

ORGANIC GEM®

NOT ALL FISH FERTILIZERS ARE THE SAME
KNOW THE DIFFERENCE!!!

ORGANIC GEM (HYDROLYZATE)

- Made from edible fish
- Fresh fish scent
- Low temperature processed with naturally occurring marine enzymes
- No oils removed (high oil content 18-30%)
- No protein removed
- No chlorine
- Best quality control (processed in FDA approved facility)
- Won't clog equipment
- Heat sensitive components are left intact, such as:
 - Hormones
 - Enzymes
 - Amino acids
 - Vitamins
 - Proteins
- Made with food grade phosphoric or citric acids (depending on desired formula)
- Made from deep, cold water dogfish (high oil) harvested from the North Atlantic Ocean
- Low or non-detectable heavy metal levels
- High trace mineral content of deep water ocean fish

EMULSIONS & INFERIOR PRODUCTS

- Made from "trash fish"
- Offensive odor
- Heated and boiled down to 50% concentration
- Oils removed
- Protein meal removed
- Contains chlorine (used during process)
- Lower quality control
- Clogs equipment
- Heat sensitive components destroyed
- Made with low cost sulfuric acid
- Made from river, lake or estuary fish which are exposed to high levels of pollutants
- Higher heavy metal levels
- Low trace mineral content of lake or estuary fish

COMMON PRODUCTION PROCESS

There are various ways that fish fertilizers are produced; here are the basic parameters for the three most common methods:

1. Fermentation

Fish waste, or “trash fish” are ground up into a slurry, which is then pumped into large holding tanks. Sulfuric acid is added, and the fish is left to **anaerobically digest (rot)** in the tank for 30-60 days. During this period of anaerobic activity, much of the beneficial nutrients are “gassed off”. The material is then filtered to remove remaining contaminants and packaged.

2. Emulsions

This is the most popular method. “Trash fish” is ground into a slurry and cooked at very high temperatures. The **oils, collagen and lipids are then removed** for other products. What is left is called “stickwater”. This “stickwater” is then boiled to drive off the water and concentrate it. Sulfuric acid is then added to stabilize the emulsion, and it is filtered to remove contaminants. It is now ready for packaging.

3. Acid Digest

Fish waste, typically from a wide variety of sources, many of low oil content, is ground into a slurry and pumped into a processing tank. Phosphoric acid is added, and the tank is slowly stirred and heated for at least 24 hrs. More acid is then added to stabilize the fertilizer and it is filtered to remove contaminants. This process uses more acid and has a higher P₂O₄ content.

ORGANIC GEM PRODUCTION PROCESS

Organic Gem is produced by a unique proprietary process. We are the **ONLY** Company consistently using deep water, North Atlantic Dogfish for our raw material. Our process is a **low temperature, aerobic, enzymatic digestion**. We **DO NOT** remove any of the beneficial oils, collagens, or lipids. We start by receiving **fresh** dogfish offered from the numerous processors in New Bedford, MA (largest fishing port in North America).

We then load the dogfish into our EDU's (enzymatic digestion units) add our proprietary enzyme blend, and agitate at low temperature. The whole digestion process requires about 1.5 - 2 hrs. to complete. We then course filter to remove the shark cartilage from the hydrolysate.

This cartilage goes on for further processing as a dietary supplement.

Phosphoric acid (or citric blend) is added at this time to stabilize the hydrolysate, and then we **filter for a second time over a fine 150 mesh filter** to remove any remaining particulate. The Organic Gem is pumped to holding tanks for final QC. It is then ready for packaging.

Please note, **high quality hydrolysates will “separate” or fall out after a period of time. You should see three distinct layers in the container:**

Top layer of oil

Middle layer of protein

Bottom layer of collagens and gelatins

- ❖ For best application results, always remember to agitate Organic Gem well before adding water