recipe #3 on pg. 7 and #4 on pg. 8.	Penzey's brand finely ground, dried ginger powder was used. This is a very high quality spice brand. It was already on hand in my pantry.
Salt	Salt was a valuable commodity in the Middle Ages. It was used for preservation and mined mostly from springs and then transported.	I used sea salt since I think this would be the best replication of what salt would have been like in the Middle Ages with its coarse texture.

Equipment Used:

These are items that were used to create the cheese. Cheese making has been explained in the previous pages using medieval preparation techniques.

- 1 large, heavy bottomed pot (The one I used is actually porcelain coated cast iron)
- 1 spoon for stirring
- Sieve basket (*see Appendix B, page 19*)
- Fine, light-weight linen
- Bowl to catch whey. This was so it could be saved for later use ...and measured
- Thermometer that attaches to side of pot (*See note below on step 3 about period visual clues.*)
- Measuring cups and spoons
- Knife for chopping lemons, chives, and garlic
- String and scissors
- Cheese rack to hang cheese to drip
- Mortar and pestle for mixing.

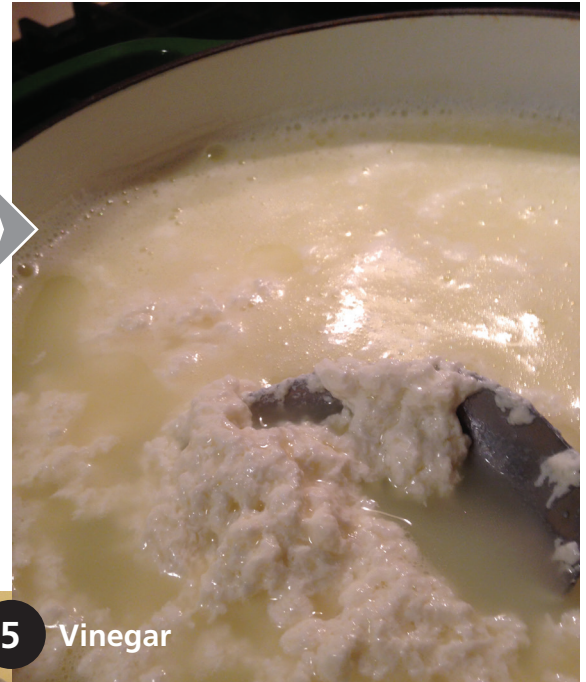
Procedure:

1. I make sure that all of my cooking materials have been completely cleaned and sanitized. This is done by boiling my thermometer and utensils in a pot of water for 10 minutes. They are left to air dry before use. (*This would not have been done in period, but I feel important in modern food preparation to be food-safe and in accordance with A&S criteria.*)
2. Since I don't have a hearth to put my pot in, I used my gas stove with flame. I poured the milk in heavy bottomed pot and turn burner on medium. Attached thermometer to the side of the pot. Begin to heat, stirring frequently (*photo right*).



3. Heat milk to 185°F. I do this to be sure that it's free of any bacteria that we wouldn't want to eat! Visually, I have been able to tell what this looks like because it starts to get a little frothy around the edges and steam whips begin to come up from the pot. In period there wouldn't have a thermometer – but a cook would start to know what the look and aroma of the properly heated milk would be. (*Photo left.*)

4. Once it reaches temperature, I slide the pot to another burner on the stove. In period, it would have simply been removed from the fire.
5. At this point, I add the curdling ingredients. For this cheese, we're using cider vinegar and lemon. Add 1/4 cup vinegar and gently stir. And then when doing the lemon version, I added the 1/2 cup lemon juice then the grated rind. The curds should begin to form (*Photos right and below*).
6. Let set for 15-20 minutes to be sure as many curds form as possible. NOTE: I found that adding 1/4 cup of the cider vinegar was not enough to curdle all of the pot. I added another 1/4 cup after 15 minutes because I wasn't happy with the result. (See *Observations, Plain Preparation Notes* on page 14.)



7. In the meantime, I put the linen cloth in the straining basket with a bowl below to catch the whey as it drains (*Photo right*). The whey will be saved to make something else.
8. At this point I carefully lifted the pot and poured the contents into the strainer basket with the linen lining. You can see the whey drain through the basket (*Photo below*).



