

Environment Friendly Bio-Ecological Farming Concepts (BEFC)





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The Farm (1)



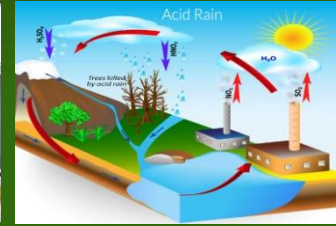
Food



Energy



Air Filters



Acid Rain



Manure Storage



Food Transport



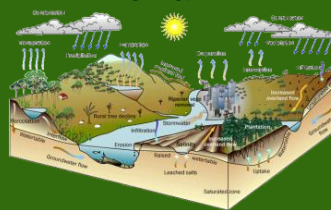
The Farm



Manure Transportation



Farm Sanitation



Water Management System



Humans and Animals Health



Manure Treatment



Food Storage



Growth Time



Cannibalism



The Farm (2)



Food: is considerable cost of farming. Poultry example: growth to approximately 2.4 kg will require approximately 4 kg of food. With costs of approximately € 1.60. 500,000 birds farm will have roughly € 800,000 cost for the food.



Food transport: dependent of quantity and distance to the supplier, the transportation costs could be visible in your food price. In above example approximately 800 tons of food, or equivalent of 40 containers/trucks, the costs can be estimated to € 40 for each km of transport (assuming € 1 per km for costs of transport).



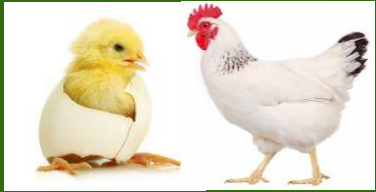
Food storage is another hidden cost that needs to be considered.



Energy used for heating, lights, ventilation and other needs adds to your costs of farming. Multiply kWh used on the farm with the price per kWh, or gas volumes used with the price per cubic meter to see the farming energy costs (per kg of .meat produced).



The Farm (4)



Growth time: the goal is to have higher yield in shorter periods and hence increase number of production cycles, while maintaining animal health and quality of meat.



Cannibalism: especially with poultry the cannibalism is one of the large ethical concerns and cause of yield. decrease.



Human and animals health: respiratory problems are common issue on animal farms for humans as well as animals. Improved health and reduced mortality is not only ethical concern of human and animal well-being, but is also generating higher yield . Achieving good result without excessive use of chemicals and pharmaceutical products is the goal you should be looking at.



The Farm (5)



Manure storage: each farm is producing considerable quantity of manure. It needs to be stored, but also the storage shall be environment friendly to avoid causing pollution. Costs to achieve that goal can be considerable.



Manure transportation: mostly with poultry, and pigs (less with cattle) the manure need to be processed before used as fertilizer or biomass for biogas plants. Transportation costs to the manure processing plants can considerably affect your overall costs.



Manure treatment: when talking about poultry and pig s manure the treatment (on site or remote) required can be costly.



Our Solutions



Food



Food Transport



Food Storage



Energy



Air Filters



Acid Rain



Manure Storage



The Farm



Farm Sanitation



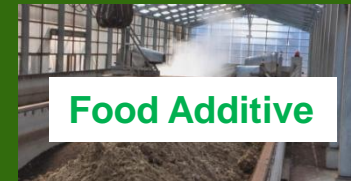
Water Management System



Humans and Animals Health



Manure Transportation



Manure Treatment



Growth Time



Cannibalism



Food Additive

BENEFITS

- 8-30 % yield increase and faster growth (additional production cycles).
- Liquid or granular form.
- Full vitamin and mineral supplementation, only calcium and salt are required.
- Better immunity and overall health, growth without chemical and pharmaceutical growth agents.
- No respiratory problems for animals and humans (employees).
- Increased fertility.
- The manure is drier and easier to clean.
- Close to zero cannibalism.

SAVINGS

- Up to 8 - 30% food reduction due to the better food conversion.
- Costs for the manure treatment are close to zero due to the noxious gasses reduction in digestion system. The manure can directly be used /sold as nitrogen fertilizer without cauterizing growth plants.
- Reduced need for antibiotics.
- Less fodders to process/ dispose.

