

# Food Preservation

## Preserving Apples Tips



### Apple Yields

- Bushel: 42 to 48 pounds, 18 to 20 quarts of apple slices
- 1 pound: 4 small, 3 medium, or 2 large apples
- 2 medium apples: 1 cup grated apples
- 4-quart basket: holds 5 pounds of apples
- 1 pound: 3 cups diced or 2  $\frac{3}{4}$  cups pared and sliced
- 9-inch pie: 5 to 7 medium apples

### Recipes

Choose scientifically tested preservation recipes rather than recipes found online, such as on Pinterest or other social media, which may be unsafe. Recipes from trusted sources have been tested for many different factors to prevent potentially deadly bacteria from forming.

#### Resources:

- [USDA Guide to Home Canning](#)
- [University Cooperative Extensions](#)
- [The National Center for Home Food Preservation](#)
- [So Easy to Preserve](#), University of Georgia Extension

Some commercial canning companies also provide scientifically tested recipes.

### Apple Peels

#### For applesauce or apple butter

Tested canning recipes recommend using peeled apples for applesauce or apple butter. Leaving the peel on the apple could alter processing times and affect food safety.

#### Natural apple pectin

Pectin is found in apple skins and cores. Apples with skins can be processed, but must be stored in the freezer or refrigerator. Natural pectin does not replace commercially available liquid pectin or pectin powder.

#### Freezing unpeeled apples

The University of Nebraska recommends freezing apple slices on a tray, like a dry pack, for unpeeled apples. Slice apples to desired thickness, treat for browning, and freeze in a single layer on a metal baking tray. Transfer frozen slices to a freezer bag and measure out as needed for recipes.

Frozen apples are best in cooked apple dishes. Use within eight months for best quality.

### Commercial Pectin

#### Pectin packets

Recipes often use one standard commercial packet or box of pectin, which is typically 1.75 ounces.

#### Types of pectin

Commercially purchased pectin is available in both liquid and powder forms, which are not interchangeable. Recipes are specific to the type of pectin used. Always confirm if the recipe calls for powdered or liquid pectin.

Liquid pectin is used to cook fruit and sugar mixtures after cooking. Powdered pectin is added to unheated fruit.

Some commercial companies, such as Ball, also sell pectin in bulk. If a standard box of pectin is not used, determine how much pectin to add by going to the [Pectin Calculator](#) site.

### Sugar, Sweetener, and Syrup Packs

#### Honey dip

The National Center for Home and Food Preservation recommends mixing  $\frac{1}{2}$  cup sugar with 1  $\frac{1}{2}$  cups boiling water. Cool to lukewarm and add  $\frac{1}{2}$  cup honey. Place fruit in the dip and soak for 3 to 5 minutes. Remove, drain well, and place on dryer trays.

#### Sweeteners

Stevia is heat-stable and safe to use for canning, but the resulting apple texture and flavor will be different compared to canning apples in light sugar syrup.

Oregon State University published that it may be possible to use cooking liquid or water, and then sweeten it with a sugar substitute after opening.

Penn State was referenced, saying that “stevia-based sweeteners are heat stable and may be used in canning fruit.”

#### Types of syrup

The USDA Canning Guide recommends using a medium syrup with 30% sugar for sweet apples and a heavy syrup with 40% sugar for tart apples. Most recipes yield nine pints or seven quarts.

Add ½ or ⅔ cup of syrup per pint, or 1 cup of syrup per quart. To make a small batch of heavy syrup with 40% sugar, add 2 ¾ cups of sugar to 4 cups of water to make 5 ⅓ cups of syrup.

### **Adding spices to the sugar pack**

Follow a tested recipe, and add spices, such as cinnamon, after thawing and before cooking.

### **Cider and Juice**

Cider is raw apple juice that has not undergone a filtration process to remove coarse particles of pulp or sediment.

### **Mother of Vinegar**

In apple cider vinegar, a jelly-like layer called the “mother of vinegar” forms naturally during fermentation. A mix of yeast and bacteria, the mother counts as a probiotic; however, its importance to health has not been supported by enough scientifically sound research.

### **Apple Butter**

#### **Crockpot processing**

Slow cookers are a safe option for making apple butter when using a tested recipe for canning and following directions carefully; however, the finished product must be stored in the refrigerator or freezer.

#### **Consistency**

Straining cooked apples through a colander or processing them through a food mill for apple butter helps achieve the proper canning consistency. Processing times may differ when the consistency of apple pieces changes, affecting food safety. Freeze or refrigerate the product if not following a tested recipe exactly.

