

Ensuring Food Safety in the Vineyard: Table Grapes



Introduction

Grapes must be unadulterated and safe for consumption. The Food Safety Modernization Act (FSMA), signed into law in 2011, *focuses on the reduction and prevention* of food safety risks, and encompasses the entire food chain. FSMA includes seven major rules, recognizing that food safety is a shared responsibility. The FSMA Produce Safety Rule provides guidance to growers on standards for the safe growing, harvesting, packing, and holding of fruits and vegetables grown for human consumption. Fresh table grapes are considered covered produce within the FSMA Produce Safety Rule [§112.1(b)(1)]*. Covered produce is any fruit and vegetable that is typically eaten raw, which includes table grapes [§112.2]. Although some farms are eligible for exemption from the FSMA Produce Safety Rule based on commodities grown, size of operation, or processing activities, this document highlights the FSMA Produce Safety Rules for Full Compliance Vineyards.

The FSMA Produce Safety Rule contains regulations that focus on: worker health, hygiene, and training; soil amendments; control of wildlife, domestic animals and land use; pre- and post-harvest water quality; post-harvest product handling; cleaning and sanitation; and record keeping. In this publication, topic areas are divided into worker training, pre-harvest, harvest and post-harvest activities, records and visitors and u-pick customers.

Worker Health, Hygiene and Training

Personnel who handle grapes during growing, harvesting, packing, and holding must use hygienic practices to the extent necessary to protect against contamination. Hands must be washed before starting work, before putting gloves, handling grapes, upon return to the work station after any break or other absence from the work station, eating, smoking, as soon as practical after touching animals or any waste of animal origin, after using the toilet, or at any other time when hands may have become contaminated in a manner that would lead to contamination of the grapes with known or foreseeable hazards [§112.32((b)(3)]. The recommended way to wash hands is for at least 20 seconds. Personnel must wash hands thoroughly with soap and running water, and dry hands thoroughly using with a single-use towel, electric hand-dryers, or other adequate hand drying device [§112.32(b)(3) and §112.44(a)]. A handwashing station should be within ¼ mile or within a five-minute drive with transportation [29 CFR §1910.110 et. seq.]. Clothes worn in the vineyard should be clean because dirty clothes, boots, shoes, or gloves can indirectly contaminate the crop. All workers should wear some form of footwear. While handling the grapes, hand jewelry that cannot be adequately cleaned and sanitized must be removed or covered [§112.32(b)(5)].

Personnel that show signs and symptoms of illness such as nausea, vomiting, diarrhea, jaundice (yellow skin or eyes) or fever must be excluded or reassigned to a task that doesn't lead to the contamination of the grapes or food contact surfaces with microorganisms of public health significance [§112.31]. This includes those with lesions containing pus (such as a boil or infected wound that is open or draining) that cannot be bandaged and/or covered to prevent potential contamination. Personnel with any reportable diagnosis such as Norovirus, Hepatitis A, Shigella, *Typhoid fever*, *Salmonella*, *Shiga Toxin-producing Escherichia coli* should not be in contact with the grapes or food contact surfaces [FDA Food Code 2017].



Personnel must be trained annually on personal hygiene, and safety practices that are applicable to the employee's job responsibilities [§112.22(a)(1-3) and §112.31(a)]. Training must include information on how to recognize symptoms of a health condition reasonably likely to result in contamination of grapes or food contact surfaces with microorganisms of public health significance. Other trainings must include how and when to wash hands; proper protection of open and/or infected wounds; when to stay home if sick; and when warranted (e.g. worker is not contagious) to ask for a job reassignment that does not involve handling produce or food contact surfaces, such as mowing, weeding, repair work and equipment maintenance (§112.32). Records must be kept that document required training of personnel, including the dates, topics covered, and participants (§112.30). Under the new FSMA aligned harmonized GAPs guidelines, records must be held for a minimum of two years.

