

SHELF LIFE STUDIES

The **objective** of a shelf life study is to determine how long a food product remains fresh and safe to consume.

Determining Factors:

1. At what **temperature** will the product be sold?
 - a. If samples will be sold refrigerated, then tests will be run refrigerated. (Page 2)
 - b. If samples will be sold frozen, then tests will be run frozen (Page 2)
 - c. If samples will be stored at room temperature then there are two options, ambient (Page 3) and accelerated (Page 4)
2. What length of **time** should the shelf life study be performed?
 - a. This is product dependent. What is the goal of your product?
 - b. What is the shelf life of similar products on the market?
 - c. Do you want to use preservatives?
3. What **parameters** should be tested?
 - a. What is the limiting factor in your product? i.e. mold growth, rancidity, flavor, texture?
 - b. Has your product ever been tested before?
4. Can you **stop** the test early?
 - a. Yes, you can stop testing whenever you like and no further charges will be assessed.

Starting a Shelf Life Study:

1. How do I get **started**?
 - a. Do you have your final packaging in place?
 - i. It is important to test the product in the packaging it will be marketed in, as it will give the most accurate shelf life results.
 - b. Do you have your final formula in production?
 - i. Shelf life studies may reveal that changes are required in the product formula or packaging to create a more manageable shelf life for the product.
 - c. If yes to a and b, contact Midwest Laboratories to set up a shelf life study. (Contact page)
2. How many **samples** do you need to send in?
 - a. Typically, we need an individual sample, in the packaging you plan to distribute the product in, for each time point you want a sample analyzed plus an additional sample for initial screening.
 - i. For example, if you were running a 12 month room temperature study, where we pull one sample once a month, we would need 13 samples, one for month 0, then one for each proceeding month.

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Refrigerated Samples

This study will determine how long a sample will remain safe to consume while at refrigerated conditions. The frequency of the test is dependent on the product. Typically a sample will be pulled 1-2 times a week and can be tested for some or all of the following:

Testing

Test	Frequency	Cost	Total Cost
Initial Food Screen	1 time, at the beginning of study	\$60	Dependent on number of times pulled
Plate Count	1-2 times a week	\$15/analysis	
Yeast/Mold	1-2 times a week	\$20/analysis	
Sensory (color, aroma, texture)	1-2 times a week	\$12.50/analysis	

Additional tests can be performed upon request for an additional charge.

Frozen Samples

This study will determine how long samples stored under this condition may remain acceptable under sensory evaluation and rancidity.

Testing

Test	Frequency	Cost	Total Cost
Sensory (color, aroma, texture)	1-2 times a month	\$12.50/analysis	Dependent on number of times pulled
TBA (rancidity)	Every month or every other month	\$60/analysis	

Additional tests can be performed upon request for an additional charge.

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Ambient Room Temperature

Room temperature studies have the ability to assess changes in moisture content, water activity, sensory characteristics, and microbiological growth.

Test Protocols:

Typically, 12 Month Shelf Life (Ambient Temperature and Relative Humidity) for some or all of the following tests performed. Total Samples: 13.

Testing

Test	Frequency	Cost	Total Cost
Water Activity	1 per month – Total of 13	\$25/analysis	\$325
Moisture	1 per month – Total of 13	\$15/analysis	\$195
Plate Count	1 per month – Total of 13	\$15/analysis	\$195
Yeast/Mold	1 per month – Total of 13	\$20/analysis	\$260
Sensory (color, aroma, texture)	1 per month – Total of 13	\$12.50/analysis	\$162.50

Additional tests can be performed upon request for an additional charge.

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Accelerated

Accelerated studies will assess changes in moisture content, water activity, oxidation of fat, and sensory characteristics. It can **NOT** be used to test for microbial growth.

Test Protocols:

Typically, 12 Week Accelerated Shelf Life (Temperature: 40 deg C/Relative Humidity: 75%) for some or all of the following tests. Total Samples: 13.

Testing

Test	Frequency	Cost	Total Cost
Water Activity	1 per week – Total of 13	\$25/analysis	\$325
Moisture (vacuum loss on drying 100 deg C)	1 per week – Total of 13	\$15/analysis	\$195
Sensory (color, aroma, texture)	1 per week – Total of 13	\$12.50/analysis	\$162.50
Peroxide	1 per week- Total of 13	\$25/ analysis	\$325

Additional tests can be performed upon request for an additional charge.

Shelf Life Handling

1. A shelf life handling fee will be included with all shelf life testing, but only one shelf life fee will be charged per project.
 - a. 1 to 6 time points \$200.00 + analytical tests
 - b. 6 to 12 time points \$300.00 + analytical tests
 - c. More than 12 time points \$400.00 + analytical tests
2. Products can be returned to client for additional testing.



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Contact Information

Erin Smith, M.S.
Nutrition Specialist
Midwest Laboratories
13611 B Street
Omaha, NE 68022
erin@midwestlabs.com
402-829-9845

SueAnn Seitz, M.S.
Client Service Representative
Midwest Laboratories
13611 B Street
Omaha, NE 68022
sueann@midwestlabs.com
402-829-9892

Nichole Kern
Food Analyst 2
Midwest Laboratories
13611 B Street
Omaha, NE 68022
nkern@midwestlabs.com
402-829-9845