

Abalone Farming

By Ellen Walsh

Tucked into a private corner off the rugged Pacific Coast, is an eco system so perfect for the spawning and farming of abalone, that it cannot be duplicated anywhere in the world.

On site producer Brad Buckley of The Abalone Farm in Cayacus, California was there on a clear and beautiful day to show us around, showing us the ins and outs of abalone farming.

With controlled fertilization through wild abalone, this highly acclaimed, sustainably managed aquaculture facility harvests 1.5 – 3 tons of abalone per week, supplying sushi restaurants world wide with live abalone.





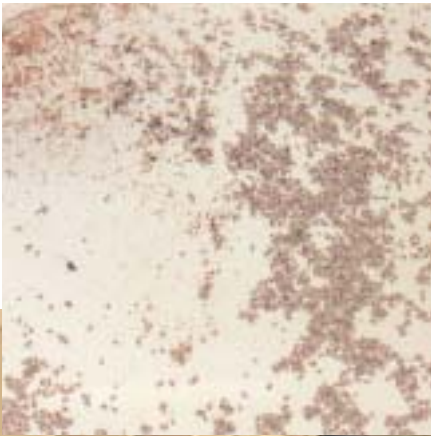
Brad Buckley in Stage 1 area

First Stage of Growth – Infancy through the First Eight Months of Life (xx)

The eggs are in buckets in the “hatchery” – infused with the wild abalone sperm. They hatch within 24 hours and are transferred to tanks after 5 days. In the nursery, they are no longer eggs – they are baby abalone.

We first entered the nursery, a term loosely used to describe the months old abalone as they lay on the bottom of well ventilated tanks waiting to grow. They have already been infused with the sperm of the wild abalone. During this process, attention is paid to the growth process of the growing abalone, attempting to keep like sizes with like sizes, readjusting their tank locations through painstakingly delicate methods. Their light greenish color becomes more apparent as they grow, as they hunker down for their cozy 8 month stay of their first stage of life.

Out of the 15 – 30 million abalone that have been spawned, 10 – 15% will make it into stage two of life.



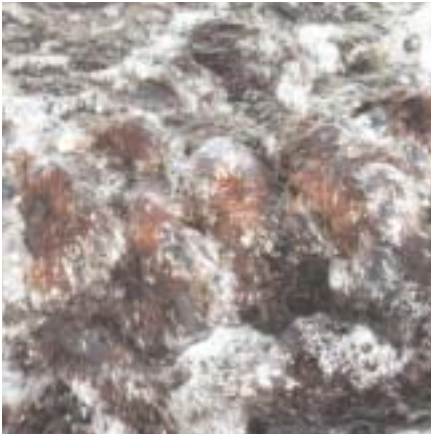
Stage 1: Infancy to 8 months of age (x)



Almost ready for sunlight –

Home of Stage 1





Red Algae in Tanks



Red Algae in Hands



Algae in Tanks in Stage 2 area

Stage Two – 8 Months to 2 Years Old

Once the abalone have survived the critical stage of its infancy, they are ready to move into the sunlight. Grouped together in their first outdoor tanks located right outside their former nursery, they feed on whole algae, and take on a light greenish and blue color. The size of these delicate beings rest easily on the fingernail of a hand.

Stage Three – 2 Years to 4 Years

After their second year of life, they will make but one more move, and that is to the larger tanks on the other side of the farm, where the current of the moving water is a little stronger, but the constant supply of seaweed and algae is constant. Their natural habitat of sunlight and seaweed is all these feisty little sea creatures need to grow and thrive.

You may be surprised at the usage of the word “feisty” when describing abalone. During the final stages of the abalone’s growth, they show an amazing amount of vigor and strength. We were surprised at the coaxing it took to pull an abalone off its resting perch. They held on tight, and the other abalone definitely reacted to the disturbance of one of their own being lifted from the waters. Brad held one of the abalone in its hand for us, and we were amazed at the tenacity of its feet as it moved around, and finally settled, into a position on Brad’s hand.



Stage 2 Growth Area



Brad Buckley in Stage 2 Area



Brad buckley Stage 2 area, with closeup



Overview of final Stage of tank life prior to harvesting



Closeups 1



Closeups 2

Diet of the Abalone

The main diet of the abalone is algae and seaweed, conveniently grown in the Pacific ocean just off the shores of the farm. If you look at the photograph of the farm overlooking the ocean, you will see a light brown haze over the water, just a couple hundred yards off the jagged shore's edge. That is, in fact, the algae and seaweed that feeds the abalone through all its stages of growth. In the early stages of infancy, the algae is fed through a tube into the tanks, and in the later stages, the seaweed is fed whole. So abundant and fast growing is this ocean bed of nutrition, that the abalone farmers never even have to go below the surface of the water to collect the algae. They just snip off the top 5 inches, collecting less than 10% of the available crop. And it's a wonder they even take 10% of the kelp. It grows back at the rate of 1 inch per hour!