9. I let the whey drain for a few moments then, gently pull up the four-corners of the cloth leaving about 3" of an end. I tightly tie string around the gathered end to make a napsack-looking bag (*Photo right*).
10. Next, I tie the bag using the strings, to a rod that hangs over my sink and let the bag drip into the bowl to catch the whey (*Photo below*). I happen to have a rack that was made for such purposes, but the sink faucet or a wooden spoon over a large pitcher works well for this step.



11. I let both the vinegar-curdled and lemon-curdled cheese hang for about one hour before testing them. The longer it hangs, the dryer and less spreadable the cheese becomes. This is personal preference and depends upon the end use of the cheese.
12. When the cheeses are to the desired consistency, cut the string and carefully unwrap. Some cheese will stick to the linen or cheese cloth. This can be scraped into the bowl. Add salt to taste and mix well.



Flavoring:

At this point the cheese was both weighed and measured into three even quantities (*See page 14 for results*). I have left one plain. One-third was flavored with roasted garlic and fresh chives. And, the other third was made into a sweetened cheese with honey and ginger. All of these items were mixed with a mortar and pestle in my kitchen. They were then stored in airtight containers in the refrigerator.

The Vinegar Curdled Cheese:



The Lemon Juice Curdled Cheese:



Observations:

Both the vinegar and lemon cheeses were made seven days ago. They were flavored four days ago to let the flavors meld. (They were done on separate days because of time constraints — it's a lot of work!) Below are some observations in making the cheeses.

The Vinegar Curdled Cheese:

VARIETY	PREPARATION NOTES	YIELD	DAY OF PREP	FLAVORING DAY	YESTERDAY
Plain	Having never made cheese with vinegar this was a test of my skill! I discovered that I had to use twice the amount of the cider vinegar than expected. I researched to learn that the pH level of cider vinegar is higher than lemon.*	<u>TOTALS</u> weight: 20.5 oz. approx. 4-1/4 cups by-product: 125 oz. of whey	Cheese curds were somewhat rubbery in texture. Taste was good, but rather plain. They stick together slightly when pressed. Larger curds than expected.	Cheese curds were beaten (pounded) slightly in mortar and pestle. Added a touch more salt. Taste was better and they were less rubbery. Has a good smell. Decide they will probably not be spreadable.	Still has a good smell and similar texture to last testing. Is maybe a bit dryer than before. Still plain. Mixed and molded it to bowl.
Garlic & Chive	Roasted garlic in the oven with a little olive oil. Chopped finely. Picked fresh chives from garden, chopped finely. Mixed (pounded) in mortar and pestle to blend.	<u>1/3 BATCHES:</u> weight: 6.83 oz. each	—	Added 2 TBSP. of garlic first. Was rather mild, so added 2 more. I like the chives for the added color. It tastes pretty good. Tastes more of chive than garlic.	Getting more of the garlic taste, but not overwhelming. Texture is good. Could be molded and hold shape.
Ginger & Honey	Measured ginger and mixed (pounded) in mortar and pestle to blend. Added honey 1 TBSP. at time to make sure it wasn't too sweet or runny.	about 1-1/2 cups each	—	When honey is added the texture becomes smoother. This tastes amazing!!! And smells of ginger, too.	Honey has made this really smooth. Is a little dryer than before. Smell and taste has permeated all the cheese. Wonderful!

NOTE: Regional A&S Vinegar Cheese Batch Total Weight was 23.2 oz. (7.33 oz. each)

The Lemon Juice Curdled Cheese:

VARIETY	PREPARATION NOTES	YIELD	DAY OF PREP	FLAVORING DAY	YESTERDAY
Plain	Originally I was only going to use one acid and then flavor the cheese. This cheese was made because I wasn't fond of the texture of the other cheese. It's noted that the curds are much less dense (see photos pg. 11) than the vinegar version.	<u>TOTALS</u> weight: 23.7 oz. approx. 2-1/2 cups by-product: 98 oz. of whey	Cheese curds were light and fluffy. Rather small in size. Has a great aroma. The whey is a very bright yellow. Soft and quite spreadable.	Cheese curds were lightly mixed slightly in mortar and pestle. Still seem spreadable, though slightly dryer. Maybe a little sticky. Tastes and smells slightly of lemon.	Still quite spreadable. Tastes nice. Maybe less lemony. A good cheese!
Garlic & Chive	(Same as in vinegar variety)	<u>1/3 BATCHES:</u> weight: 7.9 oz. each	—	As with vinegar version, chives give nice color. Garlic tastes good. Getting more chive than garlic. Can slightly smell the lemon. Somewhat sticky but soft.	Getting more of the garlic taste, but not overwhelming. Still lots of chive & lemon. Texture is good. Could kinda be molded, but is somewhat sticky.
Ginger & Honey	(Same as in vinegar variety)	a little more than 3/4 cup each	—	When honey is added to this one, the texture becomes really smooth and maybe slightly runny. This tastes and smells amazing!!!	Not as runny as before. Still tastes fantastic. Slightly lemony but nice and sweet. Ginger gives nice notes, too. This would make an excellent filling for dessert!

