

# PRODUCT DATA SHEET

Product: **Sanbio® TERRA**

## DESCRIPTION

TERRA is a natural microbiological converter for rapid refinement of manure, slurry and dung in barns, tanks and lagoons in livestock farming. TERRA also can be used for treatment of human waste in household toilets.

## MAIN ADVANTAGES

The advantages of TERRA are:

- Refinement of waste into rich organic fertilizer
- No formation of smell, odor and toxic gases
- Hygienic aid for clean barns and ambient air
- Health protection of respiratory system
- Suitable for organic farming.

## COMPOSITION

Activated\*) biopreparation containing: Calcium carbonate, Bentonite-Montmorillonite-Illite (1m558), micronized to particle size of  $\leq 100$ micron, consortium of high concentrated living microorganisms isolated from natural environment, species\*\*): Mycorrhiza (M. spp, M. Glomus intraradices), Bacillus (B. subtilis, B. lichenformis, B. megaterium, B. amyloliquefaciens), Pseudomonas (P. trivialis), Trichoderma (T. harzianum T58); concentration 2.3 Billion CFU/g, starter food source (nutrients, trace elements, amino acids, vitamins)

\*) processed by SANBIO Biocatalytic Stimulation Technology

\*\*\*) see legal statement

## MODE OF ACTION

TERRA combines the core functions in one product:

1. Control of FERMENTATION process
2. Control of ODOR and TOXIC GASES
3. BIO-TRANSFORMATION of waste into fertilizer.

The effectiveness of the converter TERRA in powder form is based on the synergistic combination of mineral mix and microbial biopreparation and their activation by the SANBIO Biocatalytical Stimulation Technology. The mechanism of electrical stimulation makes the difference of TERRA versus conventional products acting on chemical mechanisms only.

**RAPID ACTION.** The unique composition and advanced processing of TERRA ensure instant impact on manure.

**ADVANCED PROCESSING.** The minerals are utilized in a special milling and grinding process down to less than 100 micron size. As a result, the micronized very tiny particles have an extremely large reaction surface (host matrix). Subsequently, the particles and microorganisms being charged and

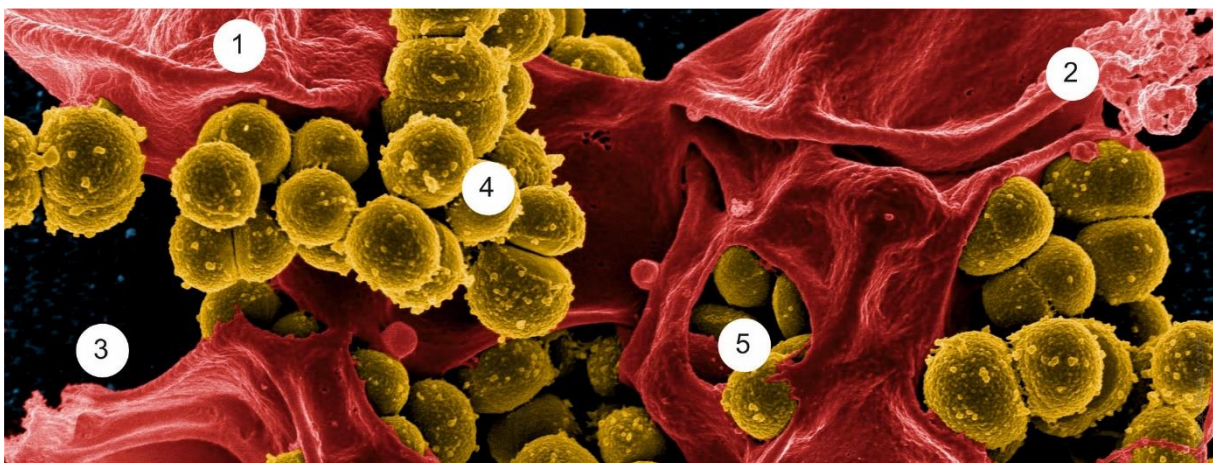
polarized in a special electrical process. Now, the refined physico-chemico complex has a huge capability to interact with compounds, and the microorganisms have a higher activity and metabolism.

**EFFECTIVE MICROBIOTA.** The mineral complex provides the microhabitat (host matrix) for colonialization of microorganisms and carbonates for both, oxygenation and balance the pH value in the manure. TERRA contains mesophilic and thermophilic bacterial cultures and fungi which work under both, aerobic and facultative anoxic condition. This guarantees the best process performance under all conditions. The optimized conditions promote the fast reproduction and growth of aerobic microbes. The accelerated metabolism and generated enzymes lead to rapid transformation process shortly after initial inoculation.

**DYNAMIC BIO-TRANSFORMATION.** TERRA is specialized in effective transformation, decomposition and liquification of organic matters, cellulosic fibers, proteins, fats, residual carbohydrates in animal waste. As a result the floating / sinking layers and blockages in channels, tanks and lagoons are dissolved. The manure turns into homogen liquid.












**ODOR CONTROL.** TERRA reduces the formation and release of smell, odor and toxic gases (ammoniac gas, hydrogen sulphide, nitrous oxide) significantly. Used in the barnes it supports the protection of respiratory system by air cleaning effects. It can reduces the pest with flies and mosquitoes. Fresh air and clean environment in stables provide best breeding conditions.

