Hateno Cheddar Cheese Prototype Recipe

Prepare yourself; to craft your own Hateno Cheddar Cheese, you will need every ounce of power, wisdom, and courage you possess. Can you triumph over this three month trial to become the Hero of Thyme?

2 Pound Cheddar Cheese Wheel: 6 hours making, 30 hours pressing, 3 months aging.

Please read through all instructions before beginning.

Cheddar Livestream: August 1st at 12pm MT, on twitch, @AimeeWoodWorks. This is a prototype recipe for The 2nd Unofficial Legend of Zelda Cookbook! Discuss the recipe in the Hateno Cheddar discord channel.

Ingredients:

2 gallons whole full fat milk, not ultra-pasteurized (7.57 liters)*
- This is a fantastic time to try to source some high quality local milk! I am using a cream top, non-homogenized, 100% A2 local milk.

1/2 teaspoon single strength liquid rennet (2ml)
- Vegetarians— There are animal or vegetable based rennets available, be sure to use one that fits your dietary requirements.

1 packet C101 mesophilic culture

1/3 teaspoon calcium chloride (1.7ml)

3 teaspoons cheese salt (18 grams), approximately**
- Amount of salt will depend on weight of cheese curds at a certain point. What is cheese salt? A salt without iodine or fillers, that will not kill off the good bacteria we are cultivating. Non-iodized normal salt should work fine!

If Wrapping Cheese in Cloth to Age:
- Butter muslin or fine cheese cloth; boiled to sterilize and dried
- Lard, butter, or ghee; for cheese cloth wrapping
  - Vegetarians— use butter or ghee instead of lard.

If Waxing Cheese to Age:
- Food grade beeswax, or cheese wax; 1 to 2 ounces of wax per 2 pound cheese wheel. A little more for the wax bowl and brush.
  - Beeswax is more natural, but can be brittle and cracks easily; especially if the cheese is bumped or dropped. Handle beeswaxed cheese with the utmost care when turning, and add a thicker coat of wax when applying.

  - "Cheese wax" is typically a blend of paraffin wax (also called petroleum wax) and more refined microcrystalline wax (a by-product made when de-oiling petrolatum). It is pliable and resistant to cracking, even when cool.
- Brush for brushing wax onto cheese; 2" wide is ideal

Required Special Equipment:
- Brewing thermometer, pot clip recommended
- Colander
- Butter muslin or fine cheese cloth, for draining and pressing
- Hard cheese mold, ~6" diameter recommended
- Weights; approximately 20, 40, and 60 pounds, can be found items. If you have a cheese press with a lever, you only need 5, 10, and 15 pound weights or found items.
- Aging environment; ideally 52 to 56°F (11 to 13°C) and 80-85% humidity. [see Part 3 on page 15 for options]

Optional Special Equipment: (nice, but not strictly necessary)
- A cheese mat; this is a metal mesh or bamboo mat, for your cheese to rest on while it ages. It helps to allow air flow to the bottom of the cheese. A sushi rolling mat works very well.
- A cooking scale, to weigh the cheese so you might add exactly the right amount of salt.
- A cheese press; makes pressing much easier and sturdy. I like the dutch lever style.
- A temperature and humidity sensor, to monitor your aging environment. Extra handy if it can alert you remotely to any changes.
- A thermometer probe with an alarm system, for monitoring your milk and curd; instead of the brewing thermometer. This will alert you if your temperature goes over or under a threshold you set.
- a PH reader; not necessary until you get very scientific about cheese-making, and you're doing everything else well.
- Cheese Log: Highly recommended! If you want to make a habit of cheese-making, consider keeping a cheese log in a dedicated cheese journal. Write down everything. Dates, times, weather on the brew day, humidity, exactly where you got the milk, the culture, length of time heating, scalding, pressing, all of it! Then you can refer back and experiment or troubleshoot once you start sampling your cheeses. Making one cheese per month means, after a few months, you only ever have 4 weeks to wait until your next cheese is ready!