What FSMA Produce Rule Says

§112.21(a): All personnel including temporary, part time, seasonal and contracted personnel) who handle covered produce or food contact surfaces, or who are engaged in the supervision thereof, must receive adequate training, as appropriate to the person's duties, upon hiring, and periodically thereafter, at least once annually.

My Table Grape Employee Training Checklist

- ✓ We train all workers on food safety policies and document all employee training [§112.30(b)].
- ✓ We train everyone in proper handwashing techniques and include how-to handwashing signs in restrooms.
- ✓ We provide one toilet facility and one handwashing station for every 20 workers within ¼ mile or five-minute drive if a vehicle is present according to The Occupational Safety and Health Administration (OSHA) (29 CFR §1910.110 et.seq.).

Visitors and U-Pick Customers in the Vineyard

Vineyards may have additional food safety issues when allowing visitors to harvest table grapes. Visitors should be made aware of the vineyard's food safety policies and procedures [§112.33(a)] through signage or by providing handouts. Visitors should wash their hands before picking table grapes. Thus, the vineyard must have toilet and handwashing stations at easily accessible locations for visitors [§112.33 (b)]. Each handwashing station should have soap, running water, a catch basin for dirty water and be equipped with a single-use towel, electric hand-dryers, or other adequate hand drying device [§112.130]. Under the new FSMA aligned harmonized GAPs guidelines, instructions on how to properly wash hands should be posted.

If harvesting containers are provided by the grower it is recommended to clean and sanitize them between uses, or line containers with single use, food-grade bags. It is recommended that areas harvested by customers should not be used for any other type of sale as customers may inadvertently introduce harmful pathogens, which could contaminate the grapes. In addition, areas harvested for multiple purposes reduces traceability.

What FSMA Produce Rule Says

§112.33(a) You must make visitors aware of policies and procedures to protect covered produce and food contact surfaces from contamination by people and take all steps reasonably necessary to ensure that visitors comply with such policies and procedures. (b) You must make toilet and hand-washing facilities accessible to visitors.

My Table Grape Visitor and U-Pick Customer Checklist

- ✓ We make visitors aware of food safety policies and procedures on our farm [§112.33(a)].
- ✓ We provide toilet and handwashing stations for visitors and u-pick customers [§112.33(b)].
- ✓ We supply clean harvesting containers to our u-pick customers [§112.121 and §112.123(d)(1)].

Pre-harvest Risk Assessment and Food Safety in the Vineyard

Becoming familiar with the routes of grapes contamination in your vineyard is an essential step to minimize food safety risks. Assess risks in your vineyard during the off-season to identify hazards. Workers, soil amendments, wild and domestic animals, tools and equipment as well as water, are all possible points of contamination. Before harvest, all workers must be trained and understand how to identify if the grapes were contaminated and when the grapes should not be harvested for fresh market sales [§112.112]. Grapes that are on the ground cannot be distributed for fresh market consumption (§112.114).

Biological Soil Amendments

Untreated (raw) biological soil amendments of animal origin, such as manure, that are used close to harvest time can be a source of grape contamination. If untreated biological soil amendments of animal origin are used, untreated soil amendments of animal origin can be applied to the base of the vines when the table grapes are present as long as there is no contact between the and untreated soil amendments of animal origin during and after application. Untreated biological soil amendments of animal origin can be carried on hands, shoes, equipment, tires, tools, or through the air. Maximizing the time between the date of manure application and when table grapes are harvested is considered a best practice. Selecting treated soil amendments, such as compost, can reduce the risks associated with the use of untreated biological soil amendments of animal origin in the vineyard. Treated biological soil amendments of animal origin, such as compost, must be processed by a scientifically valid method and documented (even if it's from a third party) [§112.60].

What FSMA Produce Rule Says

§112.60 (b) For any biological soil amendment of animal origin you use, you must establish and keep the following records: (1) For a treated biological soil amendment of animal origin you receive from a third party, documentation (such as a Certificate of Conformance) at least annually that: (i) The process used to treat the biological soil amendment of animal origin is a scientifically valid process that has been carried out with appropriate process monitoring; and (ii) The biological soil amendment of animal origin has been handled, conveyed and stored in a manner and location to minimize the risk of contamination by an untreated or in process biological soil amendment of animal origin; and (2) For a treated biological soil amendment of animal origin you produce for your own covered farm(s), documentation that process controls (for example, time, temperature, and turnings) were achieved.