### **Browning**

#### **Using a pretreatment**

Pretreatment can help to prevent enzymatic browning, but it is not necessary from a food safety perspective.

#### **Grape juice**

Due to its acidic nature, grape juice works in a pinch to prevent enzymatic browning but may cause some color and flavor changes in apples. Using white grape juice may help prevent color change.

#### **Non-browning apples**

The USDA and FDA recently approved a genetically engineered, non-browning apple called the Arctic® Apple, which does not brown after being cut.

### **Asthma and sodium bisulfite**

The National Center for Home and Food Preservation recommends sulfuring or using a sulfite dip as the best pretreatment for long-term dried fruit storage. Alternative pretreatments provide shorter-term storage options.

However, pretreatment with sodium bisulfite can leave sulfites in food, causing asthmatic reactions in a small portion of the asthmatic population.

### **Processing**

#### **Processing times**

Follow tested recipes exactly, especially their processing times. Over-processing may reduce the product’s quality and cause the pectin in jelly or jam to break down, leading to a runny, undesirable product.

Extending processing time beyond a recipe’s recommendation does not replace the need to sterilize jars. To save time, sterilize jars in the boiling-water bath while preparing the jam or jelly ingredients.

#### **Splatters and spills**

Reliable recipes recommend bringing jelly or jam to a boil, removing the hot mixture from the heat, and pouring it immediately into sterile jars.

Be sure to remove the mixture from the heat after boiling to prevent splattering, which can cause burns.

### **Air Bubbles**

As long as the jar is properly sealed and processed, and bubbles are not moving inside the jar after processing, the product is still safe.

Gently running a clean plastic knife through the jarred but not yet sealed processed product can help to release air bubbles trapped inside. Avoid using a table knife to release air bubbles, as it may scratch, crack, or weaken the glass jar.

### **Jars, Lids, and Rings**

#### **Storing and inspecting**

After processing and cooling, rings can be removed from sealed jars before storing canned products. For best quality, store canned foods in a cool, dark place and use within one year.

Examine canned products as often as desired. Check for signs of spoilage, such as leaking, rising air bubbles inside the jar, unnatural color, or foul smell.

A swollen lid indicates the presence of yeast or spoilage bacteria producing gas. Discard immediately.

## One-piece lids

If not intended for canning, one-piece stainless-steel lids with silicone rings are typically fine to use for refrigerator and freezer storage. Packaging often indicates if the lids are suitable for freezing, but always check with the manufacturer to be sure.

## Dehydrating

### Choosing a dehydrator

There are many different types of dehydrators, including vertical and horizontal airflow, with many features. Read more about what to look for in a dehydrator from the [National Center for Home Food Preservation](#).

### Drying temperatures

Dehydrating requires maintaining a constant temperature between 120 and 140 F. If the oven cannot reach a low enough temperature, apples are at risk of cooking and scorching rather than drying.

Ovens with a “keep warm” option may work for drying, but use an oven thermometer to check the oven’s actual temperature to see if it can maintain a temperature of around 120 to 140 F.

### Dehydrating tips

It is better to over-dry than under-dry. When using the dehydrator for the first time, check on the apples occasionally. Apples should be pliable and not stick together when folded.

In round dehydrators, the rack on the bottom, or closest to the heat, will dry apples faster than the top rack.

### Drying methods

The only scientifically tested and recommended methods for drying food are using an electric dehydrator, oven drying, sun drying in the correct conditions, air drying, or microwave drying, which is especially good for drying herbs and leafy vegetables.

Alternate drying methods found online or suggested by popular media may be unsafe and should be avoided.

## Pressure Gauge Testing

### Testing dial gauges

Many county Extension offices test dial gauges to serve residents. Call a local Extension office to schedule an appointment or learn about testing events. Visit the University of Illinois Extension’s website to find testing locations: [go.illinois.edu/PressureCannerTesting](http://go.illinois.edu/PressureCannerTesting).

## References

[So Easy to Preserve](#), University of Georgia Extension

[Complete Guide to Home Canning](#), USDA

[The Ball Blue Book](#)

[National Center for Home Food Preservation](#), University of Georgia

[What’s Cooking with Mary Liz Wright](#), YouTube.com

[Cottage Food](#), University of Illinois Extension

[Food Preservation](#), University of Illinois Extension

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