Quest Notes Before the Adventure Begins:

- **Novice Cheese-Making:** I am writing this recipe assuming you have never made a hard cheese before. I am making this as simple as I can, and am giving alternatives for DIY solutions for equipment and aging space. I will talk about the ideal way to do things, but I want to emphasize: You can still make great cheese, on a budget, without all the bells and whistles. You don't need a cheese-press, a fancy chef alarm temperature sensor, or even a humidity sensor. You can get by with wax and your refrigerator's bottom drawer. I even recommend your first cheese be made this way, so you can see if you enjoy the process enough to invest further and make cheese-making a personality trait.
- **Batch Size:**
  - For a novice Cheese-Maker, who may not have the supplies or space for a large batch, this recipe yields roughly 2 pounds of cheese from 2 gallons of milk. However, this recipe can easily be doubled or even tripled, given you have the an appropriately sized pot and hard cheese mold. Making a larger cheese wheel decreases the ratio of mass to surface area, which can reduce moisture loss, splitting, and improve the aging process.
  - That said, the 2 gallons of milk and 6" diameter cheese mold should help us to achieve the shallow wedge of cheese depicted as Hateno Cheese in TotK.
- **For specific equipment recommendations with links, go to:**
  - https://www.aimeewoodworks.com/2nd-cookbook-welcome-packet
- **Cost:**
  - Given the specialty equipment and space requirements, this recipe may not be affordable for everyone, and I apologize. I have tested it with macgyvered equipment with some success, but it is better to have proper tools. If the cost is an issue, please feel free to try the Vegan Cheesecake Quest of Time instead, to be released on July 18 as well!

Part 0: Set up for Cheese

1) Sterilize your equipment, boil your cheese cloths, and boil your measuring utensils. Hang your cheese cloths to dry in a clean space. Thoroughly clean your work space, and lay sterilized equipment on a clean plate or baking sheet.
2) Lay out all of your ingredients. Make sure you have chosen a strategy and have the supplies for preparing your cheese for aging(see Part 2), and a cheese aging environment (see Part 3).

Part 1: Make the Cheese

A) Heat and Culture the Milk: 86°F for 90 Minutes.

1) Heat the milk to 86 degrees Fahrenheit (30 degrees Celsius).

For all methods; monitor the temperature closely, and do not overheat. A temperature with an alarm system is handy.

- **Direct Method—**
  - Clip a thermometer to your milk pot.
  - Carefully and very slowly heat the milk on very low, directly on your stove. Stir slowly and constantly to reach 86°F.
- **Water Bath and Kettle Method—**
  - Prepare a water bath in your sink.
    - Place your large pot of milk over a larger water pot.
  - Clip a thermometer to your milk pot, and ideally, a second thermometer to your water pot, to monitor temperature carefully.
  - Stir the milk occasionally and bring up to 86°F by slowly adding more and more boiling water to the water pot.
- **Double Boiler Over the Stove Method—**
  - Prepare a double boiler, or place your pot of milk over a pot of water with 2 inches (5cm) of water. The bottom of the pot of milk should not touch the water, this method uses steam to heat.
  - Clip a thermometer to your milk pot, and ideally, a second thermometer to your water pot, to monitor temperature carefully.
  - Stir the milk occasionally and bring up to 86°F by heating the water pot at a low simmer. As necessary, add more water to the water pot to replace escaping steam.

2) Add the culture.

- Once the milk has reached 86 degrees, maintain that temperature closely, do not overheat.
- Sprinkle 1 packet of C101 Mesophilic culture onto the surface of your milk, then, to avoid clumps, wait for the powder to be absorbed without stirring.
- After a couple minutes, the culture powder should be saturated, and can be stirred thoroughly to mix.

3) Maintain Temperature for 90 minutes.

- Your culture needs time to convert lactose to lactic acid, which will acidify your milk and ready it for coagulation.

B) Coagulate the Milk: Remove heat, add rennet, sit 45 minutes.

1) After 90 minutes, take your milk off the heat.
   - Either remove the milk pot from the water pot, or remove from the stove, and you can turn off the stove for now.

2) Coagulate the milk by adding 3/4 teaspoons (2ml) single strength liquid rennet. Stir to incorporate, then do not touch.

3) Let sit for 45 minutes, without heat.
   - The culture and rennet need time to coagulate the curd. You can see this happening as the milk thickens over the next 45 minutes.
   - No more heat is necessary; it will retain its heat fine until the next step given a normal ambient room temperature. More heat causes too much movement and can disrupt curd formation.

4) After 45 minutes, your milk has transformed into curd. Congratulations!

5) It is ready for the next step when you can cut it with a dull knife, and it will retain the cut.

