



MICROBIOLOGY AGRI-PRODUCTS AND RESEARCH ACTIVITY OF ELMOLIGHT BT.

Elmolight Bt. was established as an Australian - Hungarian joint venture in 1998. Our firm is engaged in the production of humus manures and garden soils necessary to alternative plant feeding, as well as deals with researches and services of soil protection, and microbiological conversation of organic pollutions.

Activity:

- microbiological treatment of communal sewage sludges;
- controlled – vaccine - composting;
- authorization of unlimited distribution of composts.

The proportion of canalization continuously increases in Hungary, as the quantity of sewage sludge – including a considerable nutrient content provided. Currently the biggest problem for the waterworks and for the local governments is the storage of communal sewage sludge – as a big mass of waste.

Our technology of composting both for the agriculture (cheap, high-quality nutrient replenishing product), and for the communal service providers (utilisation of sewage sludge; creation of new revenue source) we provide a solution to the above problem, as well as our technology decreases the overload on our environment.

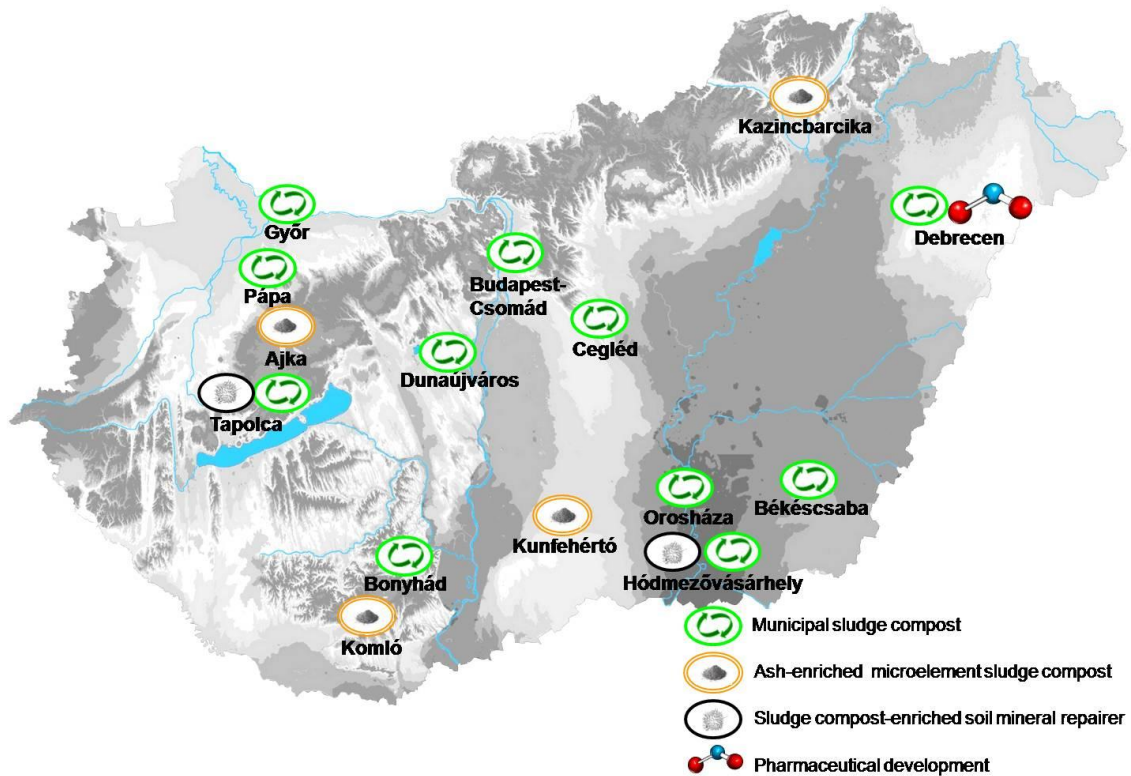
Advantages:

- Waste recovery – product insertion into a circulation;
- Potential new source of revenue instead of cost;
- Traditional agricultural machines can be applied to the technology;
- Composting process, which is biochemically and microbiologically controlled, standardized, having all authority licenses;
- We produce humus fertilizers in an average 60-day cycle, compared to other composting methods on the market (no need for post-incubation) and it can be adapted to other composting technologies (Kleen, Gore).

References:

- Tapolca (Biomass Super Biofuna compost)
- Budapest (Biomass Super FCsM compost)
- Debrecen (Biomass Super AKSD compost)
- Győr (Biomass Super Komszol compost)
- Cegléd (Biomass Super Ökovíz compost)
- Pápa (Biomass Super compost)
- Hódmezővásárhely (Biomass Super ASA compost)
- Kunfehértó (Biomass Super gold gate compost)
- Bonyhád (Biomass Super Bonycom compost)
- Veszprém (Biomass Solar compost)

Presence of the technology of Elmolight Bt in Hungary



Our technology and the Biomass product line won the **Central Transdanubia Regional Business Award for Innovation 1st place** from KDRIÜ vocational jury in 2011.