**N-P-RICH ORGANIC FERTILIZER.** TERRA increases the nitrogen level of the treated manure and transforms it into a valuable organic fertilizer. TERRA uses two methods to prevent nitrogen gas volatilization (loss): 1. The mineral complex adsorbs and fixes the ammonia gas in their matrix. 2. The enclosed microorganisms prevent nitrogen gas volatilization by fixation, recovery and conversion into plant available form. The emerged organic fertilizer is an inexpensive alternative to chemical fertilizers.



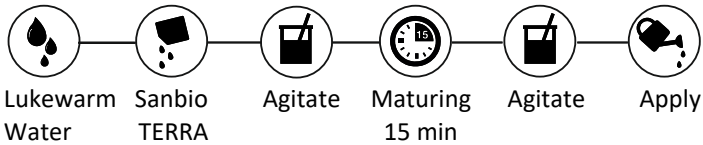
- 1 Micronized particles provide an extreme large reaction surface
- 2 Huge reactivity towards compounds due to charged and polarized physico-chemico complex
- 3 Fast reproduction and growth of aerobic microbes due to on-board oxygenation and starter food source
- 4 Fast colonialization of microorganisms at host matrix used as microhabitate
- 5 Rapid decomposition of organics due to effective high concentrated bacteria and fungi

## DIRECTIONS OF USE

<p><b>Solid manure</b> meap of manure, slurry, dung indoor and outdoor</p>	<p>Dissolve <b>10-15g TERRA</b> in <b>2L water</b> for solution suitable for <b>1 cbm</b> of solid manure, slurry, dung. Apply as working solution on entire area. Use watering can with shower or sprayer. Apply weekly or on demand.</p> <p>  </p> <p>2 L      15 g      1 cbm</p>
<p><b>Liquid manure</b> pit, tank, cesspool, lagoon</p>	<p>Dissolve <b>10-15g TERRA</b> in <b>10L water</b> for solution suitable for <b>1 cbm</b> of liquid manure. Inject the solution into the lower third part of the tank. In case of floating layers inject the solution at several points under the floating layer. Ensure well agitation of storage after inoculation. 1 application is sufficient in most cases. Repeat on demand.</p> <p>  </p> <p>2 L      15 g      1 cbm</p>
<p><b>Indoor bedding</b> shed, pen, stable, barn</p>	<p>Dissolve <b>3-5g TERRA</b> in <b>1L water</b> for solution suitable for <b>1 qm</b> of littered ground.</p> <p>  </p> <p>1 L      3-5 g      1 qm</p> <p><u>Alternative dosage calculation:</u> 0.05-0.1g TERRA per small-size animal (poultry, rabbit) per week 2-3g TERRA per medium-size animal (sheep, goat) per week 4-5g TERRA per large-size animal (cow, cattle, bull, horse, camel) per week After clearing away the dung apply as working solution on entire area. Use watering can with shower (use 50g TERRA per 10L watering can) or sprayer. Apply weekly or on demand.</p> <p>For dry shelves in poultry or as needed, TERRA can be dispersed directly in powder form on the floor:</p> <p> </p> <p>10 g      1 qm</p>

**OPTIMAL WORKING SOLUTION:** Use lukewarm water. Add TERRA. Agitate well. Wait 15min for maturing. The working solution should be applied promptly. Maintain agitation throughout the fertigation process.

Microorganisms in TERRA preparation are in spore form. Therefore, the product retains its beneficial properties over a period of at least 3 years.



## PACKAGE

5/25kg bucket

## SHELF TIME

3 years in unopened packages. Opened packages should be stored tightly closed.

## STORAGE

Store cool and dry. Temperature range +5...40°C. Protect from sunlight and frost.



## SAFETY

Read SDS carefully.

Keep out of reach of children.

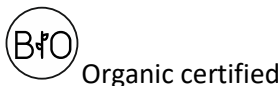
Wear protection gloves and eye protection.

Avoid breathing dust/mist/spray.

Wash with water thoroughly after handling.



## APPROVALS



The product meets following regulations:

Country	Standard	Link
Germany	Demeter Germany Demeter International FiBL Inputs list for the organic agriculture in Germany Gää Germany Naturland Germany Reg. (EC) 834/2007	→ <a href="http://www.betriebsmittelliste.de/de/bml-suche.html">http://www.betriebsmittelliste.de/de/bml-suche.html</a> (enter company name)
EC	EC 834/2007, EC 889/2008	→ <a href="http://www.inputs.bio">www.inputs.bio</a> (enter company name)

USA	American Regulation NOP (National Organic Program)	→ <a href="http://www.inputs.bio">www.inputs.bio</a> (enter company name)
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## COUNTRY OF ORIGIN

Federal Republic of Germany

## PRODUCER

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[www.sanbio.eu](http://www.sanbio.eu)

<https://www.youtube.com/channel/UCcP8e0Ev1wGnl93x44lGfMg>

## OTHER INFORMATION

Certain statements may not be applicable in all geographical regions. Product associated claims may differ based on government requirements. Product availability may vary by country. Please contact SANBOS for further information.

SANBIO® is the registered trademark of SANBOS GmbH, Germany.

The data given above is based on our continuous quality monitoring system. They do not exempt the user from his obligation to make an incoming inspection of the delivered product. The data are for information purposes and do not constitute any guarantee. It is the responsibility of the user to determine the product's suitability for his intended use.

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