Waste to Energy (Biogas) Systems Benefits



- 100% biological solution.
- Boost methane production volumes by 30+ %.
- Reduced BOD and COD.
- Eliminates odors.
- Scalable: from 100KW plants to multi-MW.
- Dramatically reduces H₂S hydrogen sulfide and NH₃ ammonia.
- Prevents equipment corrosion.
- Allows for higher ratios of difficult feedstock (chicken manure).
- Raises tolerance for toxins, antibiotics, high-sulfur feedstock and hostile pH levels.
- Protects microbes and allows for complete digestion efficiency – even in hostile AD environments.
- Overcomes microbial antagonism.
- Promotes end-product tolerance.
- Promotes STABILITY methane production Up to 20 times smaller footprint compared with competitors.
- Easy to implement.
- Small container units can be implemented in, or close to the farms to use manure directly.
- Minimal impact on landscape due to the small footprint and underground components.
- Possibility to deliver preprocessor for third party biogas plants (if you already have one) to increase third party plants efficiency up to 150%.

Waste to Energy (Biogas) Systems Savings



SAVINGS

- Up to 3 times lower costs than competitive devices.
- Small footprint, largely underground chambers.
- Up to 200% more energy efficient than competitive products..
- High quality methane produced, converted to the electricity.
- Low emissions.
- Durability.
- Close to zero maintenance costs.
- Up to 3 times less residual waste, hence reduced transportation and disposal costs.
- Could be subsidized by government (dependent of local regulations) as environment friendly solution.

WWMS – Waste Water Management System



BENEFITS

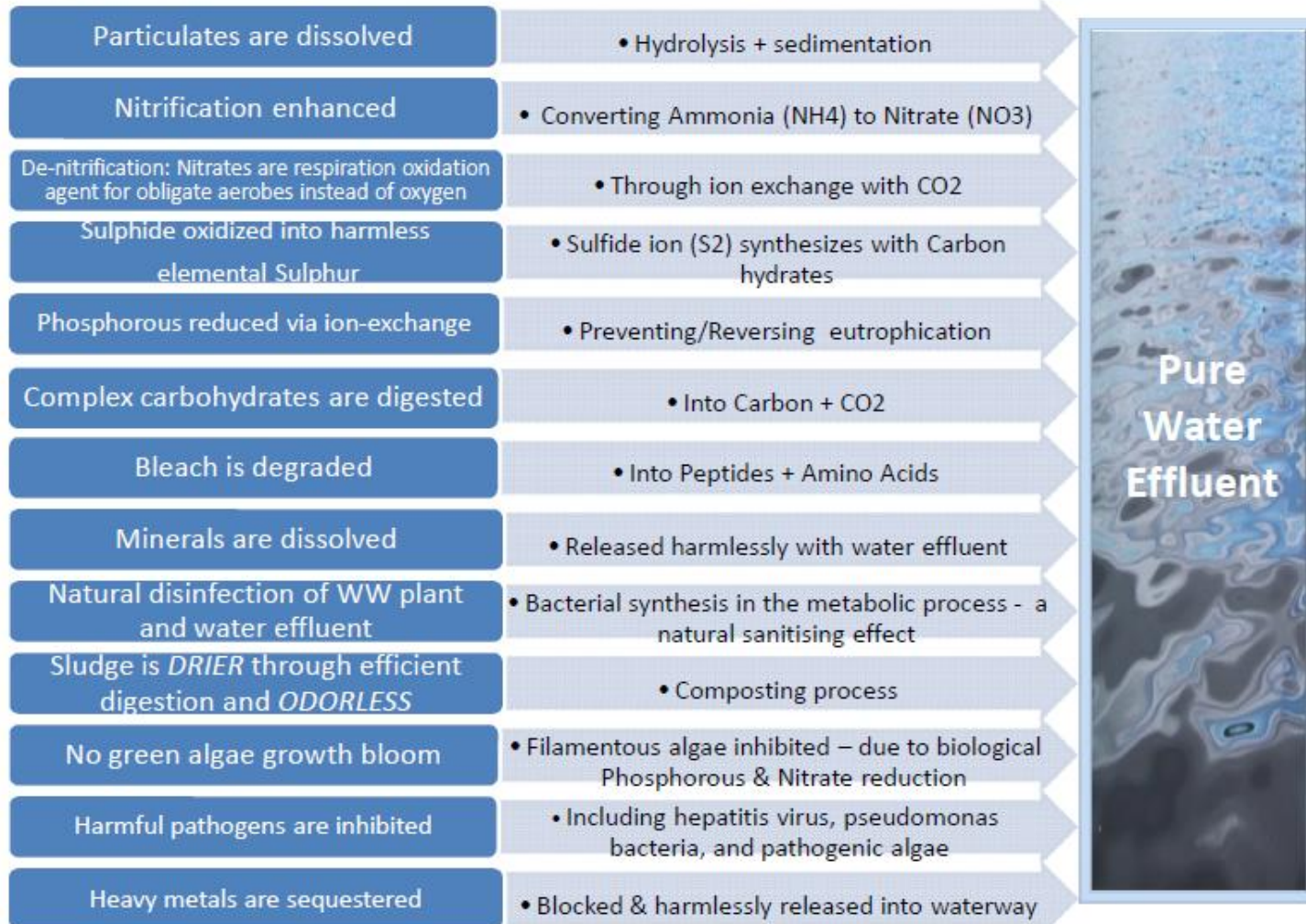
- 100% biological solution.
- Significant BOD, COD and SS reduction.
- Biological nutrient, nitrate, and phosphate reduction.
- Improved dehydration and decreased sludge volumes (20-40% less sludge dependent of organic content).
- Odor elimination via biological ion exchange.
- No chemicals.
- Reduced O₂ usage.
- Scalable: from 1-5 person unit up to desired size (hundreds of thousands population).
- Up to 20 times smaller footprint compared with competitors.
- Easy to implement.
- Underground implementation – minimal impact on landscape.
- Possibility to deliver preprocessor for third party WWMS to reduce retention time and enlarge daily capacity (in case you are running out of capacity).
- 50 years warranty.