Closeups 3

Size of the Abalone

Moving the abalone through their stages is primarily a function of age. The average size of the harvested Abalone is 3.25 ounces, to 4 ounces in the shell. The meat usually represents about 30% of the abalone's weight. Once it reaches its optimum weight, growth slows down tremendously in the Abalone Farm. A nine year old abalone can be as big as 7 inches. The shell just grows right along with the abalone as it matures, keeping the same shell throughout its lifetime.



Feisty abalones exhibit strong suction on hand



The Pacific Ocean is abundant with algae and seaweed, the perfect diet for abalone.



Each bag is approximately 10 lbs. It is shipped at about 50° – 55° degrees temperature. 1200/lbs. a week get shipped into the Los Angeles sushi market.



Packaged Abalone delivered to your door from www.fbworld.com. Click on Shop Online, scroll down and click Gourmet Food, then Seafood.

Abalone Market

The Abalone market is a thriving market. Over 1200 lbs. a week get shipped into the Los Angeles sushi market alone.

Approximately two tons of abalone are harvested a week at the Abalone Farm, and are shipped world wide.

“The challenge in abalone farming is to never over harvest due to the pressure of demand”, says on site manager Brad Buckley. “If you over harvest, you are ultimately bringing your size down. If you bring your size down, you are bringing in less money. Then it takes you a good 6 – 8 months of a low harvest to recover what you’ve lost.”

Frozen Abalone from the Abalone Farm can be purchased at www.fbworld.com. Please call us direct if you have need for a live abalone shipment. Minimum orders will apply.

Home to the Stage 2 Growth Area





Red Abalone Shells

Best Way To Handle And Cook Abalone

When you have a live abalone, immediately shuck it out of the shell, foot side down, by placing a thin fillet knife against the inside of the flat portion of the shell, and move it inward, cutting the muscle attachment close to the shell. The muscle tissue is amazingly reactive. You want it to die, and relax. Remove the meat from the shell. Trim the head, gills, and viscera. Again, lay the abalone foot side down. Place the knife forward of the point where the meat was attached to the shell, and cut at a 45 degree angle down and forward. Tenderize gently with a meat mallet. If you do not have a meat mallet, the broad side of a knife will do. While alive, do a quick sauté in a hot skillet coated with either oil or butter, after you have dipped it with egg wash, or coated it with flour. If it is tough, it means it was not handled properly. Do not refrigerate live abalone. Just cool it in natural air. If you are working with frozen abalone, (available in fbworld.com on line shop) defrost, then tenderize by hammering while still in the plastic covering.

This article is about California Red Abalone, indigenous to the cold Pacific ocean waters. These are a little more challenging to work with than the abalone spawned out of the warmer waters throughout the world, and as such always need to be coated first, in either an egg wash, or a sprinkle of flour. There must always be either butter or olive oil in the pan. The direct contact with the hot pan will make the red abalone tough.

Try These Abalone Recipes

Abalone Chowder
Abalone Cioppino
Abalone D' Ore
Abalone Medallions

ABALONE D' ORE

By Executive Chef Edward Pizzuti

Made with:

Abalone from The Abalone Farm,
Cayucos, CA

Ingredients:

- 1 lb. Baby Abalone Steaks (California farmed) (about 8)
- Flour – for dusting
- 2-3 eggs
- 1 tbs. fresh chopped flat leaf parsley
- 2 oz. olive oil
- 1/4 lb. unsalted butter
- 2 lemons – cut in wedges
- salt & pepper

Procedure:

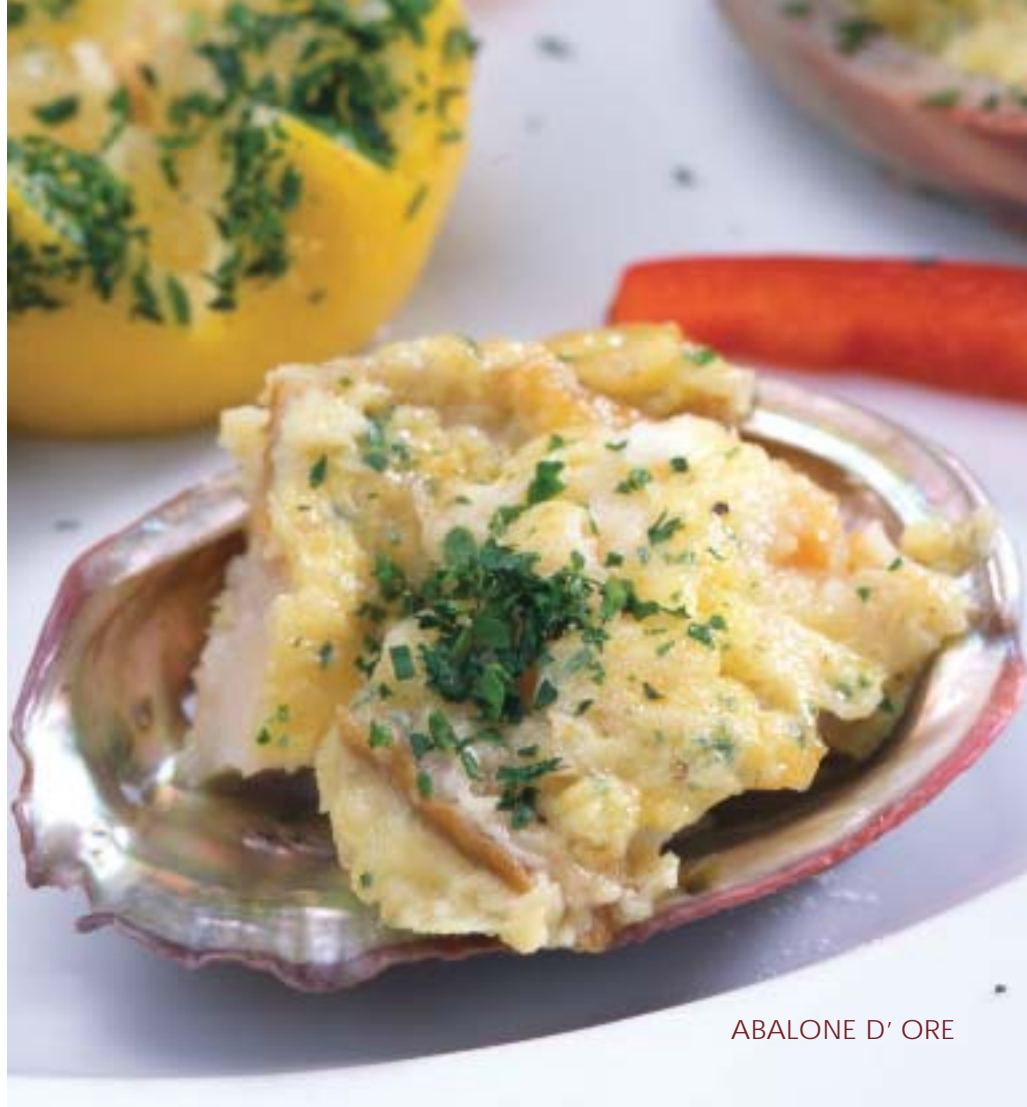
In small bowl briefly whisk the eggs with chopped parsley and pinch of salt and pepper. Rinse and pat dry the abalone steaks. Dust the steaks with flour and dip into egg wash. In a sauté pan, place the olive oil and butter and heat to medium. (*do not over-heat*).

Lift one abalone steak out of the egg wash, draining excess and place in sauté pan, making sure that the abalone is not sticking to pan (if it is, the oil is not hot enough).

Cook the abalone steaks for about 1–2 minutes on each side, as many as you can fit in the pan, taking care not to overlap the slices. **Note:** be careful not to overcook and prevent the egg coating the abalone from turning dark (they should be golden yellow on both sides).

Remove abalone to a serving platter or individual appetizer plates, sprinkle some chopped parsley on top and garnish with lemon wedges to be squeezed on top of the abalone.

Note: A simple lemon sauce consisting of butter, white wine, lemon juice and chopped parsley can be used to top the slices of cooked abalone.



ABALONE D' ORE

ABALONE CHOWDER

Recipe from Abalone Lover's Cookbook

Made with:

Abalone from The Abalone Farm,
Cayucos, CA

Ingredients:

- 1 qt. Water
- 1 tspn. Salt
- 4 Red potatoes - (large - about 2 lbs.)
- 1 lb. Abalone (raw, tenderized, cut into 1/4 inch cubes)
- 6 slices Bacon
- 1/4 cup Flour – (all purpose)
- 1/2 tspn. Salt
- 1/8 tspn. Pepper
- 1/8 tspn. Dried Thyme Leaves
- 3 cups Milk
- 1 Bay Leaf (small)
- 2 cups Half and Half
- 2 tbs. Sesame Oil

Procedure:

In a skillet, heat the oil and quickly fry the abalone cubes until golden brown, about 30 seconds and set aside.

