



## STIMULUS

BIO-STIMULANT  
AND ODOR CONTROL

# STIMULUS INHIBITS THE ACTIVITY OF THE ENZYME UREASE THAT CONVERTS NITROGEN AND UREA TO AMMONIA

### TREATMENT WITH STIMULUS CAN:

- Inhibit the formation of odors;
- Control odors before and during processing;
- Provide odor mitigation during and after processing;
- Environmentally safe: derived from natural plant extract; no chemicals, dyes or fragrances.

### MODE OF ACTION

The major components of STIMULUS inhibit the activity of the enzyme urease, which facilitates the conversion of nitrogen and urea to ammonia. Although the mode of action is unclear, they tend to immobilize the enzyme.

In wastewater bio-solids, the lack of odor generated by the sludge material is generally attributed to activity against the anaerobic bacteria. The mode of action is believed to be a weakening of the cell wall by the natural surfactants, and a disruption of their environment severe enough to cause a reduction or elimination of the populations. The components are powerful surfactants composed of an aglycone and linked to one or more sugar chains, which form glycosides. The glycosides provide the sugar to the composting process and becomes a feed source for the aerobic bacteria.

### INDUSTRIAL WASTEWATER TREATMENT

Due to the concentrated nature of wastes from food processing, rendering and other industrial operations, wastewater treatment components such as clarifiers, ponds and biological processes may become starved for oxygen, producing organic acids, sulphides and odors. STIMULUS may be added to these components. Operators may find that higher dosages will be required to achieve desired process optimization and odor reduction (e.g. maintenance dosages of 10 ppm of stock STIMULUS to industrial effluent flow may be needed in aerated pond systems).

### SPECIFICATIONS

Description	Brown, free-flowing liquid
Packaging	20.37 kg and 208.82 kg plastic containers
Stability	Stable
pH	6.0 - 7.0 when mixed with water
Specific Gravity	1.10 - 1.20
Nutrient Content	Biological nutrients and stimulants
Storage and Handling	DO NOT FREEZE! Store in a cool dry location. Do not inhale mists. Avoid excessive skin contact. See MSDS.

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## APPLICATION INSTRUCTIONS

**Compost** – STIMULUS effectively controls the odors from decomposition of grass, landscape products and waste from similar streams. It is effective at landfill operations to control food waste odors.

STIMULUS should be applied to the new materials as soon as possible after it arrives to prevent odors. If the yard is not going to be tub ground or processed in any way, then it is applied to the windrow when the material is first set out. If the waste material is to be tub ground or processed in some way, then it is applied after grinding to eliminate the odors contained in the material. Dilute at a rate of 1 gal:200 gal of water. Apply 1.0-1.25 gallons of 1:200 solution per cubic yard of landscape waste.

Depending on the operator's method of composting, it is recommended that STIMULUS be applied again after the pile is turned for the first time to control any buildup of anaerobic bacteria in the center of the pile. Additional applications are usually not required.

Those landscape materials that have been put into windrows without benefit of tub grinding should receive an application of STIMULUS the day the pile is first turned, as well as at the time of receiving.

- **Wet Conditions (early spring or late fall)** – Application rate if 1.0-1.5 gallons of dilution per cubic yard of compost does not raise the moisture content more than 1.0%. STIMULUS will prevent the development of odors inside the compost pile due to poor operating conditions. A dilution ratio of 1:250 gallons is recommended for application under these conditions.
- **Dry Conditions** – During periods of dry weather, the need for moisture and water to maintain moisture levels within the compost pile is increased. These adverse conditions create a situation of low moisture due to high temperatures. The compost can be reactivated with the addition of STIMULUS to the processing water. As a natural surfactant, STIMULUS will allow the water and oxygen to penetrate deeper into the pile, helping to stabilize the pile to more normal conditions.

- **Leaves** – Over winter storage and composting, leaves may develop strong musty odors from yeast and moulds that form on the leaf surface. Some people are offended by these odors. STIMULUS neutralizes these odors.

**Atmospheric Spraying** – Spray a 2.0-5.0% solution around retention ponds, compost sites, truck bays, waste processing areas, etc.

**Waste Water** – Apply a 5.0-10.0% spray to open tanks to eliminate odors. Use in mist air applications. Add to waste stream to reduce sludge build-up.

**Contact Applications** – STIMULUS is extremely effective for deodorizing surfaces contaminated by urine, feces, garbage or other organic substances. STIMULUS is diluted 1:200 and sprayed liberally on to the surface. No particular safety equipment is required besides gloves and a fabric mask.

Appropriate contact applications include: concrete surfaces such as floors, loading ramps, docks, piling or walls, tile surfaces, metal surfaces such as dumpsters, bins, containers or other similar areas. Carpeting and cloth surfaces may be deodorized if sufficient STIMULUS is applied, although odors may be trapped in carpet padding, requiring several applications. Wooden surfaces may be effectively deodorized if water contact is not harmful to the surface. When diluted 1 to 200, STIMULUS should not cause staining or discoloration.

For further information on application, contact your BIONETIX technical representative.