Animals

Feces from domesticated animals and wildlife, such as birds and deer, can also pose a risk because they serve as reservoirs for human pathogens. Domesticated animals, including dogs and cats, are allowed in vineyards under the FSMA Produce Safety Rule, however they can leave fecal droppings in the field as well as potentially damage the crop. It is recommended to keep all domesticated animals outside of the vineyard and packing shed areas. Farmers must weigh the benefits versus risks of domesticated animals' presence in the vineyards and consider excluding them during harvest season to minimize potential risk of table grape contamination. Use of livestock (i.e. chicken, sheep, cattle, geese) to remove weeds is also discouraged due to the potential for fecal contamination in the fields. Discouraging wildlife from entering the vineyard using fences, netting, decoys, trap crops, or falcons is recommended to reduce contamination of the grapes with human pathogens. Clusters with visible signs of animal waste or damage must not be distributed for fresh market consumption (§112.112).

What FSMA Produce Rule Says

§112.83(b)(2): If significant evidence of potential contamination is found (such as observation of animals, animal excreta or crop destruction), you must evaluate whether the covered produce can be harvested in accordance with the requirements of §112.112 and take measures reasonably necessary during growing to assist you later during harvest when you must identify, and not harvest, covered produce that is reasonably likely to be contaminated with a known or reasonably foreseeable hazard.



Water

As of November 2018, FDA has proposed to extend, for covered produce other than sprouts, the dates for compliance with the agricultural water provisions to address questions about the practical implementation of compliance with certain provisions and to consider how we might further reduce the regulatory burden or increase flexibility while continuing to protect public health. As FDA continues to work with stakeholders on issues raised regarding the agricultural water requirements, FDA does not intend to enforce the agricultural water provisions in subpart E of the produce safety regulation for covered produce other than sprouts.

However, under Subpart E as currently written, untreated ground water or surface water that comes into direct contact with the harvestable portion during production must be tested. This includes water applied for frost protection, disease and insect pest protection, and fertigation, if applied in a way that is intended or likely to come in direct contact with the harvestable portion. Municipal water, which when properly treated is potable (no detectable generic *E. coli* per 100 mL), is considered to be the highest quality and lowest risk among all the possible water sources; and may be used for all farm practices. Municipalities are responsible for water testing, and growers are not required to additionally test the water if they have a certificate of compliance on record [§112.46(a)(1)]. Ground water from a well and surface water, both pose a greater risk than municipal water. Ground water from a well or surface water can be used for irrigation, pest management and frost protection provided it has a geometric mean (GM) of 126 or less colony forming units (CFU) of generic *E. coli* per 100 ml sample and a statistical threshold value (STV) of 410 or less CFU generic *E. coli* per 100 mL [§112.44(b)]. If ground water is pumped from a well into a retention pond for storage it is considered surface water once it enters the pond. Surface water has the greatest risk for contamination and should not be used for pre-harvest activities unless it is adequately treated to reduce pathogens of significant public health consequences. Water used for pre-harvest applications that result in the water coming into direct contact with the crop must contain a geometric mean of 126 or less colony forming units of generic *E. coli* per 100 ml sample and a STV of 410 or less generic *E. coli* per 100 mL [§112.44(b)]. Additional information on pre-harvest water testing requirements are provided in sections §112.44(b) of the Produce Safety Rule.

Growers are also required to inspect their water sources at least annually for conditions that are reasonably likely to introduce biological hazards [§112.42(a)]. Wells should be checked for cracks, functioning pumps and potential flooding hazards. Ponds should be protected from wildlife intrusions through the use of fences, decoys, netting or strings across the pond surface. Immediate corrective actions must be taken if a water source is compromised and the water is no longer safe and of adequate sanitary quality for its intended use (§ 112.41 and 112.45(a)). Inspections and corrective actions must be documented (§ 112.50(b) (1) and (6)), including the dates, problems observed, corrective actions taken and personnel involved.