Heat the water in a 2 quart saucepan until boiling. Add 1 tsp salt and the potatoes, return to boiling, then reduce heat and simmer until potatoes are tender about 30 minutes. Drain and cool the potatoes, then peel and cut into half inch cubes and set aside.

In a dutch oven, over medium high heat, cook the bacon until crisp, stirring occasionally. Remove with a slotted spoon and set aside. Add the onion, then cook and stir until tender, about 2 minutes.

Reduce to medium heat and stir in milk, flour, 1/2 tsp salt, pepper and thyme. Cook, stirring constantly until thickened and bubbly. Reduce heat to low, blend in the half and half, and add the potato cubes and abalone. Cook over low heat, gently stirring, for 12–13 minutes more. Garnish with sliced green onion, if desired. Serve.

ABALONE CIOPPINO

From The Abalone Farms Favorite Recipes.

Made with:

Abalone from The Abalone Farm,
Cayucos, CA

Ingredients:

1 lg. Onion
1 bunch Green Onions - (including tops, sliced)
1 Green Pepper
2 whole Cloves Garlic
1/3 cup Olive Oil
1/3 cup Parsley - (chopped)
16oz. can Stewed Tomatoes - (diced)
8 oz. can Tomato Puree
2 cups White or Red Wine
1 cup Fish Stock or Water
1/2 Bay Leaf
2 tspn. Salt
1/4 tspn. Pepper
1/8 tspn. Thyme
1 lb. Whitefish - (cubed)
1/2 lb. Abalone
1 dozen Fresh Clams or Mussels
1 lb. Fresh Prawns or Crab (optional)

Procedure:

In a dutch oven or frying pan that has a cover, sauté the onion, green onion, bell pepper, and garlic in oil (about 5 minutes).

Add parsley, tomato puree, stewed tomatoes, wine, and fish stock (or use all water) and seasonings.

Cover and simmer for one hour. Remove the garlic.

Scrub the clams or mussels to remove any sand from the shells, and arrange them in the bottom of a large pan. Rinse the abalone if they have been previously frozen. If you are using prawns cut them down the backs with kitchen scissors, wash out the sand vein, place on top of the clams. If you are using crab, crack the crab and place on top of the clams. Add the cubed fish.

Pour on the hot prepared sauce, cover and simmer until the clam shells open, 20 — 30 minutes.

Serve in large soup bowls or soup plates, with some of each shellfish in each bowl. Makes about six servings.

ABALONE MEDALLIONS

From The Abalone Farms Favorite Recipes.

Made with:

Abalone from The Abalone Farm,
Cayucos, CA

Ingredients:

1 lb. Abalone Medallions
1 cup White Flour
1 cup Butter
1/4 cup Lemon Juice

BEURRE BLANC SAUCE (See Recipe)

Procedure:

Remove abalone medallions from bag, and discard liquid.

If frozen, thoroughly thaw before separating steaks to prevent tearing.

Place flour on a plate, or sheet of wax paper.

Lightly dust the abalone steaks with flour on both sides.

Melt the butter in a sauce pan or microwave oven. Heat a large heavy gauge frying pan.

Pour approximately 1/3 cup butter into pan, and heat until it sizzles when flour is sprinkled in. Put in just enough abalone to cover the bottom of the pan (4 — 6 pieces.)

Cook over 30 seconds and turn. Repeat this procedure until all abalone are cooked.

Variations:

- ¥ Use half lemon juice, half white wine while cooking.
- ¥ Substitute corn flour, corn starch or bread crumbs instead of flour.
- ¥ Marinate abalone in lemon or lime juice for 3 — 5 minutes.
- ¥ Dust in flour, and dip in egg wash before frying.
- ¥ Omit the lemon juice from the recipe.
- ¥ Season with lemon juice and salt. Dredge through flour and pat off excess. Dip them in beaten egg and sauté quickly in hot clarified butter. (3 — 5 seconds).
- ¥ Use oil instead of butter.

BEURRE BLANC SAUCE

From The Abalone Farms Favorite Recipes.

Ingredients:

1 cup of Dry White Wine
2 tbs. of Champagne Vinegar
2 Shallots - (chopped)
1/4 cup Crème Fraiche
12 tbs. Sweet Butter

Procedure:

Combine these first three ingredients into medium saucepan and bring to a boil. Cook at low rolling boil until liquid has reduced to 1/2 cup. (about 15 minutes).

Then add in 1/4 cup Crème Fraiche and boil until the liquid reduces to 1/3 cup. With a wire whisk, briskly whisk in sweet butter until fully incorporated. Season to taste. Serve.