

# MILORGANITE: It Is NOT The Cause Of Lou Gehrig's Disease

By Jim Spindler

Several recent articles by a local Milwaukee newspaper have alleged a link between amyotrophic lateral sclerosis (ALS or Lou Gehrig's Disease) and Milorganite, the organic fertilizer produced by the Milwaukee Metropolitan Sewerage District (MMSD).

These allegations have subsequently been cited by medical experts as unscientific and unproven.

Alan Rubin, Chief of the Wastewater Solids Criteria Branch of the Environment Protection Agency, said on February 12, 1987, "As of now there has been no way to draw an inference that cadmium, chromium or other substances in Milorganite were linked to ALS. In the studies we have, we have *never* (emphasis added) seen any trends or statistics indicating a deterioration of people's health because of the use of sludges."

Doctors do not know what causes ALS. Over the years, a wide assortment of causes have been suggested. These include viruses, poisons, exposure to electrical shock, exposure to house pets or animal carcasses, back and limb trauma (e.g. from athletic injuries), genetic diseases, hormonal abnormalities and many more.

None of these alleged associations has ever been proved. The disease remains a mystery. Milorganite was included in this unproven group of contributors when a San Francisco 49er football player listed it among a wide variety of things that three former teammates who contracted ALS might have come in contact with. The three had played together on the same field for the 1964 season. It is not even certain if Milorganite was actually used in the turf maintenance program. However, on the basis of the comment, one local Milwaukee newspaper chose to run with the story.

The Milwaukee Metropolitan Sewerage District is confident that Milorganite is not a cause of ALS. The workers who make Milorganite have had the level of metals in their blood analyzed over the last four years. These tests proved that the people who manufacture Milorganite had no greater concentrations of heavy metals in their blood than the population in general.

Furthermore, the Wisconsin's registrar of vital statistics has been quoted as saying, "I don't think there is any statistically significant difference between the state of Wisconsin and the nation in the death rate from ALS."

There are many other reasons Milorganite is a safe and effective product. Primary among these is the production process and quality control measures the sewerage district employs to assure a clean and safe product.

Specifically, the MMSD imposes strict heavy metal pretreatment procedures on Milwaukee industry. These precautions reduce the amount of heavy metals discharged into the Milwaukee sewer system. All wastewater is screened to remove debris and any large particles. The treatment process itself purifies the sewage by converting it to living microorganisms. These are subsequently denatured and become an organic bio-mass, ready for further treatment. Acids are added to the bio-mass to assist in drying. This further purifies the material. This "cake" is then dried in ovens that reach 1,200°F. The particles spend up to 80 minutes in this sanitizing environment,

which destroys all viruses affecting human beings. Spore formers are reduced to levels well below that found in normal garden soil. Volatile substances and any acid residue are also driven off. Milorganite is then screened again to insure no unwanted debris has survived and that the final product has the right particle size distribution to assure proper nutrient release.

Milorganite production is routinely checked every day to insure it meets MMSD's specifications for purity, quality and nutrient levels as well as low enough concentrations in heavy metals. Any product that might fail these checks is simply not shipped.

There are some additional facts about ALS and its relationship to heavy metals that everyone should be aware of.

As well as the wide variety of substances and circumstances that have been considered as potential causes of ALS, the disease also occurs in clusters of geographic "hot spots". For example:

A South Dakota outbreak was originally attributed to naturally-occurring selenium in the soil. Investigation eventually showed this was not the cause. The real cause was never identified.

There has been a recent outbreak of ALS in Guam. (No Milorganite has ever been sold in Guam). In this case the cause was attributed to a hormone in the local foodstuffs.

The level of heavy metals in Milorganite is low. Many of the news accounts refer to "high concentrations" of heavy metals, which is simply not true. For example, cadmium, one of the metals about which there is significant concern, occurs in Milorganite at an average rate of about 35 parts per million. Another way to think about this is that the application of a 40-lb. bag of Milorganite to 2,500 square feet of lawn (as recommended on the label)

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deposits *one one-thousandths of an ounce* of cadmium, about 1/100 the weight of an average grain of sand, in every 22 tons of soil, the average weight of 100 square feet of soil six inches deep.

There is nothing in Milorganite that is not also found in the surrounding environment. No "new" chemicals are created in the manufacturing process. Even heavy metals are in rainwater, drinking water, soils, foods and the air. They also are in items we use every day such as mouthwash, toothpaste, toilet paper, bath soaps, baby oil, shaving cream, pesticides and other fertilizers. A person will take in much more of these substances in what you eat, drink or smoke than they ever will from using Milorganite.

For heavy metals to get into a person's blood stream the substance carrying them must be ingested or inhaled. It is extremely unlikely anyone would eat turf, soil or Milorganite. But, even if they did the likelihood of ingesting enough cadmium to be dangerous can be illustrated using the example of vegetables: if an 18 year old person, who was a strict vegetarian, ate vegetables that *only* he grew (in soil with an unadjusted pH) fertilized with a sewage sludge containing about 75 ppm cadmium (twice the Milorganite level) for 50 years he *might* acquire enough cadmium to *possibly* cause a problem.

Another way to think about this is that a person would have to eat between 1½ and 6 pounds of Milorganite a year before exceeding the upper limit of cadmium intake recommended as safe.

Concentration through inhalation has been ruled out in the tests showing MMSD employees' blood to contain no more heavy metals than non-employees'.

Milorganite also has the backing of both the Federal Environmental Protection Agency and the Wisconsin Department of Natural Resources. Milorganite qualifies as a "non-hazardous" substance according to the EPA. The Wisconsin DNR allows up to *7 times* as much Milorganite to be applied to farm fields as would be applied to turf when following package instructions.

ALS existed before Milorganite was produced.

ALS occurs in countries where Milorganite is not, and never has been produced.

For 61 years, Milorganite has helped golf course superintendents and other turf managers maintain the highest quality turf. The MMSD will continue to produce and market Milorganite. It will also continue to offer the quality services of the Turf Service Bureau which includes the free soil analysis service.

As always, Milorganite will still have the qualities of:

- not burning,
- releasing all nutrients, major as well as micronutrients, especially iron, slowly as the plants need them,
- helping to break down thatch,
- helping to prevent various diseases and nematodes,
- adding valuable organic matter (75%) which increases the cation exchange capacity in sandy soil, the type of soils used in today's greens,
- indefinite storage because it will not cake,
- ability to melt ice and snow safely,
- and much more.

These facts are intended to answer any questions that may have come up with the recent publicity about Milorganite. If there are any other concerns the Marketing Staff at Milorganite will be more than happy to provide further information.

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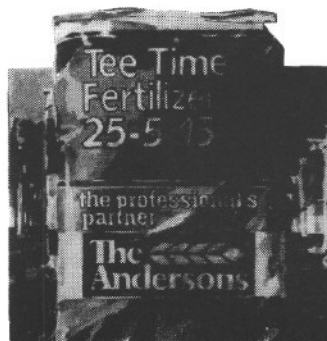
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