C) Cut the Curd: Make a Grid. ~20 Minutes

- Now you must cut the curd so the whey (leftover liquid) can separate from the spongy curd.
- Your goal is to cut a grid into your curd, straight down to the bottom of your pot; so the top looks like grid paper.
- For our Hateno Cheddar, you want to cut between .5" to .75" (1.5cm to 2cm) squares.
  - Small squares mean more surface area, more moisture lost, a drier cheese, and a longer aging process; ideal for our hard cheddar.
  - That said, don't cut too small! The cut curds will shrink further as they cook.

- Equipment:
  - A professional cheese-maker may use a cheese harp, a tool with many parallel, equally spaced cheese knives, to cut a lot of curd at once.
  - Someone just starting out might use a long butter knife, or a single "cheese knife."

1) Using a long thin knife, cut vertical lines in your curd, all the way down to the bottom of the pot.

2) Then, complete the grid by cutting horizontal lines.

3) Let sit for 5 minutes. Do not touch, do not stir.

D) Scald the Curd:* 80+ minutes

*The curds will still be in the liquid whey, do not drain the liquid.

1) Return your curd pot to your heating method.

2) Over 15 minutes, bring back to 86°F. While it heats back up, begin stirring very slowly, to break up the curd.

- They will crumble and look like… well. Cheese curds. Definitely eat one, taste it for science!

3) Over 30 minutes, slowly increase the temperature to 102°F (39°C).

- 86° to start, then 94° after fifteen minutes, and 102° fifteen after that.
- This is about 1°F per two minutes. Set timers, and it is better to go slowly than too fast. I recommend writing down what time it is when you start.
- There is no need to stir during this, but you can occasionally and slowly if you want to, you won't hurt it now.

4) Maintain 102° for 30 to 60 minutes. Stir frequently, until the curds are firm and dry. Pull a curd out, let it cool, and test it between your fingers at the 30 minute mark. Remember:

- You do not want soft curds. Soft curds have retained too much moisture; they will feel firm on the outside but squishy in the middle. This moisture is whey, and the additional lactose, when aged, could make your cheese leak, and develop an off, acidic flavor.
- As much as possible, we want lactose gone from our cheese. Milk starts out with about 4% lactose, that drops to just over 2% in curd. By the time you press your cheese, there should be less than half a percent of lactose left. That leftover lactose is further converted into lactic acid while the cheese ages— so much so, that by the four to five month mark, virtually no lactose is left to be detected.
- Soft curds will clump together and stick easily, instead of crumbling apart. You want it firm, not sticky.
- After 30 minutes, remove a curd. Let it cool, then test it for bounciness between your fingers. It should be firm all the way through, you can eat it to try it.
  - If it's not dry enough, wait another 15 minutes, stirring and maintaining 102°, try again, and repeat.
  - If you are not sure, you can drain a spoonful of cheese curds, cool until you can touch them without burning yourself, and then clench them together in your hand. If they stick together and do not break apart easily, they are not ready. If they form a clump that is easily crumbled apart, you might be done!

5) When the curds are ready, remove from heat, and let them settle in the whey to the bottom of your pan for five minutes or so.

E) Drain the Whey:* ~20 minutes

*Please note: keep your liquid whey. Once your curd pot is empty, pour your whey back into it; it will help keep your curd warm for the cheddaring process.

If you only have one cheese cloth:
- Cut it in half. Use half now, for the draining and cheddaring.
- Retain half for pressing later.
  - If you plan to wrap your cheese for aging (instead of waxing), cut the retained half in half again, so you can use one quarter for pressing, and one quarter for dressing.
- You can sterilize cheese cloth by boiling it in water.

Before you start this part; weigh your colander and cheese cloth together. Write down how much they weigh together. My Colander + Cloth weighs: _____

1) Drain or ladle away some whey from your curd pot into a bowl, leaving enough liquid to cover the curds by an inch or so (3cm).
   - Again, keep the excess whey.
2) Line your colander with cheese cloth, and place into a large bowl or baking pan.
   - I fold my cheese cloth into quarters, and then press it into the colander. You may want to clip the cloth in place, to prevent it shifting when you pour in your curds and whey.
3) Gently pour both curds and whey into your colander, taking care the cheese cloth stays in place.
4) Stir your curds and whey in the colander, mixing them back up one more time so they can settle.
   - You want the whey to drain slowly, which will help your curds settle into place and plug holes naturally. When you first pour it in, your curds should still be swimming in it, and you'll have time to give it that last stir.
5) Let sit for fifteen minutes.
6) The whey should be mostly drained. Fold all four sides of your cheesecloth tightly over the curds to squeeze out any remaining liquid.
7) Pour the drained whey back into your curd pot.