What FSMA Produce Rule Says

§112.42 (a) At the beginning of a growing season, as appropriate, but at least once annually, you must inspect all of your agricultural water systems, to the extent they are under your control (including water sources, water distribution systems, facilities, and equipment), to identify conditions that are reasonably likely to introduce known or reasonably foreseeable hazards into or onto covered produce or food contact surfaces in light of your covered produce, practices, and conditions, including consideration of the following: (1) The nature of each agricultural water source (for example, ground water or surface water); (2) The extent of your control over each agricultural water source; (3) The degree of protection of each agricultural water source; (4) Use of adjacent and nearby land; and (5) The likelihood of introduction of known or reasonably foreseeable hazards to agricultural water by another user of agricultural water before the water reaches your covered farm.

§112.44(b) When you use agricultural water during growing activities for covered produce (other than sprouts) using a direct water application method, the following criteria apply (unless you establish and use alternative criteria in accordance with 112.49): (1) A geometric mean (GM) of your agricultural water samples of 126 or less colony forming units (CFU) of generic *E. coli* per 100 mL of water (GM is a measure of the central tendency of water quality distributions); and (2) A statistical threshold value (STV) of your agricultural water samples of 410 or less CFU of generic *E. coli* per 100 mL of water (STV is a measure of variability of your water quality distribution, derived as a model-based calculation approximately the 90th percentile using the lognormal distribution).

My Table Grapes Pre-harvest Checklist

- ✓ We train employees to identify and avoid feces-contaminated table grapes and document training.
- ✓ We document applications of biological soil amendments, including the certificate of treatment (for treated amendments), application date and method of application (§112.60 and §112.60(b)(1)).
- ✓ We inspect our water sources and systems (such as pipes or hoses) at least annually for potential biological hazards (§112.42(a)).
- ✓ We test our water for generic *E. coli* using the FSMA Produce Safety Rule requirements for our water source (§112.44(b)) and ensure the geometric mean is below 126 colony forming units generic *E. coli* per 100 mL and has a statistical threshold of less than 410 colony forming units generic *E. coli* per 100 mL.
- ✓ If our water samples do not meet the FSMA Produce Safety Rule standards we will implement corrective actions (§112.45(a) and (b)).

Harvest risk assessment and food safety

During harvest, all workers must be trained how to safely harvest the grapes. All harvested grapes must be handled in a manner that prevents contamination [§112.113]. Examples include inspection of each cluster for contamination with animal and/or bird feces. Grapes that are contaminated or are on the ground [§112.114] cannot be harvested unless they are commercially processed to reduce foodborne pathogens of public health significance [§112.2(3)(b)(1-6)]. All harvest bins and tools must be inspected, maintained, cleaned, and when necessary sanitized [§112.123(d)(1)]. The frequency of cleaning should be dependent on the visual inspection and presence of vegetative or organic matter in the harvesting containers. Harvest bins used to collect culls must always be cleaned and sanitized before being reused [§112.111(b) and §112.123(d)]

(1)]. Cleaning means the physical removal of organic matter (i.e. soil, plant debris) from surfaces using potable water and a detergent. Sanitize means to adequately treat cleaned surfaces with a sanitizer to kill microorganisms. Equipment, such as pallets, forklifts, tractors and other vehicles used during harvesting activities must be clean of soil, plant debris and other organic matter to protect against contamination of table grapes [§112.123(d)(2)].

What FSMA Produce Rule Says

§112.113 You must handle harvested covered produce during covered activities in a manner that protects against contamination with known or reasonably foreseeable hazards.

§112.114 You must not distribute dropped covered produce. Dropped covered produce is covered produce that drops to the ground before harvest. Dropped covered produce does not include root crops that grow underground (such as carrots), crops that grow on the ground (such as cantaloupe), or produce that is intentionally dropped to the ground as part of harvesting (such as almonds).

