

HANDS-ON SAILOR

Practical solutions and techniques for the bluewater sailor



LIVING ABOARD BY BETH A. LEONARD

Cruising Without the Fridge

Even in the tropics, you can have fresh food for your passages with a little planning and careful shopping.

WHEN WE FIT OUT OUR VAN de Stadt Samoa 47, *Hawk*, back in 1998, we tried to keep her as simple as possible to minimize maintenance and expenses. Of the equipment we left off the boat, refrigeration comes as the biggest surprise to most people. But refrigeration is the single largest energy draw on most boats, and installing it almost always means reconfigur-

ing the electrical system. As a society, we've bought into the refrigerated supply chain, and we've lost much of the knowledge our forebears used to preserve food. Over the course of two circumnavigations and more than 12 years of cruising without refrigeration, we've rediscovered many of these techniques and added a few of our own. We've learned that much of what

people keep in their refrigerators doesn't need to be there, and a variety of things that last longer when refrigerated keep for a surprisingly long time at room temperature. Fresh meat and milk are the only two things that absolutely have to be refrigerated, and there are alternatives to both that are available to cruising sailors. Our experiences may convince those without re-

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FRESH FRUIT IN THE TROPICS

Fruit	Expected Shelf Life	Stowage Requirements
Apples	4 to 5 weeks	The tarter the apple, the longer it will last. Granny Smiths are widely available and last the longest. Storing with citrus causes overripening and bruising.
Citrus	4 to 5 weeks	If any mold, wash with a mild chlorine solution. Don't store with apples.
Pineapples	2 to 3 weeks	Buy when green; stow upright.
Avocado	2 weeks	Buy when green, rock hard, and without bruises.
Mangos	2 weeks	Buy when green and rock hard. Store in a separate container because ripening mangoes secrete a sticky resin.
Pears	10 to 14 days	Buy when rock hard. Wrap in tissue paper or paper towels.
Pamplemousse	10 days	Store this softball-sized, green, piney-tasting grapefruit of the Pacific as citrus.
Bananas	7 to 10 days	Buy when green. Bananas all ripen at the same time no matter what, so don't buy too many.
Melons	1 week	Buy when unripe. To test, press an end and smell; riper melons smell stronger.
Papaya	1 week	Buy when green. Use papaya grated in salad while green.
Other fruit	Less than 1 week	

FRESH VEGETABLES IN THE TROPICS

Vegetable	Expected Shelf Life	Stowage Requirements
Potatoes/yams	1 to 2 months	Remove eyes as they appear. Stowing with apples will retard sprouting; stowing with onions will encourage sprouting.
Onions	1 to 2 months	Stow uncovered, and keep dry to slow sprouting. Cooking onions keep longest.
Garlic	1 month	Buy only totally dry, totally white garlic. Green or mold spots mean it will sprout.
Winter squash	1 month	
Cabbage	1 month	Wrap in newspaper or a towel.
Beets/turnips	3 to 4 weeks	Stow intact.
Tomatoes	3 to 4 weeks	Buy when green, then wrap individually in paper towels.
Cucumber	2 to 3 weeks	English cucumbers without bruises wrapped in cellophane last longest.
Carrots	2 weeks	Stow without the tops. If rubbery, peel and soak in water to make crisp again.
Zucchini/summer squash	2 weeks	
Green pepper	2 weeks	Green ones last longest; they'll turn red and yellow as they ripen.
Iceberg lettuce	1 to 2 weeks	Remove the outer leaves if they get slimy. Cut away the stem if it starts to rot.
Romaine hearts	1 to 2 weeks	Commercially packaged hearts in plastic last longest.
Eggplant	1 week	
Cauliflower/broccoli	1 week	If broccoli wilts, soak the bottoms in water to restore.
Other veggies	Less than 1 week	

frigeration to install a smaller, less energy-hungry system or to forgo it altogether. For those with refrigeration, the ideas that follow can be used to free up precious space.

Straight from the Farm

A few basic rules will ensure that your produce lasts almost as long without refrigeration as you're used to having it last in your refrigerator at

home. For maximum life, vegetables and fruits must be purchased fresh—the fresher the better—and they must never have been refrigerated. Getting your vegetables and fruits from a local produce market, farmer's market, farm stand, or, better yet, someone with a garden who'll let you pick your own will double the life of the produce over what you'd get if you purchased it from a

supermarket. Select the most recently picked pieces of produce, ones without any bruising or discoloration. Once on the boat, stow produce in sanitized areas and keep it dry, well ventilated, and out of the light. Collapsible milk crates or plastic crates, which provide good airflow and can be thoroughly sanitized with bleach, work well. We pad ours with towels to keep produce from bruising.