F) Cheddar the Cheese: 2 to 3 hours

That's right!! Your curd is now cheese, though very young; now we must cheddar it!

Cheddaring: a process of setting your curd, then repetitively cutting it, stacking it, turning it; before finally, milling it. Each stage hits important acidity levels, the whey is usually measured with a pH reader in professional settings.

- For amateur batches of cheddar cheese at home, I do not believe a pH reader is necessary.
  - However, you can still develop your cheddaring intuition by taste-testing the whey yourself.
    - Every time you turn your cheese, taste a little bit of the whey on your fingers. You can track as the whey transforms from a milky-sweetness to neutral to very slightly acidic.
- The pH levels of the curds before cheddaring will be around 6.4, and the cheese will lower in pH until it reaches an ideal 5.3 to 5.1; where the process is stopped with salt before it can acidify further. You do not need to know this.

1) Set your Curd. (1 hour)

a) Keep the curd warm, at 85 to 90° F for the entire cheddaring process.

- Place your colander with your bundled curd back over your curd pot (now full of whey liquid). Place over very low heat, and monitor the temperature of the whey with a thermometer to maintain 85 to 90° F.

b) Taste-test a bit of the liquid whey from your curd bundle, or get your baseline pH reading.

b) Leave your curd in its wrapped cheesecloth, and turn every fifteen minutes, for one hour. Taste the whey whenever you turn.

c) When the whey begins to taste more neutral, and then slightly acidic, it's time to start cutting and stacking.

2) Cut and Stack your Curd. (1 to 2 hours, see step 3)

a) Remove the cheesecloth from your curd, and cut into 1 inch (2.5cm) strips.

b) Line your colander with the used cheesecloth again, and stack your strips back into the colander. Fold the cheesecloth back over your cheese.

c) Place a clean, warm (run it under hot water) plate face down on top of your bundled curd in the colander, then place a weight of around 5 to 10 pounds over the plate. This will synthesize a larger batch size, and help squeeze more whey out.

d) Continue to keep temperature at 85 to 90° F, and turn the stack every fifteen minutes for one to two hours (see next step), and remember to taste.

3**) Make the call.** At some point in step 2, when you think it's reached the right acidity, you must stop the cheddaring and proceed to step G.

- The 'right' acidity is 5.3 to 5.1, but you can go by taste and time.
- You must balance your desire to get as much whey out as possible, with your desire to stop the acidification process before it gets too acidic!
- When you think it's ready, tear some cheese out in your hands. They should feel dry and chewy, like cooked chicken breast.
- You got this! Be like Link! Take courage! I believe in you!
  - …you've always got the ocarina if you misjudge the timing; just play the song of… what? your ocarina doesn't help you time travel? oh. that's gonna make the cheese aging process a little less interesting for you then, huh?

G) Mill and Salt the Cheese: 30 minutes.

Keep your colander of cheese over your warm whey pot, continue 85 to 90° F, hang in there, we're nearly done!

1) Perform Salt Math:

- Weigh your cheese, in the colander with the cloth.
  - My Colander + Cloth + Cheese Weighs: _____
- Subtract the weight of your colander and cheese cloth, to find out how much just your cheese weighs.
  - (You wrote down just your colander/cloth weight in section D)
  - Just My Cheese Weighs: _____
- Multiply the weight of your cheese by .02
  - 2% of my Cheese Weighs: _____

2) **Measure out 2% of your cheese weight in cheese salt**, place in small bowl.

- Example: My cheese weighs 2 pounds, .2% of my cheese would be .04 pounds; converted to grams, that is just over 18 grams. So I need 18 grams of cheese salt, roughly 3 teaspoons, but I urge you to weigh your salt.
- A flat teaspoon of cheese salt should be about 6 grams.
- Ideally, this recipe yields about 2 pounds of cheese, so the above example should be close to what you need. But there are many factors; better for you to weigh your own cheese, and measure out precisely 2% of its weight in salt.

4) Mill the Cheese:

- Break apart all of the cheese into 1/2 inch (1.3cm) pieces. You can do this with your freshly clean hands, it is very fun, you do not need to be exact.

5) Salt the Cheese:

- Sprinkle a pinch of your salt over your cheese in the colander, then mix rigorously with your hands. Let sit for a couple minutes. Repeat, until all of your salt is mixed in, about 20 minutes.

H) Form the Cheese: 10 minutes.