NOTE: Regional A&S Lemon Cheese Batch Total Weight = 23.9 oz. (7.97 oz. each)

* Science! The first batch of cheese didn't work as expected. I used twice the vinegar I planned because the first addition made only very few curds. I did some research to discover that the pH level of cider vinegar is 4.2 — whereas white vinegar is 2. Lemon juice has a similar pH level to white vinegar. (The higher the number, the less acidic.) In an effort to gain a more authentic ingredient, I wound up learning quite a bit! This is the reason for the 1/4 + 1/4 c listed ingredients on page 9.

APPENDIX A – Collected Recipes

The following are some collected recipes that I found while reviewing various sources for this project. Most involve making soft fresh cheeses as described in the previous pages. I have included this information to show that dairy production was very similar for many centuries and regions of the world.

Below is a summary for quicker review:

RECIPE	CENTURY	FROM/REGION	INGREDIENTS	ADDITIVES	SOFT CHEESE	HARD CHEESE
#1	1st	Roman Empire	pure, fresh milk	animal or plant rennet, salt	X	X
#2	7-10th	Scandinavian (Viking)	skim milk	starter (yogurt, buttermilk vinegar or other cheese)	X	
#3	10th	Baghdad	fresh, warm milk	animal rennet, salt	X	X
#4	13th	Arabic	April or May's milk	salt, oil		?
#5	14th	France	doesn't say	good white sugar or honey, rosewater, orange-flower water	X	
#6	15th	Italy	milk	salt, smoke	?	?
#7	16th	England	fresh milk, cream	ginger, rosewater, sugar	X	
#8	16th	Italy	whey	vinegar	X	
#9	17th	England	morning milk, cream	—	X	

#1

1ST CENTURY – ROMAN EMPIRE

Lucius Junius Moderatus Columella, a Roman writer on agriculture, described in great detail the preparation of a soft cheese that would keep:

“Cheese is made from pure milk, which must be as fresh as possible, because if it is left to stand for a period of time or mixed with water it will quickly sour. Generally speaking it is turned into curd with rennet of lamb or goat, but it can also be curdled with the flower of the wild thistle, or with saffron seed. A good alternative is the sap of the fig tree, if an incision is made in the bark while it is still green.

The best cheese is made with as little rennet as possible. The smallest quantity needed for a vat of milk weighs 3.5 grams. There is no doubt that cheese curdled with the young shoots of fig trees has a very pleasant taste.

The milk-vat must always be kept slightly warm, but not exposed to the fire as some people do. It must be kept at some distance from the flames.

Once the liquid has curdled, the curds must be siphoned as quickly as possible into wicker baskets or cheese-moulds. It is extremely important that the whey should be allowed to drip out as quickly as possible, and separate from the solid parts. For that reason country folk do not allow the whey to drip away, but press it down with weights - as soon as the cheese has been shaped - in order to extract the whey with pressure.

Then the cheese is taken from the moulds or baskets, and placed in the dark to prevent spoiling. Although it is placed on very clean planks, the cheese is scattered with ground salt to draw out some of the sourness. When the cheese has become firm, it is pressed again, with great force, so that it becomes compact. Then it is scattered once again with salt, and pressed under weights once more. When this has been done for nine-days, the cheese is washed in fresh water.