Check produce every day, and remove any fruits or vegetables that are bruised, overripe, or starting to mold.

Three weeks is about the longest most crews will be on passage during a tropical circumnavigation. Buying the freshest possible unrefrigerated produce and following the suggestions found in the charts "Fresh Vegetables in the Tropics" and "Fresh Fruits

PRODUCTS WITH LONG SHELF LIVES

Category	Products	Expected Shelf Life	Notes
Milk	Ultra-heat-treated milk (whole or skim), dried milk (whole or skim)	A minimum of several months. Use within 24 hours once it's mixed or opened.	UHT milk usually comes in liter packages. We prefer the 250-milliliter size when we can get it because that's just enough for two bowls of cereal or several cups of coffee. Dried milk is much less expensive than UHT and can be used for cooking, making yogurt, etc.
Juice	UHT juice, glass-packed juice	A minimum of several months. Use within 2 to 3 days once it's opened.	UHT juice lasts the longest, and the empty packaging is the easiest to stow when garbage facilities are few and far between.
Butter/margarine	Canned butter or margarine	A minimum of several months; use within a few days of opening.	Canned butter tastes as good as fresh and can be purchased on many tropical islands. Canned margarine tastes oily; we much prefer the butter.
Yogurt	UHT yogurt, home-made yogurt	A minimum of a month for UHT. Use immediately once it's made or opened.	UHT yogurt can be purchased on many tropical islands. Kits for homemade yogurt can be purchased in developed countries, or get directions off the Internet and use a thermos, yogurt culture, and dried milk.
Meat, fish, and one-pot meals	Canned meats and fish; canned soups, stews, etc.; freeze-dried soups, stews, etc.; pressure-cooker canned meat, fish, and one-pot meals	Indefinitely	Brinkman Turkey Farms (www.brinkmanfarms.com) supplies canned turkey, beef, and chicken. The Internet lists many vendors for freeze-dried foods. Sample food items before buying in bulk. For information on pressure-cooker canning, go to Beth and Evans' website (www.bethandevans.com); click on "Articles," then "Article Downloads."
Fruits and vegetables	Canned fruit and vegetables, dried fruit and vegetables, pressure-cooker canned vegetables	Indefinitely	American Harvest and Mister Coffee make inexpensive dehydrators for preparing your own dried fruits and vegetables. For information on pressure-cooker canning, see above.

in the Tropics" will ensure a fresh selection throughout a passage of up to a month. Note that the times shown in the tables are for the tropics; in the temperate or cooler high latitudes, produce will keep up to twice as long. Previously refrigerated fruits and vegetables will last at most about half as long as what's listed in the tables.

We don't treat fruits and vegetables with a fruit dip. Most produce keeps best when it's left unwashed. In our experience, vegetable-storage bags don't extend the life of fruits and veggies outside of a refrigerator unless the pro-

duce is perfectly dry when it goes into the bag. If there's any dampness or if it's humid, condensation will form that will lead to rot.

Many cruisers sprout various types of beans and seeds to add some greens to their diet after the lettuce is long gone. Sprouting is easy to do and takes a minimum of equipment and supplies. Amanda Swan-Neal's *The Essential Galley Companion* provides detailed information on sprouting everything from alfalfa to chickpeas.

No Refrigeration Needed

When it comes to condiments, spreads, meat, and dairy products, mayonnaise is perhaps the first product that deserves a mention. It will keep quite well as long as nothing's mixed with it.

(See the chart "Store at Room Temperature" on the facing page.) We've kept mayonnaise for months simply by making sure it remains uncontaminated.

Dairy products other than fresh milk do surprisingly well unrefrigerated. Semi-soft cheeses such as mozzarella will get very soft, but they usually won't spoil or mold until opened. Hard cheeses vacuum sealed in plastic or packaged in wax keep indefinitely. If the only thing available is unpackaged cheese, coat it lightly in vinegar, wrap it in aluminum foil, and store it in a plastic bag. This retards mold on hard cheese for a week or more. Regular commercial yogurt purchased out of the dairy case lasts a surprising amount of time when unrefrigerated. We keep un-

opened containers for three weeks or more in the bilge, even in the tropics. We prefer single-serving containers; large open containers grow mold after a couple of days.

To get the freshest eggs, go to a farmer or a farmer's market. Eggs go bad when the air sac inside the egg settles against the shell, eventually causing the shell to become porous. Turning the eggs every other day prevents this. We stow them in plastic or foam egg cartons and turn the whole carton. After two weeks in tropical heat, it will be hard to separate the yolks from the whites, and the consistency will be a bit soupy, but they still taste fine. We've kept farm-fresh eggs for over two months this way. If the only eggs you can get have already been refrigerated, turning them daily keeps them from spoiling

Cruising World Web Extra: See "Forget the Fridge" on page 12 for a link to Beth A. Leonard's printable food-storage tables.