§112.123 All of the following requirements apply regarding equipment and tools subject to this subpart: (a) You must use equipment and tools that are of adequate design, construction, and workmanship to enable them to be adequately cleaned and properly maintained; and (b) Equipment and tools must be: (1) Installed and maintained as to facilitate cleaning of the equipment and of all adjacent spaces; and (2) Stored and maintained to protect covered produce from being contaminated with known or reasonably foreseeable hazards and to prevent the equipment and tools from attracting and harboring pests. (c) Seams on food contact surfaces of equipment and tools that you use must be either smoothly bonded, or maintained to minimize accumulation of dirt, filth, food particles, and organic material and thus minimize the opportunity for harborage or growth of microorganisms. (d)(1) You must inspect, maintain, and clean and, when necessary and appropriate, sanitize all food contact surfaces of equipment and tools used in covered activities as frequently as reasonably necessary to protect against contamination of covered produce. (2) You must maintain and clean all non-food-contact surfaces of equipment and tools subject to this subpart used during harvesting, packing, and holding as frequently as reasonably necessary to protect against contamination of covered produce. (e) If you use equipment such as pallets, forklifts, tractors, and vehicles such that they are intended to, or likely to, contact covered produce, you must do so in a manner that minimizes the potential for contamination of covered produce or food contact surfaces with known or reasonably foreseeable hazards.

My Table Grapes Harvest Checklist

- ✓ We inspect clusters before harvesting and don't harvest clusters that are damaged by or contaminated with animal or bird feces for fresh market consumption (§112.113).
- ✓ We do not harvest grapes that are on the ground for fresh market consumption (§112.114).
- ✓ We ensure all our harvest bins, totes, equipment and surfaces that contact our grapes are inspected, cleaned, and maintained (§112.123).

Post-harvest Risk Assessment, Handling in Vineyards and Packing Sheds

Becoming familiar with the flow of fruit from harvest to shipping in order to identify areas where the fruit contacts surfaces is an essential step to minimize food safety risks. Assess risks in your packing sheds, storage facilities, and vehicles used to transport the grapes to identify hazards. Workers, wild and domestic animals, tools, equipment, surfaces, and water, are all possible points of contamination.



Animals

Domesticated animals, including dogs and cats, must be either excluded from fully enclosed buildings (§112.127(a)(1)) or separated from an area where covered activities occur (§112.127(a)(2)). Guard, guide, or service animals are allowed in some areas of fully enclosed buildings [§112.127(b)]. Measures should be taken to exclude pest, especially if a building is fully enclosed [§112.128(b)].

What the FSMA Produce Rule Says

§112.127 (a) You must take reasonable precautions to prevent contamination of covered produce, food contact surfaces, and food-packing materials in fully-enclosed buildings with known or reasonably foreseeable hazards from domesticated animals by: (1) Excluding domesticated animals from fully-enclosed buildings where covered produce, food contact surfaces, or food-packing material is exposed; or (2) Separating domesticated animals in a fully enclosed building from an area where a covered activity is conducted on covered produce by location, time, or partition. (b) Guard or guide dogs may be allowed in some areas of a fully enclosed building if the presence of the dogs is unlikely to result in contamination of produce, food contact surfaces, or food-packing materials.

§112.128 (a) You must take those measures reasonably necessary to protect covered produce, food contact surfaces, and food-packing materials from contamination by pests in buildings, including routine monitoring for pests as necessary and appropriate. (b) For fully-enclosed buildings, you must take measures to exclude pests from your buildings. (c) For partially-enclosed buildings, you must take measures to prevent pests from becoming established in your buildings (such as by use of screens or by monitoring for the presence of pests and removing them when present).

