

Glossary of Aquaponic and Hydroponic Produce Safety Terms

Term	Definition	Source*	In PSA Glossary?	Supporting / Confirming Resource(s) for Usage
agricultural water	Water used in covered activities on covered produce where water is intended to, or is likely to, contact covered produce or food contact surfaces, including water used in growing activities (including irrigation water applied using direct water application methods, water used for preparing crop sprays, and water used for growing sprouts) and in harvesting, packing, and holding activities (including water used for washing or cooling harvested produce and water used for preventing dehydration of covered produce).	PSR § 112.3	yes	
agricultural water assessment	An evaluation of an agricultural water system, agricultural water practices, crop characteristics, environmental conditions, and other relevant factors (including test results, where appropriate) related to growing activities for covered produce (other than sprouts) to: (1) Identify any condition(s) that are reasonably likely to introduce known or reasonably foreseeable hazards into or onto covered produce or food contact surfaces; and (2) Determine whether measures are reasonably necessary to reduce the potential for contamination of covered produce or food contact surfaces with such known or reasonably foreseeable hazards.	PSR § 112.3	no	CEA Alliance, 2023
agricultural water inspection	An examination of all agricultural water systems, to the extent they are under your control, to identify any conditions that are reasonably likely to introduce known or reasonably foreseeable hazards into or onto covered produce or food contact surfaces, including consideration of the following: (1) The nature of each agricultural water source (for example, whether it is 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.	PSR § 112.42(a)	no	CEA Alliance, 2023



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agricultural water system	A source of agricultural water, the water distribution system, any building or structure that is part of the water distribution system (such as a well house, pump station, or shed), and any equipment used for application of agricultural water to covered produce during growing, harvesting, packing, or holding activities	PSR § 112.3	no	CEA Alliance, 2023
amendment	Any chemical, biological, or physical materials intentionally added to soil, <i>substrate, or water, to improve and support plant growth and development</i> . The term amendment also includes growth media that serve as the entire substrate during the growth of covered produce (such as mushrooms and some sprouts). Note: Adapted from the PSA Glossary definition for “soil amendment.” <i>Italicized language does not appear in the original PSA definition.</i>	Joint FSOP PI group	no	PSA Glossary
chemical quality of water	A characterization of water relative to its chemical properties (e.g., pH, electrical conductivity [EC], alkalinity, nutrient concentrations)	Joint FSOP PI group	no	Resource Innovation Institute, 2023
fertilizer	A natural or synthetic source of plant nutrients added to improve fertility	Joint FSOP PI group	no	Resource Innovation Institute, 2023
growth media	Material that acts as a substrate during the growth of covered produce (such as mushrooms and some sprouts) that contains, may contain, or consists of components that may include any animal waste (such as stabilized compost, manure, non-fecal animal byproducts or table waste)	PSR § 112.3	yes	
microbial quality of water	A characterization of water relative to microbiological constituents. For example, microbial quality measures could include human pathogens, indicator organisms, plant beneficials, and/or plant pathogens.	Joint FSOP PI group	no	Resource Innovation Institute, 2023
nutrient solution	Water-based mixture that may contain fertilizers and/or other amendments to promote plant growth through irrigation and nutrition	Joint FSOP PI group	no	CEA Alliance, 2023



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Term	Definition	Source*	In PSA Glossary?	Supporting / Confirming Resource(s) for Usage
physical quality of water	A characterization of water relative to physical properties (e.g., temperature, total suspended solids, total dissolved solids)	Joint FSOP PI group	no	Resource Innovation Institute, 2023
postharvest agricultural water	Water that meets the definition of agricultural water and is used during and after harvest of covered produce, or during postharvest handling of covered produce; this can include agricultural water used during harvest activities in the field as well as during packing or holding activities, such as water used in a packinghouse	PSA Glossary	yes	
pre-harvest agricultural water	Water that meets the definition of agricultural water and is used during growing activities for covered produce (other than sprouts) for the purposes of the FSMA Produce Safety Rule (§ 112.44(b))	PSA Glossary (definition for "production water")	yes	
soil amendment	Any chemical, biological, or physical material (such as elemental fertilizers, stabilized compost, manure, non-fecal animal byproducts, peat moss, perlite, pre-consumer vegetative waste, sewage sludge biosolids, table waste, agricultural tea and yard trimmings) intentionally added to the soil to improve the chemical or physical condition of soil in relation to plant growth or to improve the capacity of the soil to hold water. The term soil amendment also includes growth media that serve as the entire substrate during the growth of covered produce (such as mushrooms and some sprouts).	PSR § 112.3	yes	
substrate	Any material utilized as a physical anchor for plant roots, which may provide nutrients (e.g., perlite, vermiculite, rockwool, fiber growing mats, foam, peat, coco coir, wood fiber)	Joint FSOP PI group	no	CEA Alliance, 2023; Resource Innovation Institute, 2023



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Term	Definition	Source*	In PSA Glossary?	Supporting / Confirming Resource(s) for Usage
treating agricultural water	This term is used in the PSR (§ 112.46) and the PSA Grower Training to refer to processes that make water "safe and of adequate quality for its intended use" on covered produce and may also meet a microbial quality standard described in § 112.44(a). Other requirements around treating agricultural water are described in § 112.46(b)-(d). Treating agricultural water in this context is distinct from other types of "water treatment" that may be used for non-food safety purposes.	PSR § 112.46	no	
water quality	A characterization of water relative to biological, chemical, and/or physical constituents	Joint FSOP PI group	no	CEA Alliance, 2023; Resource Innovation Institute, 2023
water testing	Sampling and analyzing water to determine the presence of and possibly the concentration of specific components (e.g., nutrient or microorganism concentrations)	Joint FSOP PI group	no	Resource Innovation Institute, 2023
water treatment	A process of improving water quality (chemical, physical, or microbiological) for its intended use	Joint FSOP PI group	no	CEA Alliance, 2023

*CEA = Controlled Environment Agriculture

FSOP = Food Safety Outreach Program

PI = Principal Investigator

PSA = Produce Safety Alliance

PSR = Produce Safety Rule = Standards for the Growing, Harvesting, Packing, and Holding of Produce for Human Consumption (2023)

Note: The Joint FSOP PI Group comprised PIs and key personnel from the project described in the footer and another related FSOP project, grant no. 2022-70020-37574.



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