1) Line your hard cheese mold with a clean, sanitized cheese cloth.

2) Give your curds one last mix, then press them firmly into the mold with your clean hands.

3) Fold the cheese cloth tightly over the cheese.

I) Press the Cheese: 30 hours.

Your cheese can now be kept at room temperature for a few days as it is pressed and dried. Im**press**ive right?

- **Turning the Cheese:** Over 30 hours, you will slowly increase weight and time pressed. Between each interval below, you will need to "Turn the Cheese":
  - Remove the cheese from the mold
  - Unwrap the cheese cloth
  - Flip the cheese in the cloth
  - Wrap it back up
  - Place the cheese back into the mold.

To avoid saying that each time, I will say "Turn the Cheese".

- **Sleep:** Depending on when you began this particular adventure, it may be that the "ideal" instructions below tell you to turn the cheese in the middle of the night, as I discovered myself. Sleep is important; don't ruin your sleep to turn cheese. Seek the alternative "Conducive to Sleep" schedule further down, so you can stop making cheese right now and go to sleep; save your marriage.

Option A: IDEAL PRESSING INSTRUCTIONS:

1) Press for 1 hour at 20 pounds. Turn the Cheese.

2) Press for 1 hour at 30 pounds. Turn the Cheese.

3) Press for 4 hours at 40 pounds. Turn the Cheese

4) Press for 24 hours at 60 pounds. Check your Cheese.

Option B: SLEEP CONDUCIVE PRESSING INSTRUCTIONS:

1) Press for 30 minutes at 20 pounds. With care, Turn the Cheese, it may be a bit crumbly.

2) Press for 7 to 12 hours at 40 pounds. (go to bed!) Turn the Cheese whenever you wake up tomorrow, then:

3) Press for 24 hours at 60 pounds. Check your Cheese.

Next: CHECK YOUR CHEESE:

- Undress your cheese.
  - If it looks good and solid, proceed to pressing!
  - If it is too crumbly, falling apart, and hasn't formed a uniform curd, it may need more time and pressure. Put it back under for 4 to 10 more hours, and increase the weight, up to 75 pounds if you can.
- If it is still not quite solid after the additional pressing time, it may have dried out too much; no whey! You did too good a job getting all that whey out! It can still be good cheese, but I would recommend waxing it for aging, to prevent further moisture loss.
  - To troubleshoot your next batch if it's too dry; cut larger squares when you cut the curd, stir less, proceed to G more quickly.
  - Generally there are more problems with cheeses that are too wet, than too dry, so be kind to yourself, you're just too good at this and my instructions were not ready for your diligence.

Part 2: Prepare the Cheese

It is now time to prepare your cheese for the aging process.

Waxed or Wrapped in Cheese Cloth:
This is the major decision for our Hateno Cheddar Cheese, and I believe cloth is more accurate to the in game photo than wax. The in game Hateno Cheese has developed a rind, which is only possible with cloth and air flow.

That said, wax is far better for a beginner cheese-maker; you will not need to deal with mold growth, and a waxed cheese is more forgiving to a less than ideal aging environment. If your cheese at this point is a bit dry or crumbly, or if you intend to age your cheese in a refrigerator drawer, I would suggest waxing.

If you become interested in cheesemaking and are ready to make your second or third batch of cheese, that is when I would suggest trying to wrap your cheese; also called dressing, bandaging, clothing.

Wrapped cheeses allow airflow during the aging process; they develop an exterior skin of mold over the cloth, and ideally an interior rind under the cloth. The additional mold and air can help new aromas and distinctive tastes emerge for a more interesting cheddar. That said, it is more in need of a carefully controlled aging environment.

Option A) Wax your Cheese

Disclaimer: Heating wax can be very dangerous, and highly flammable; it requires constant supervision. The method below uses low heat, a water bath, and a brush to apply; all in order to avoid high temperatures and the wax flash point. A wax fire cannot be put out with water! If anything goes wrong, cover with a lid, turn off heat, carefully remove from heat, and do not put water on it.
To be extra safe, you can monitor the temperature with a thermometer; do not let it get over 250°F (120°C). Once it has melted, the liquid wax can heat very quickly. Please keep safe.

Dry the Cheese for 3 to 5 Days:

1) After your cheese has been pressed, remove it from the cheese mold, unwrap it, and place it on a clean cheese mat on a clean plate, and cover it lightly with cheese cloth.
2) Find a cool place with air flow, and allow it to air dry for three to five days, turning the cheese once per day. Be sure pets and pests cannot get to the cheese.