Water

As discussed above, as of November 2018 FDA has proposed to extend, for covered produce other than sprouts, the dates for compliance with the agricultural water provisions. As FDA continues to work with stakeholders on issues raised regarding the agricultural water requirements, FDA does not intend to enforce the agricultural water provisions in subpart E of the produce safety regulation for covered produce other than sprouts.

However, under Subpart E as currently written, all water applied to covered produce or food contact surfaces during- and post-harvest, including ice, must have no detectable generic *E. coli* in 100 ml of water sample [§112.44(a)(2)] and must be safe and of adequate sanitary quality for its intended use (§112.41). Water must be visually monitored for the buildup of organic matter, soil or plant debris [§112.48(b)]. Sanitizers can be used to prevent the growth of microorganisms in the water and the cross contamination of the grapes. The use of a sanitizer is not required by the FSMA Produce Safety Rule however, if a sanitizer is used, certain treatment and recordkeeping requirements apply (§ 112.43 and 50(b)(4)).

What FSMA Produce Rule Says

§112.44(a)(2-4) When you use agricultural water for any one or more of these following purposes, you must ensure there is no detectable generic E.coli in 100 milliliters of agricultural water, and you must not use untreated surface water for any of these purposes: applied in any manner that directly contacts covered produce during or after harvest activities (for example, water that is applied to covered produce for washing and cooling activities, and water that is applied to harvested crops to prevent dehydration before cooling) including when used to make ice that directly contacts covered produce during and after harvest activities; used to contact food contact surfaces, or to make ice that will contact food contact surfaces and used for washing hands during and after harvest activities.

Packing, Equipment, Surfaces, Storage Facilities and Vehicles

Table grapes must be packed in clean containers that are unlikely to support the growth or transfer of bacteria [§112.116]. It is recommended that all bins be stored on pallets or shelves and at least 12-18 inches away from walls. Surfaces that come into direct contact with the grapes must be clean and sanitized [§112.123(d)(1)]. We will also ensure that the building has regularly serviced and easily accessible toilet facilities and handwashing stations available during all packing or holding activities (§112.129). Vehicles used to transport table grapes should be inspected prior to loading to make sure they are clean and adequate for transporting the grapes (§112.125).

What FSMA Produce Rule Says

§112.116 (a) You must use food-packing material that is adequate for its intended use, which includes being: (1) Cleanable or designed for single use; and (2) Unlikely to support growth or transfer of bacteria. (b) If you reuse food-packing material, you must take adequate steps to ensure that food contact surfaces are clean, such as by cleaning food-packing containers or using a clean liner.

§112.125 Equipment that is subject to this subpart that you use to transport covered produce must be: (a) Adequately clean before use in transporting covered produce; and (b) Adequate for use in transporting covered produce.

§112.129 All of the following requirements apply to toilet facilities: (a) You must provide personnel with adequate, readily accessible toilet facilities, including toilet facilities readily accessible to growing areas during harvesting activities. (b) Your toilet facilities must be designed, located, and maintained to: (1) Prevent contamination of covered produce, food contact surfaces, areas used for a covered activity, water sources, and water distribution systems with human waste; (2) Be directly accessible for servicing, be serviced and cleaned at a frequency sufficient to ensure suitability of use, and be kept supplied with toilet paper; and (3) Provide for the sanitary disposal of waste and toilet paper. (c) During growing activities that take place in a fully-enclosed building, and during covered harvesting, packing, or holding activities, you must provide a hand-washing station in sufficiently close proximity to toilet facilities to make it practical for persons who use the toilet facility to wash their hands.

My Table Grapes Post-harvest Checklist

- ✓ We exclude domesticated animals from our enclosed facilities that we use for post-harvest handling of our fruit (§112.127).
- ✓ We provide pest control within our post-harvest facilities (§112.128).
- ✓ We ensure our water supply is tested and safe (§112.44).
- ✓ We clean, and when necessary and appropriate, sanitize surfaces that directly touch the fruit [§112.123(d)(1)].
- ✓ We ensure all of our harvest tools, equipment and containers are inspected, cleaned, and remain in good repair (§112.123).
- ✓ We have toilet facilities and hand washing stations for handlers of our grapes (§112.129).
- ✓ We ensure our vehicles that transport our grapes are inspected and cleaned (§112.125).