STORE AT ROOM TEMPERATURE

Category	Products	Expected Shelf Life	Notes
Condiments	Ketchup, mustard, relish, mayonnaise, oil-based salad dressing, vinegar, oil of all types	A minimum of several months	Mayonnaise keeps indefinitely as long as no bacteria get into the container. Always use a clean spoon to serve it, or buy it in squeeze bottles or in single-serving packets.
Spreads	Jelly and jam, peanut butter, honey, maple syrup, molasses	A minimum of 2 to 4 weeks	Peanut butter, even all-natural and without preservatives, keeps for months. Small containers prevent spoilage, particularly of jelly and jam and maple syrup, which molds after a few weeks. Honey sometimes crystallizes; putting the container in boiling water for 10 minutes will liquefy it.
Dairy products	Butter (margarine), cheese, yogurt, sour cream	A minimum of 2 to 4 weeks	Keep these in the coolest place on the boat, usually in the bilge. Butter does better than poor-quality margarine, which turns soupy in a week. Store in plastic container because oil leaches through other packaging. Purchase small, sealed plastic packages of cheese. Harder cheeses keep longer.
Meat and eggs	Fresh meat; packaged cold cuts; dried salami, pepperoni, etc., in links; eggs	Up to 1 week for fresh meat if deep-frozen; 1 to 2 weeks for cold cuts; 2 months or more for eggs and for dried meats	Buy fresh meat from a gourmet butcher and ask them to vacuum-bag and deep-freeze it. Purchase small, sealed plastic packages of cold cuts. Vacuum-sealed salami-type meats keep almost as long as dried meats sold in links. Buy eggs fresh, unwashed, and unrefrigerated; turn them every other day, and stow them in plastic or foam cartons.
Other	Yeast, bread	2 to 4 months for yeast; 1 week for bread	Jars of yeast don't keep once they're opened unless they're refrigerated; buy individual foil packages and check the expiration dates. Lightly coat whole-grain bread in vinegar and wrap in aluminum foil. After a week at sea, most cruisers bake their own.

for at least 10 days.

Meat keeps longest if bought fresh from a gourmet butcher shop that will vacuum-bag (Cryovac) and deep-freeze it. Bring an insulated bag to the butcher to take the meat back to the boat frozen. Vacuum-bagged, deep-frozen meat lasts for up to a week in the tropics in an insulated bag with a block of ice.

Alternatives to Fresh

Though few ocean passages last longer than three weeks, even when coastal cruising, we often have to go significantly longer than that between provisioning ports for certain fresh products, such as butter and yogurt, which are only available in places where there's a local dairy industry. On many small tropical islands, there'll be little

in the way of refrigerated or frozen foods available; almost everything will be shelf stable or canned. But there are a number of alternatives for preserving the foods we like to bring along for much longer periods. (See the chart "Products with Long Shelf Lives" on the facing page.)

Ultra-heat-treated products are sterilized using very high heat. The contents keep for two to six months, depending on the expiration date shown on the packaging. Outside of the United States, UHT milk and juice can be found in just about every grocery store. On tropical islands, UHT yogurt and UHT tomato sauce are also common.

Canned goods—corned beef, hot dogs, pork and beans, and baked beans—are common in many stores in less developed

countries, but the quality varies tremendously. We prefer to can our own meat, soups, and stews using a pressure cooker. (See "Feasts Under Glass," February 2004.). Similarly, many cruisers prefer to use a dehydrator to dry their own vegetables and fruits. A dehydrator takes a good deal of electricity, and pressure-cooker canning takes a good deal of propane, so both are best done while in a developed port with access to shore power and propane supplies.

Our 1-quart canning jars hold too much for one meal, as do many commercially packaged cans of soups or stews. It's possible to keep the leftovers from spoiling for a couple of days by bringing the food to a hard boil once every 24 hours in the tropics. When we open a quart jar of chicken, pork, or beef, we eat the

meat straight the first night; on the following day, we make any leftovers into a curry or a stew with strong flavorings and simmer it for an hour or more before eating.

These tips and tricks, along with such galley skills as sprouting, bread baking, pressure-cooker canning, yogurt-making, and drying foods, make it possible to live quite comfortably without a refrigerator aboard. The only thing we have to do without most of the time is ice and cold drinks, a sacrifice we're willing to make—at least for now—to avoid the cost and complexity of adding refrigeration.

To keep abreast of the travels of Beth A. Leonard and Evans Starzinger up the Atlantic, visit Beth and Evans' website (www.bethandevans.com).