- If you live in low humidity, 3 days is plenty. For higher humidity, four or five days will help dry it further.

Wax the Cheese:

3) Demold the cheese. After several days drying, the cheese may have developed some mold; it may not be visible, so clean it either way. Add one teaspoon salt to 1 cup water, soak a clean cloth in the solution, then gently wipe all surfaces of the cheese. Wash your hands, prepare a clean plate, get a new clean cloth, and repeat. All mold should be removed, and the cheese should look bright; place it on the clean plate.
4) Prepare a workspace next to your stove; lay down aluminum foil or parchment paper to catch any wax drippings.
5) Place cheese wax into a small bowl or pot, and put it into a large pot with two to three inches of water. Be sure the water is low enough to not spill into the wax bowl or pot, and keep the large pot lid nearby.
6) Heat the pot of water on low to slowly melt the wax. Stir the wax as it heats. Monitor with a thermometer to be extra safe, do not heat over 250°F.
7) When the wax is fully melted, use a brush to apply the wax directly onto your pressed cheese. Be gentle to prevent brush strokes from scratching the cheese, and work quickly. You can lay the cheese flat on your foil or parchment, brush one side, wait for the wax to harden, then flip. Alternatively you can hold it in one hand, brush with the other, and slowly spin to wax all sides.

8) Your objective is at least a 1/8" thick coat of wax over the whole cheese. This takes approximately three thin coats, or two thick coats, it will depend on your brush, wax, and method.
9) When your cheese is fully waxed, set onto a clean plate with a clean cheese mat, and place in your aging environment.
10) Clean up: Remove the pot from heat. Take care in removing the wax bowl, and if it is not a dedicated wax bowl, clean it quickly and carefully while the wax is still warm and malleable; same with the brush. If you wait until it is too cool, you may need to heat it up again to clean it completely of wax.

Option B) Wrap your Cheese

Wrapping cheese in cheese cloth should be done right after pressing; you do not need to leave it out to dry.

Wrap the Top and Bottom, then Press for 1 Hour:

1) On a clean surface lay out aluminum foil or parchment paper, and spread out your sterilized cheese cloth on top. Set your pressed cheese onto it, and cut two circles slightly larger than your cheese. Ideally, you want the circle 3/4" (2cm) larger than your cheese on all sides.
2) Melt your lard, butter, or ghee.
3) Dip a cheese cloth circle into the liquid, make sure it is fully coated, and squeeze out any excess.
4) Spread this saturated cloth circle onto the top of your cheese, flattening it so there are no wrinkles or bubbles. Press the edges of the circle down over the sides of your cheese.
5) Carefully flip, and apply the same treatment to the other side.
6) Be sure the edges of both circles are smoothed down; apply more melted liquid if necessary.
7) Place the cheese back into the hard cheese mold, and press for one hour at 60 pounds.

Wrap the Sides, then Press for 8 to 16 hours:

1) Lay out more sterilized cheese cloth, and carefully remove the cheese from the mold.
2) Cut a long strip of cloth to cover the sides of the cheese; you can roll the cheese along the cloth to see roughly how long the strip needs to be. The width should be a little less than the height of your cheese, but wide enough that it will overlap with the circle cloth you have already pressed down over the sides.
3) Melt more lard, butter, or ghee.

4) Dip the strip of cheese cloth into the liquid, make sure it is fully coated, and squeeze out any excess.
5) Apply this saturated cloth strip to the side of your cheese, making sure it is centered on the sides, and overlaps both the top and bottom circle. I find it is easiest to roll it on while rotating the cheese in place. Smooth out the cloth so there are no wrinkles or bubbles.
6) Place the cheese back into the hard cheese mold, and press overnight, or for 8 to 16 hours, at 60 pounds.
7) Carefully remove the cheese from the mold, and inspect. There should be no bubbles, and the cloth should cling smoothly to the cheese on all sides.
8) If your cheese is fully wrapped and ready, set it onto a clean plate with a clean cheese mat, and place in your aging environment.

Part 3: Age the Cheese

Aging and Turning <u>Wrapped</u> Cheese:

- The ideal aging environment(cheese cave!) is still the same 52 to 56°F and 80 to 85% humidity.
- Wrapped cheese must be turned daily for the first three months. Set a daily reminder and carefully flip it at the same time each day. After three months, if you continue aging it, you can turn every fourth day, or twice a week.
- After a few weeks, natural molds will begin inhabiting the exterior of your cheese. This is normal and nothing is to be done about it. They will dry out when they run out of moisture, and harden after a couple months.