Elmolight Bt. carry on intensive research in the field of microbiology.

Like elsewhere in the world – seen from the industrial and agricultural perspective -, Hungary also has a lot of problem with industrial pollution and with the use of excessive agrochemicals arising from soil.

Damages resulting from the low-replenishment of organic matter are identical and equally serious evrywhere in the world:

- Soils go sour,
- Chemical, and therefore physical structure of soils deteriorate,
- soil life is slowly dying out, the number of beneficial micro-organisms are critically depleted,
- degradation of pesticides in the soil slows down,
- humus formation to stagnate or decline,
- increased leaching of fertilizer applied, therefore on one hand causes loss to the producer, and on the other hand contaminates soil and aquatic environment.

Livestock production is no longer able to provide sufficient quantity and quality of organic manure for intensive crop production, although we should return large amount of organic material to the biological cycle of soils to avoid ruining our essential production tool - the soil.

Looking around the world one may believe that the enormous weight of biomass produced by itself provides the solution. The microbiological degradation (bioconversion), without stabilization of incorporated organic matter into the soil mass causes more harm than good.

After the appropriate treatment - composting - the organic mass is perfectly suitable for basic maintenance of soil fertility, structure preserving, harmonious nutrition service.

Composting is such a spontaneous microbiological process, that ends with humification. The slow, hardly controllable and spontaneous process is, however, no longer suitable for the intensive, industrial plant production.

What is meant by "proper care"?

- We want to speed up the process!
- We wish to check and control the flow of the process, because of the risk itself is unsuccess and overhead!
- Our goal is the control of the process to get - according to the needs of the crop - the same and good quality product.

fundamental condition of controlled composting is the production of the proper starter cultures, which are specialized for certain types of biomass.

As a result of our research we have developed such starter cultures, which could be employed - guaranteeing the living conditions of controlled technology – for composting biomass of various sources quickly and effectively.

The end product of composting process as the benefits derived from biological humus manure summarized as follows:

- We are working with selected and verified microorganisms, produced by industrial fermentation. State control is the security for the user and for the environment.

- We are optimizing the species composition in the vaccine according to humus formation, in part having regard to the base material, on the other hand to pursuit long-term effect of proliferating useful species in the soil.
- During the intensive composting process, harmful species, plant- and human pathogenic microorganisms and worm eggs die.
- Strongly proliferating the useful deplete, mold training organizations, to a level that can not be achieved by spontaneous composting. The effects of traditional bio-manure is provided multiplied by this product, besides a much lower utilization of doses.

Humus fertilizers produced this way therefore regenerate and optimize soil life.

Our further researches were directed to increase the value of the resulting humus fertilizers making them more profitable for the farmers.

Primarily looking for biological solutions, we hold three development directions to reward:

- Entering natural enemies of soil organisms harmful to plants (pathogenic fungi, nematodes) into the humus fertilizer.
- Application of species, that produce metabolites stimulating plant growth and development.
- Operate with species exploring hardly accessible nutrients for plants (especially phosphorus) by their biological activity.

According to demands, we recommend the following products at the moment:

COFUNA (Biopost) organic humus fertilizer

(license number: 02.5/2300/3/2009)



Humus fertilizer produced by anaerobic fermentation, useful germ number is 2.7×10^9 per gram on plant substrate.

Application:

Pomicultures and vineyards:

- At plantation into the hole: 0,2-0,4 kg
- producer plantation: 2 tons/10 000 m² in 3-year period

Horticulture:

- 10 kg/100 m² on field
- 20 kg/100 m² at seedlings
- preparation for soil mixture and power cube 100-200 kg/m³

Cofhumin potting mix

(license number: 02.5/10803-2/2010)



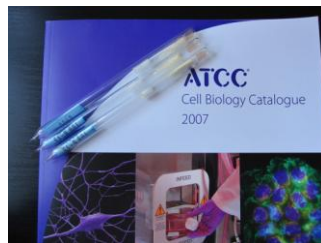
Peat-based garden soil, enriched with natural minerals and humat-based macro- and micro-elements.

Does not include animal manure, its "livability" is ensured by 10-15% organic humus fertilizer.

For those who intend to produce inoculation cultures from existing biomass, we offer the following:

Biomass κ microbiological inoculation culture

(license number : 02.5/10469-2/2010)



Concentrate of lignocellulose-degrading and humus forming micro-organisms with a number of 10^9 - 10^{11} /g.

Composting culture to start, control and accelerate composting of combination of municipal sewage sludge and lignocellulose-containing agricultural by-products. By using this, we can produce a compost with high biological value of soil conditioning and nutrient replenishment. The high number of cellulose-degrading part significantly shortens stalk-demolition on field.

Products manufactured and distributed by:

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"Organic matter is a value! Humus formation is a slow process, you may forego the nature!"

"There are neither rewards nor punishments in the nature: there are consequences!"