The cheese are placed in rows on wicker in the dark, so that the cheese does not touch another, if a very firm cheese is desired, or close together on different planks for a softer cheese, and not exposed to the wind. Under these circumstances one ends up with a cheese that is not full of holes or too salty or too dry. In the first case the cheese has not been pressed hard enough, in the second case too much salt has been used, and in the third case the cheese has been scorched by the sun. This kind of cheese can be exported.” (Col. RR. VII-viii)

#2

7TH–10TH CENTURY (APPROXIMATELY) – VIKING SKYR

Dairy products played a large role in Nordic Cultures. The climate made it easy to raise herds of milk producing animals and was cooler so preserved products would last a long time. There are several Viking sagas where dairy products are mentioned and other evidence of milk preservation and production throughout the Viking period. Some Icelandic sagas reference fresh curds and other dairy products being brought to weary travelers before mead or beer were served which would lead us to believe that it was quite important.²⁴

Skyr is somewhere between a cultured milk and a cheese. There are no extant recipes remaining from this time — only legend and a few archaeological discoveries as to what it could have been like. It is presumed that milk would be curdled with the use of soured milk, yogurt, buttermilk and even vinegar. Once the set, the curds would be drained and the end result would be similar to thick yogurt like we have today. It has a large amount of protein, a very dense texture, and is mildly sour in taste. Skyr is traditionally made with skim milk, since the milk fat was used to make butter. It was a mainstay of the Icelandic diet, and was eaten by itself, with fruit, or mixed into porridge or other dishes to stretch them and to add additional protein.²⁵

#3

10TH CENTURY – BAGHDAD

Below is a recipe from *Annals of the Caliphs' Kitchens* which is a collection of recipes and information on kitchen management by Ibn Sayyār al-Warrāq from the 10th Century in Baghdad. (English translation by Nawal Nasrallah), pg 199.

Making Cheese (Jubn):

Take fresh milk that has just been drawn, and while it is still warm, mix with it infaha (rennet). The proper way to use it is to take the rennet as it is with the skin (no need to pound it) and stir it into the milk while it is still warm. When the milk curdles (jamuda), put in in molds made of willow wood (khilāf) the press it, sprinkle it with salt and stow it away.

If you need to eat it right away, do not salt it. In this case it is called sādḥaj (plan cheese).

#4

13TH CENTURY – ARABIC

This is a recipe for dry cheese that is described as aging in a jug from *The Delicacies of the Table and the Finest of Foods and Dishes*, by Ibn Razin, a 13th-century Arabic work from Andalusia (southern Spain).

“Take cheese that was made in the second half of March or in April, salt it and place it on a wooden block in a well-ventilated place, high above the ground. Occasionally the cheese needs to be dried with the aid of a loose-woven cloth and coated with oil and salt until it appears to have absorbed

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24. Zimmerman, J. (2015, July 14). “Make Cheese Like a Viking.” *Erthineer*. Retrieved 3/2016, from <http://www.earthineer.com/blog/29568/make-cheese-like-a-viking>
25. Meistari Refr orðlokkar Fiachson. (No Date). “Preserved food of the Vikings.” *The Viking Food Guy Blog*. Retrived 3/2016, <http://vikingfoodguy.com/wordpress/papers/preserved-foods-of-the-viking-age/comment-page-1/>

sufficient salt and has dried completely. This process should take place in May. Now take a container that previously held oil, clean it by wiping it with a cloth, but without washing it with boiling water, and fill it with cheese slices that have been moistened slightly in oil, placing them next to one another with no spaces left between.

When the container is full, close it and seal the cover with clay so that no air penetrates. Open the container after 15 days in order to mix the cheese, and then close and seal it again. The process must be repeated 10 days later, and repeated again until the cheese softens and holes filled with oil appear in it. You will eat it, God willing, in the autumn with spicy bread and sweet grapes.

(Source, <http://www.haaretz.com/israel-news/.premium-1.583580>)

#5

14TH CENTURY – FRANCE

Below is a recipe translated from the book *The Medieval Kitchen: Recipes from France and Italy*, which was originally published in *Libre de Sent Sovi*, Catalan, 14th century. I have found many recipes indicating the use of soft cheese without a description of how to make the actual curd. This is one of those sources.

Angel's Food

If you want to eat the fresh curds, put the curds in the mortar and pound with some good white sugar. And when pounded together, blend in some rosewater or orange-flower water, and put it in bowls or dishes or whatever you like; and serve it at table. And if you don't wish to use sugar, add some good honey. And you can do the same with fresh cheese, which is better, and it is called angel's food.

#6

15TH CENTURY – ITALY

Leicester Cheese is a original recipe from *Platina*. Originally a solidier, Platina was a renown Italian Renaissance writer and gastronome of the 15th century. Around 1462, he moved to Rome and befriended a chef who he then later studied under. He is said to have written one the first printed cookbooks. (Andrews, E.B. trans. *Platina. De Honesta Voluptatae*. L. de Aguila. Venice, 1475. St. Louis: Mallinckrodt, 1967.)