Aging and Turning <u>Waxed</u> Cheese:

- The ideal aging environment(cheese cave!) is still the same 52 to 56°F and 80 to 85% humidity.
- Turn your waxed cheese at least once a week; carefully flip it to the other side.
- When you turn your cheese, check it for mold; particularly any dark spots under the surface of the wax.
    - If you do find mold; you will need to remove all of the wax, slice off the mold, wipe down the whole cheese with salt solution again (1 teaspoon salt to 1 cup water), and repeat the full waxing process, including drying for another couple days, and wiping again.
    - In this recipe, mold could happen if the cheese was not thoroughly cleaned with salt solution before waxing, if a tiny hole was left unwaxed, or if a hole was punctured into the cheese.

- Mold is less likely if you flash your cheese by directly dipping it into very hot wax in order to wax it, which kills off mold spores. However, I will not teach you how to do that here, seek that dangerous knowledge from a professional source elsewhere.

Aging Times:
- Mild cheddar can be ready in two to three months.
- A traditional sharp cheddar takes about a year, and an extra sharp cheddar a year and a half or more.
- For a first try, I recommend sampling your cheddar at the three month mark!

Label your Cheese:
- Ideally, put the date, the type of cheese, the milk used, the batch number if you are keeping a cheese log, and of course, your special cheese-maker imprint.
  - You can mark your waxed cheese directly with a felt tip permanent marker.
  - Unsure how people mark their cheesecloth wrapped cheese. It looks like people write on them after they are dried, a couple months in? Maybe stick label next to it? Stamping? This is a question to be answered.

Setting up an Aging Environment (Cheese Cave):

Option A — Refrigerator Drawer Set Up:
- Aging Environment: A Refrigerator's Crisper Drawer, ideally at the bottom of the refrigerator, where it will be furthest from the cooling element. The ideal 52 to 55°F, is not likely here, but you can counteract that a little.
  - For this cheese cave, I recommend waxing your cheese instead of wrapping, to prevent further moisture loss and protect it from the cold.

To Prepare and Maintain your Cheese Cave Drawer:
1) Empty out the drawer, and thoroughly sterilize it with a bleach solution.
2) Line the drawer with a clean towel, ideally freshly boiled and air dried.
3) If you have temperature and humidity control for that drawer, incredible, set it to the warmest and most humid setting.
4) If possible, measure the temperature and humidity in your refrigerator's bottom drawer, to see what the baseline is. If you cannot measure, no worries
   - You need an ambient thermometer for this, a brewer or meat thermometer will not read the ambient drawer temperature properly.
   - Ideally, a combined ambient temperature and humidity sensor would live there permanently.

5) If the drawer is not above 80% humidity, which would astonish me, fill a sterilized glass mason jar halfway with water, and place it in the corner of the drawer. This will help keep the drawer more humid, but take care not to spill it when you open or close the drawer.
6) If possible, lower the temperature slightly.
   - A fridge needs to be kept below 40°F to keep things safe, and is usually set between 35 to 38°. But three degrees still matters to cheese!
   - If yours is set to 35, maybe it can be raised to 38, if that is acceptable to the items in your fridge and the people in your household.
7) Because it is aging in a cooler environment, your cheese will take longer to mature; you may want to wait four months minimum, instead of two or three.
8) To maintain humidity, avoid opening the drawer except to turn the waxed cheese once per week.
9) When you turn the cheese, check thoroughly for mold; there is greater possibility of cross contamination in a fridge.
10) Top up the jar water regularly, and change out/re-sterilize the jar and towel every month at least.

Option B — Mini Fridge Set Up

- Aging Environment: A dedicated mini fridge, with a temperature control that can be set to 55°, is ideal. A wine fridge is great for this.
  - I would not recommend buying, and storing, a mini fridge cheese cave, unless you just happen to have one on hand, or if you have made cheese a few times and are certain this is part of your identity now.
- If you find a mini fridge, but it does not have temperature control, there are electrical ways to retro-fit the fridge with a temperature controller, that will automatically turn the fridge on and off from its plug source. Resources and guides are available online to help you do this, I will not go into it here.
- This set up will work well for both wrapped and waxed cheeses!