Vineyard Food Safety Plan and Record Keeping

The FSMA Produce Safety Rule does not require a Food Safety Plan. However, there are a few records that a farm must keep for at least two years either in paper or electronic format [§112.162(a-b)]: the name and location of the farm, actual values and observations obtained during monitoring, list of commodities, location of the growing areas, and dates and times of documented activity [§112.161(a)(1)]. In addition, records must be created at the time the activity was performed, they must be accurate, and the record signed and dated by the person that performed the activity [§112.161(a)(2-4)]. All records must be available and accessible during an FDA inspection [§112.166(a-c)]. FSMA also requires records related to exemption status, personnel training, agricultural water, biological soil amendments processes, and records related to cleaning and sanitizing equipment, tools and buildings. We will keep records required for at least 2 years past the date the record was created and if you are qualified exempt, required records must be kept for the 3-years prior [§112.164]

What FSMA Produce Rule Says

§112.161 (a) Except as otherwise specified, all records required under this part must: (1) Include, as applicable: (i) The name and location of your farm; (ii) Actual values and observations obtained during monitoring; (iii) An adequate description (such as the commodity name, or the specific variety or brand name of a commodity, and, when available, any lot number or other identifier) of covered produce applicable to the record; (iv) The location of a growing area (for example, a specific field) or other area (for example, a specific packing shed) applicable to the record; and (v) The date and time of the activity documented; (2) Be created at the time an activity is performed or observed; (3) Be accurate, legible, and indelible; and (4) Be dated, and signed or initialed by the person who performed the activity documented. (b) Records required under 112.7(b), 112.30(b)(2), 112.50(b)(2), (4), and (6), 112.60(b)(2), 112.140(b)(1) and (2), and 112.150(b)(1), (4), and (6), must be reviewed, dated, and signed, within a reasonable time after the records are made, by a supervisor or responsible party.

§112.164 (a) (1) You must keep records required by this part for at least 2 years past the date the record was created. (2) Records that a farm relies on during the 3-year period preceding the applicable calendar year to satisfy the criteria for a qualified exemption, in accordance with §112.5 and §112.7, must be retained as long as necessary to support the farm's status during the applicable calendar year. (b) Records that relate to the general adequacy of the equipment or processes or records that relate to analyses, sampling, or action plans being used by a farm, including the results of scientific studies, tests, and evaluations, must be retained at the farm for at least 2 years after the use of such equipment or processes, or records related to analyses, sampling, or action plans, is discontinued.

Conclusion

Microbial contamination can occur at any point and at any time during growing, harvesting, or packing of table grapes from your vineyard. The best approach to maintaining fresh table grapes for safe consumption is to be aware of potential risks and establish management practices to minimize these risks at each step in the production and sales process.

*** Location in the Produce Safety Rule.**

****If you grow grapes for wine production, please see “Ensuring Food Safety in the Vineyard: Wine Grapes” extension publication. ****



[North Central Region Center](http://www.ncrfsma.org) (www.ncrfsma.org), ncrFSMA@iastate.edu

For information on [FSMA](https://www.fda.gov/Food/GuidanceRegulation/FSMA/): (<https://www.fda.gov/Food/GuidanceRegulation/FSMA/>)

FSMA [Produce Safety Rule](https://www.fda.gov/food/guidanceregulation/fsma/ucm334114.htm): (<https://www.fda.gov/food/guidanceregulation/fsma/ucm334114.htm>)



North Central Region
Center for FSMA Training, Extension
and Technical Assistance

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Prepared by: Angela Shaw PhD, Iowa State University; Jennie Savits MS, Midwest Grape and Wine Industry Institute/ Iowa State University; Melanie Lewis Ivey PhD, The Ohio State University-Wooster Campus; Smaranda Andrews PhD, Iowa State University; and Jacques Overdiep III, Iowa State University.

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