De Caseo.

Even though cheese is served as a third course, this is nevertheless the place to set forth its virtue, since it is made from milk, which we have just discussed. It is often used in preparing many dishes. Take curds that are not too coagulated, so that the cheese does not turn sour, as often happens, and with a hand that is not too thin or too hot, but fleshy and gentle, reduce the curds into a mass and put it from the container into moulds or pails or small baskets; press it until the whey within come out. After the cheese has been salted it is put in a place where it is somewhat exposed to smoke; when it has absorbed the smoke and has been aged a little, it will be good to eat.

(Source, <http://www.godecookery.com/friends/frec21.htm>)

#7

16TH CENTURY – ENGLAND

This is an excerpt from *The Good Housewife's Jewell* (England, 1596), The original source can be found at MedievalCookery.com

To make a fresh Cheese and Creame. Take a gallon or two of Milk from the Cowe and seethe it, and when it doth seeth, put thereunto a quarte or two of morning Milke in faire cleansing pans, in such place as no dust may fall therein, and this is for your clowted Creame, the next morning take a quart of mornings Milke, and seeth it, and when it doth seeth, put in a quarte of Creame therunto, and take

it off the fire, and put it into a faire earthen pan, and let it stand vntill it be somewhat bloud warme, but firste ouer night put a good quantitie of Ginger, with Rosewater, and stirre it together, and let it settle all night, and the next day put it into your said bloud warme milke to make your Cheese come, then put the Curdes in a faire cloth, with a little good Rosewater, and stirre powder of Ginger, and a little Suger, so last, great soft towles together with a threed and crush out the Whey with your clouted Creame, and mixe it with fine powder of ginger, and Suger, and so sprinkle it with Rosewater, and put your Cheese in a faire dishe, and put these cloutes round about it, then take a pinte of rawe Milke or Creame, and put it in a pot, and all to shake it, vntill it be gathered into a froth like Snowe, and euer as it commeth, take it off with a Spooone, and put it into a Collender, then put it vpon your freshe cheese, and pricke it with Wafers, and so serue it.

#8

16TH CENTURY – ITALY

Another recipe for cheese translated from 1581 Italy, in the *Compendio de i secreti rationali* describes preserving curds by boiling the whey with milk from a previous fresh cheese making. This is a typical way of making ricotta and still one of the manners in which that variety of cheese is still made today.

The way to make ricotta or fresh cheese, (Chapter 52)

When the heardsman has made the milk put that whey that remains into a cauldron and but it to boil, and thus boiled it will separate a certain fatness that one calls ricotta; and this way of naming it re-cooked is thus called, because this material one cannot make without re-cooking the milk, the said ricotta comes to the top in one piece and one takes it out; and then one takes the whey that remains and keeps it until it becomes vinegary (acid) then make another time the ricotta, and one the boil starts to raise put into it a certain quantity of that sour whey or sour and this immediately clears the milk or whey, and one pulls out a lot of ricotta, but it is hard and loathsome (or tedious), but if you want to make it soft and sweet and pleasant in place of soured whey put in the strongest vinegar, but a very little, this helps make the sweet and tender ricotta; because of it's nature contrary to milk, it has the ability (virtue) to separate the large parts from the subtle and unctuous, and this is the true secret to making ricotta.²⁶

#9

17TH CENTURY – ENGLAND

This is a description of a slip-coat (soft) cheese from *The Closet of Sir Kenelm Digby*. Digby was an English courtier and diplomat who was a highly reputed natural philosopher and a leading Roman Catholic intellectual. The book claims to describe many items regarding “Excellent Directions for Cookery” including that of preserving. (http://www.gutenberg.org/files/16441/16441-h/16441-h.htm#Page_1).

“My Lady of Middlesex makes excellent slipp-coat Cheese of good morning milk, putting Cream to it. A quart of Cream is the proportion she useth to as much milk, as both together make a large round Cheese of the bigness of an ordinary Tart-plate, or cheese-plate; as big as an ordinary soft cheese, that eh Market women sell for ten pence...”

