

## **How QUIKSOIL® 2600 Works.**

- 1. QUIKSOIL® 2600** is a combination of amino acids, proteins, nucleic acids, intermediate metabolism products, complex glycosides, and selected minerals. This combination provides everything necessary for the metabolization of organic compounds. By increasing the reductive potential of the mass while maintaining good structure, **QUIKSOIL® 2600** promotes increased facultative proliferation throughout the interior of the substrate by maximizing both singlet and doublet oxygen. **QUIKSOIL® 2600** also provides sulfur reducing anaerobes with a preferential replacement for sulfates as a source of oxygen. When the nitrates in **2600** are reduced, nitrogen is formed instead of sulfides. As this nitrogen makes its way to the surface of the mass, nitrogen fixing bacteria have the opportunity to fix it back into nitrate, creating an additional singlet oxygen source, keeping the nutrient nitrogen in the mass, and limiting odorous volatilization. Aerobic and micro-aerophilic activity dominates the upper parts of the mass, acting as a filtration and finishing system for gases moving outward from the interior.
- 2. QUIKSOIL® 2600** decreases ammonia, amines, indole, and other nitrogenous odors by improving conversion rates to nitrate and increasing biomass production, decreasing the need for aeration and the associated volatilizations. (Stable temperatures increase nitrogen fixation bacteria levels.)  
**QUIKSOIL® 2600** decreases sulfide and mercaptan production by supplying the reducing bacteria with an alternative compound oxygen source. Additionally sulfur is tied up in sulph-oxide bonds and proteins produced in biomass increases. Other odors, which are typically the products of incomplete oxidation, such as aldehydes and ketones, are further oxidized and degraded as they are maintained in the mass longer, rather than prematurely exhausted.
- 3. QUIKSOIL® 2600** increases activity to levels allowing decomposition times consistent with the needs of most facilities.

Because less carbon dioxide is generated and volatilized, more weight (density) and more carbon remain in the finished product and fewer greenhouse gases are exhausted. Because more ammonia and other free nitrogen compounds are fixed rather than exhausted from the pile, and because sulfates are not reduced to sulfides, nutrient values in **2600** treated compost tend to be higher, and the nutrients are often attached in complex organic compounds limiting run-off pollution potential.

4. Limiting the amount of mechanical aeration facilitates even temperatures and degradation rates. Mechanical aeration, much like fanning a fire, causes temporary temperature spikes and dramatic changes in biological population. Because much of this temperature increase may not be biological, the mass may reach temperature levels toxic to desirable microbes. Thus, heavily aerated materials kept at high temperatures break down as much from chemical (thermal) decomposition as from biological decomposition. Additionally, during aeration activities anaerobically produced compounds are exhausted before they are fully decomposed, **producing many odor problems. QuikSoil®2600** helps maintain porosity and aerobic conditions by the addition of specific ionic minerals with like charges. In the proper balance these cellular units repel each other, helping to maintain porosity much the way it is achieved in aerobic soils.
5. **QUIKSOIL® 2600** requires specific management practices in conjunction with its application to be most effective. These practices typically save the operator labor, maintenance, and fuel costs as they decrease the amount of external handling and processing the material receives.

### Using QuikSoil®2 600

**QUIKSOIL® 2600** is mixed with water in any quantity desired. (Water acts only as the carrier.) **QUIKSOIL® 2600** should be added when the feedstock's are shredded/mixed . The **2600** should be as thoroughly

mixed into the material as is possible. 100 mil (3 ounces) of **2600** concentrate are required per ton of compost.

**Windrow.** After mixing and initial turning, the material is allowed to remain undisturbed for 6 to 7 weeks so long as temperatures are sufficient, with 6 weeks as an average. Then it is turned and water added as needed. Typically, the operator determines the correct time for turning by noting a steady decline in temperatures throughout the mass for a minimum of 3 consecutive days. After this turning, the material is allowed to sit another 2 to 4 weeks determined again by temperature. Then it is turned again if necessary or removed for screening.

### **Vessel.**

After mixing and initial turning, the material is placed in the vessel for 14 for 28 days or longer depending on the specific vessel system. It is then removed from the vessel and taken to a pad for further processing and maturation. The material is largely deodorized and noticeable decomposition has occurred by this time. The material is initially turned and then left static for a period of 28 to 60 days (depending on length of time in vessel), at which time it can be screened, and the screened material further matured, marketed, or used.

### **BioFilters**

**QUIKSOIL® 2600** may be used on biofilters to increase efficiency and deodorization, increase bio-activity within the filter media, and lengthen the effective life of the media.

The volume of the filter must be calculated and treatment incorporated just as it would be in a static pile. Because the biofilter processes gases from many piles or windrows, additional treatment of the biofilter will be needed from time to time. This additional dosing will vary based on the load passing through the biofilter and the biofilter's size. Some may need treatment monthly and others less frequently.

The correct frequency of application must be discovered initially by trial and error. As a general rule, undersized biofilters will need more frequent treatment.

**QUIKSOIL® 2600** is environmentally friendly, and requires no special care in handling. It is user friendly, completely water soluble and totally biodegradable. The undiluted concentrate has a 2 year shelf life when stored in dry conditions and not exposed to freezing.