To Prepare and Maintain your Cheese Cave Mini Fridge:

1) Empty out the fridge, and thoroughly sterilize it with a bleach solution.
2) Line a shelf with a clean towel, ideally freshly boiled and air dried.
3) If the fridge has temperature and humidity control, set it to 52 to 56°F and 80 to 85% humidity. If the controls aren't that precise, typically this would be the highest temperature and highest humidity setting on a mini fridge that has no heating element.
4) If possible, measure the temperature and humidity in your fridge, to see what the baseline is. Some fancy mini fridges will have a reader for this installed already.

- You need an ambient thermometer for this, a brewer or meat thermometer will not read the ambient temperature properly.
- Ideally, a combined ambient temperature and humidity sensor would live there permanently.

5) If the fridge is below 80% humidity, fill a sterilized glass mason jar halfway with water, and place it in the corner of the fridge. This will help keep the drawer more humid.
6) To maintain humidity, avoid opening the fridge except to turn the cheese.
7) When you turn the cheese, check thoroughly for mold; there is greater possibility of cross contamination in a fridge.
8) Top up the jar water regularly.

Option C — Quest for a Cheese Cave Set Up

You may have an ideal aging environment accessible to you already. It could be your garage, basement, crawlspace, underground bunker, or cellar!

Finding your Cheese Cave:

- **Measurements:**
  - Armed with an ambient temperature and humidity sensor, you just need to set forth and find the right location; it's a quest!
  - Make sure it is a consistent temperature and humidity level; check multiple times over the course of a few days, at all hours, to be sure.
    - A remote sensor can be left in the potential cheese cave, and makes a handy line graph on your phone; so you can see if there are any spikes or dips.
- **Seasonal changes:**
  - Perhaps your garage would work great in the fall for three months; but then it gets too cold. Or spring is ideal in your crawlspace, but then it gets too hot. A basement, a cellar, an underground bunker, may all work perfectly!
  - You may have to time your cheese aging with a mild three month season.
- **Access:**
  - You will need to access this location daily (if wrapped), or weekly (if waxed), to turn the cheese, check for mold, and monitor the environment.
  - Given you may not be checking on it daily; a remote alert temperature and humidity sensor would be helpful. It will alert you via your phone if something in the environment changes. It does require an internet connection to work.
- **Build a Cave:**
  - Many folks expand their basement, or can dig underneath their home to add an additional cellar room; specifically for housing wine or cheese! If this is a viable option for you, it could be an interesting longterm solution.
- **Actual Natural Caves:** I was once a cave tour guide, so I have a few notes:

- You may think; would an actual cave be the best aging environment? For many reasons, the answer is not really.
- Unless the cave has a very small opening, or a double air lock system to retain humidity and keep it cool, it may be too dry and slightly too warm. Be sure to measure the temperature and humidity at different times of the day, to make sure it is consistent.
- If you leave your cheese in an actual open cave; it will be eaten. This is not a case of pests getting to your cheese; you are a guest who has left a tasty snack. It is to be expected.
- Many caves are publicly or privately owned. You will need to get explicit permission, and leave no trace.
- I do not know if the bacterial growth of cheddar cheese will effect the caves natural systems; and your cheese may also be effected by the caves ambient yeasts and molds. I would not want you to introduce a foreign cheese mold to an untouched cave system.
- If you own a natural cave: I would be very very curious if you decided to age your cheese in it.

To Prepare and Maintain your actual Cheese Cave:

1) A nice dry shelf in your cheese cave, inaccessible to children or pets, is ideal. Clean it off, and you can place your plated cheese mat and cheese directly on the shelf.
2) If you have one, place your temperature and humidity sensor nearby.
3) Monitor and turn your cheese as needed. That's it!

Part 4: Eat the Cheese!

You have survived 18 pages of directions, gathered quest items, and become a cheese alchemist! After patiently turning cheese for months, it is time to sample!

Directions:

1) Throw a Cheese Tasting Party. Pair your cheddar cheese with any manner of potions, elixirs, canapés and appetizers. Dim the lights and roll the drums.
2) Undress the cheese; remove wrapping or wax, wipe clean with salt solution.
3) Cut a wedge of cheese, and slice to sample. Is it ready? If no, you can eat that wedge, cut the rest into wedges, re-wax or wrap them, label, and continue aging.
4) Celebrate! You made Hateno Cheddar Cheese! Quest Complete!
5) Seal any leftovers in an airtight container in the refrigerator, and enjoy soon!