26. *Compendio de i secreti rationali* di M. Leonardo Fiorvanti Bolognese, *Medico & Cirugic*. Traslation by Smithson, H. (2008, May). Reviewed 3/2016, at http://www.medievalcookery.com/helewyse/cheese_instructions_2.html

APPENDIX B – *The Basket*

The cheese drainer is not a recent invention. There are several sources that show dairy and cheese making utensils such as pottery, sieves, and cooking pots. Shards of perforated ceramic containers have been abundantly excavated from areas of the Near East and Europe as far back as the time of Neolithic man.²⁷ Woven baskets were mentioned in recipes and certainly used as separators for curds and whey, but because the materials were more fragile, they were far less likely to have survived. Columella (4 AD – 70 AD), a 1st century Roman writer on all things agriculture, mentioned rush woven baskets of this variety and gives them the name calls “*fiscinae*.” During the Middle Ages in France, a soft cheese drained in baskets, was called “*jonchée*” and named from the word *jonc* meaning rush naming it after the materials in which it was made.²⁸

The basket used to help strain the curd and whey in my A&S project was presented to me as a gift from my friend THL Kathrine Hatton Rames. She presents many lovely and well researched woven treasures to the SCA. Please see her entries at this Spring's A&S competitions!

This basket is inspired by two illustrations from the *Four Seasons of the House of Cerruti*. One is titled “Fresh Cheese” and the other is simply called “Ricotta.” Another example is in the *Tacuinum Sanitatis* (pictured right) it is also titled “Recoccta.” These were chosen as inspiration for size and shape because she has been able document the materials to this part of Italy at the time of the 14th century. This basket particular basket is made of reed splint. It was sealed and washed after use. I intend to use it for Regional and Kingdom A&S, washing it thoroughly between uses. It will then be retired for display purposes only.



MY 14TH CENTURY
BASKET MADE
BY KATHRINE
HATTON RAMES



MAKING CHEESE (FOL. 60R),
TACUINUM SANITATIS
(ÖNB CODEX VINDOBONENSIS,
SERIES NOVA 2644), C. 1370-1400

27. Kindstedt, P. (2012). *Cheese and Culture: A History of Cheese and its Place in Western Civilization*. White River Junction: Chelsea Green Publishing. (pg. 13).
28. Toussaint-Samat, M. (Translated, Bell, A.) (1992)., *A History of Food*. Chichester, West Sussex: Wiley Blackwell.

Project Summary

Materials:

Used a local non-homogenized, whole milk (not using raw milk due to state laws and A&S criteria), raw vinegar, local honey, organic garlic, quality powdered ginger, fresh lemon, chives from home garden, and sea salt (*See page 9*).

Methods:

Warmed in a cast iron pot over flame, milk temperature determined by appearance (and corroborated by a thermometer for food safety), strained through linen in a period-reproduction cheese basket, hung to drain in a period manner. Mixed flavorings with mortar and pestle.

Scope:

- *Ingredients:* Milk was researched and determined to be difficult to procure raw, so the best possible substitute was found. Local honey used. Apple cider vinegar is also raw.
- *Preparation:* Heated, acidified, strained, drained, cooled, and stored. Reviewed. Mixed and flavored.
- *Presentation:* Moderate complexity. Learned about acid-based additives and differences. Added multiple flavors for variety.

Skill:

- *Physical Result:* Each are quite different in flavor, texture and aroma. Which is your personal preference?! I like the plain lemon cheese and both varieties of the sweet cheese, myself!
- *Presentation:* Use of table cloth, period looking utensils and matching serving pieces. Labeled for clarity.
- *Handling* Items were kept in cooler for transport and food-safety. Allowed to come partly to room temperature before serving so they would be spreadable. Prepared-lovingly with historical processes in mind.
- *Integration:* Prepared using flavoring ingredients from several sources. Served with whey bread made with the by-product of the cheese making.

Creativity: Created two versions of soft cheese using period appropriate ingredients to curdle (*pages 6-7*). Chose own ways of flavoring ingredients based on period recipes (*page 7-8*).

A SIMPLE SOFT CHEESE:

the science and magic of preserving fresh milk in period
Spring A&S 2016

Baroness Hannah Schreiber
(MKA: Dawn L. Sinclair)

Barony of Cynnabar, Pentamere

*Always willing to geek-out with fellow SCA folks about
food, illumination or general SCA life! Feel free to contact me!*

Email: dawnlsinclair@gmail.com or if you use messenger on Facebook and friend me!