

Aquaculture and Aquaponics Food Safety

FARMING FISH AND CROPS IN SELECTED WATER ENVIRONMENTS

Aquaculture is the general term used to describe the breeding and rearing of aquatic animals and plants in controlled or selected environments.

Aquaponics is a system of aquaculture in which the waste produced by farmed fish or other aquatic animals supplies nutrients for plants grown hydroponically, which in turn purify the water.

Responsibilities of the grower

Growers of fish or fish and crops together are responsible for maintaining:

- Approved water source.
- Compliance with processing requirements where applicable.
- Accurate and safe packaging and labeling if products are for final retail sale.
- Communications of parasite destruction practices to retail buyers.
- Sanitary conditions to ensure the physical environment does not cause contamination of food products.
- All appropriate licenses and permits.

Additionally, best practices for food safety must be followed when handling fish and produce intended for commercial sale.

Licenses and permits

Farm raised fish, shellfish, and produce are considered products of the farm or garden and are excluded from food handler licensing by the Minnesota Department of Agriculture. However, a commercial aquaculture license may be required by the Minnesota Department of Natural Resources and a water discharge permit may be required from the Minnesota Pollution Control Agency.

Produce

The Produce Safety Rule ([21 CFR 112](#)) can apply to raw agricultural products grown through aquaponics. Applicability of the rule depends on sales per year and type of sales. The [Standards for Produce Safety flowchart](#) has the basic criteria that determine whether an operation that meets the definition of “farm” is subject to the produce rule.

Seafood Hazard Analysis Critical Control Points Rule (HACCP)

Seafood HACCP applies to producers and wholesalers. The Seafood HACCP Rule is a federal regulation ([21 CFR 123](#)) that applies to a fish farm operation if the processing includes the removal of heads and guts, or the packaging of fish, and the fish is sold wholesale. If the farm only treats with carbon dioxide, or bleeds, washes and ices the fish, seafood HACCP does not apply.

Fish intended for raw consumption

Aquacultured fish may be served raw if:

- Fish were raised in net-pens in open waters **OR** in land-based operations such as ponds and tanks.

AND

- Fish were fed formulated feed that did not contain live parasites.

Freezing requirements apply to aquacultured fish that are fed live feed. Specific freezing temperatures and times are available in the [Fish Intended for Raw Consumption](#) fact sheet.

Resources

[Minnesota Department of Health Food Business Safety](#)
(www.health.state.mn.us/foodbizsafety)

[Fish Intended for Raw Consumption](#)
(www.health.state.mn.us/communities/environment/food/docs/fs/fishrawfs.pdf)

[Good Agricultural Practices](#)
(<https://extension.umn.edu/growing-safe-food/good-agricultural-practices-basics>)

[Good Agricultural Practices \(GAP\) & Good Handling Practices \(GHP\)](#)
(www.ams.usda.gov/services/auditing/gap-ghp)

Seafood HACCP Rule (21 CFR 123): [Fish and Fishery Products](#)
(www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?CFRPart=123)

Produce Safety Rule (21 CFR 112):
[Standards for the Growing, Harvesting, Packing, and Holding of Produce for Human Consumption](#)
(www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?CFRPart=112)

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