# EDIBLE FLOWERS

## PRODUCE SAFETY REGULATIONS FOR EDIBLE FLOWERS

Edible flowers are considered produce that is commonly consumed raw under the Produce Safety Rule. Therefore, edible flowers must comply with the standards for growing, harvesting, packing and holding of produce for human consumption within the Produce Safety Rule.

To determine if your edible flower operation is covered under the Produce Safety Rule regulations, determine your produce sales on average over the past three years, have an understanding of if you sell a majority of your produce to wholesalers/distributors or direct to the consumer, and then utilize the FDA Coverage and Exemptions Flow Chart.

The Produce Safety Rule is a regulation that serves to implement the Food Safety and Modernization Act. The Produce Safety Rule regulations developed a "farm to fork" approach to food safety with a focus on preventing the spread of foodborne illness causing pathogens in fresh fruit and vegetable production.

## EDIBLE FLOWER PRODUCTION AND FOOD SAFETY

Edible flowers can grow on annuals, biennials, perennials, trees, shrubs, and vines and there are many uses for them, making them a niche commodity to produce. When producing, it is important to implement food safety practices to prevent the spread of foodborne illness causing pathogens. For maximum flavor, harvest flowers at their peak. When serving, avoid pollen, which can affect the flavor and may cause an allergic reaction, by removing all parts of the flower except the petals. Also remove the bitter white base of the petals from certain flowers when serving.

## USING EDIBLE FLOWERS

Edible flowers can be used raw as garnish, frozen into ice cubes, or dried for future use. Raw use and drying/dehydrating of whole edible flowers or petals is within the Produce Safety Rule regulations. Edible flowers can also be candied; made into jellies, jams, teas, or wines; included in vinegars, marinades, or salad dressings; and more. Reach out to the NCDA&CS Food Program for more information on processing and manufacturing regulations at 984-236-4820.

## LEARN MORE ABOUT THE PRODUCE SAFETY RULE

Become more familiar with the Produce Safety Rule regulations by attending a Produce Safety Alliance Grower Training Course offered in collaboration with NC State Extension. This is a one-day course that teaches the importance of produce safety practices, as well as the skills needed to implement those practices on your farm.

After completing the Produce Safety Alliance Grower Training Course, request a free educational On-Farm Readiness Review where someone from the NCDA&CS Produce Safety Program and someone from NC State Extension plan a visit to your farm where they will walk through your farm food safety practices with you.

## NCDA&CS PRODUCE SAFETY PROGRAM

The Produce Safety Program within the North Carolina Department of Agriculture and Consumer Services is here to help you understand the importance of implementing produce safety practices when producing edible flowers.

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# EDIBLE FLOWER PRODUCTION AND FOOD SAFETY

## EMPLOYEE HEALTH AND HYGIENE

It is important that employees involved in edible flower production arrive to work clean and wearing clean clothes and footwear, remove or cover hand jewelry that can't be easily cleaned, do not eat, chew gum, or smoke around the flowers, notify their supervisor if they are ill, wash their hands properly before starting or returning to work, before putting on gloves, before and after eating and/or smoking, after using the toilet, after touching animals or animal waste, and any other instance where their hands might have become contaminated.

## AVOID CONTAMINATION FROM ANIMALS AND PESTS

Domesticated and wild animals, as well as pests, are a food safety concern because they can carry human pathogens in their excreta and they can spread pathogens around as they move. Therefore, implement practices to keep wild animals and pests out of the areas where you are growing and packing edible flowers and do not harvest any edible flowers that may have been contaminated by animal excreta. To do so, monitor the growing and packing areas for animals and for signs of animals, such as tracks or excreta, throughout the growing season, before harvesting, and before packing.

## WATER SAFETY AND QUALITY

All agricultural water must be safe and of adequate sanitary quality for its intended use to prevent the contamination of the edible flowers from the water being used. For example, pre-harvest agricultural water used for irrigation, must be assessed annually to determine if that water is likely to introduce known or reasonably foreseeable hazards into or onto covered produce. Additionally, harvest and post-harvest agricultural water used for hand washing, for cleaning and sanitizing tools and containers that the edible flowers may contact, and for water the cut flowers are placed in must have zero generic *E. coli* per 100mL sample.

## HARVEST PRACTICES

Growing edible flowers is similar to growing flowers for ornamental purposes, however, with edible flowers it is important that those harvesting the edible flowers practice good health and hygiene and avoid allowing the edible flowers from coming in contact with dirt or soil, and it is also important that harvest machinery and equipment is made of easily cleanable materials that are cleaned and sanitized as frequently as reasonably necessary to protect against contamination. Examples of harvest practices to avoid include placing harvest shears in the ground and laying cut flowers down on the soil after they've been harvested.

## CLEANING AND SANITATION

Cleaning is the physical removal of dirt, debris, and soil and can be done either using soap and water or by simply using a brush or air without the introduction of water. All surfaces should be cleaned when they become visibly dirty. Sanitation is the reduction of microorganisms to a safe level using an approved sanitizer according to the label instructions. Sanitizing is most effective when done to clean surfaces. You must inspect, maintain, and clean and, when reasonably necessary and appropriate, sanitize all food contact surfaces as frequently as reasonably necessary to protect against contamination. Food contact surfaces are items that come in direct contact with the edible flowers.

## PACKING AND STORING

When packaging edible flowers, select food-packing material that is cleanable or designed for single use and is unlikely to support the growth or transfer of bacteria. Examples of reusable food-packing materials used for edible flowers may include buckets, cups, and vases that can be cleaned, sanitized, and used again. And examples of single use food-packing materials used for edible flowers may include clamshells, plastic bags, or other containers that can retain some humidity to keep the flowers from wilting, that can only be used once and then discarded. If your operation is a u-pick edible flower farm, ensure cups or buckets are used once or thoroughly cleaned and sanitized between uses.

## CHOOSING EDIBLE FLOWERS WISELY

Not all flowers are edible! Reference NC State Extension's Choosing and Using Edible Flowers Guide at: http://content.ces.ncsu.edu/choosing-and-using-edible-flowers-ag-790.pdf. NC State Extension also has an extensive list of poisonous plants, at: plants.ces.ncsu.edu/plants/category/poisonous plants. Additional information can be found through University of Minnesota Extension at: https://extension.umn.edu/ flowers/edible-flowers and PennState Extension at: https://extension. psu.edu/a-consumers-guide-to-edible-flowers.

## PROCESSING ACTIVITIES

Drying/dehydrating of whole edible flowers or petals falls under farm activities that must meet the regulations within the Produce Safety Rule. However, any cutting, slicing, grinding, spice blending, marinating, tincture formation, capsule formation, etc. of edible flowers is considered processing that must meet the regulations within the Current Good Manufacturing Practice, Hazard Analysis, and Risk-Based Preventive Controls for Human Food. Reach out to the NCDA&CS Food Program at 984-236-4820 for more information on processing.