SAVINGS

- Reduced energy costs: no energy required, 100% biological process.
- No special filters required (only for non biological waste separation).
- Construction costs: up to 20 times smaller in size than competitors products due to the faster retention period.
- Lower sludge treatment costs
- Durability.
- Close to zero maintenance costs.
- Could be subsidized by government (dependent of local regulations) as environment friendly solution.



Micro-biological Process





Farm Sanitation

BENEFITS

Treating the farm by spraying the sealing, walls and floor after each production cycle will:

- Reducing pathogens and other harmful bacteria. Brown seaweed is more effective on pathogens than Reservatol.
- Dramatically reduce the odor.
- Reduced Noxious gases – ammonia (NH₃), methane (CH₄), hydrogen sulfide (H₂S).
- Manure can spread immediately as available nitrogen fertilizer without cauterizing effect.
- Creating healthy environment for humans and next production cycle.
- No respiratory problems for humans or animals.

SAVINGS

- Simple operation (manual or automatic spraying), hence low sanitation costs.
- Preventing costs due to the potential disease developments.
- Manure can be directly used or sold as fertilizer.



Bio Filters

BENEFITS

- Biological solution for noxious gasses emission.
- Scalability: can be adjusted to practically any needs.
- Flexibility: can be adjusted to desire form and shape for specific purposes.
- Effectively reducing ammonia and sulfides emission.

SAVINGS

- Less costly than competitive products.
- Less maintenance costs.
- Durability.
- Could be subsidized by government (dependent of local regulations) as environment friendly solution.



Total Solution (1)

For the difference from our competition we can provide **TOTAL SOLUTION FOR BIOLOGICAL FARM**. It means you will have single point of contact for all processes, equipment and food additives used in the farm.

Advantage is also that you can implement solutions one by one and you do not need to do the entire investment at one time.

How does the total solution works?

- When ending production cycle you spray the entire farm with our product to assure healthy environment for next cycle. For that you can use manual sprayers or we can provide and implement automated spraying systems.
- You start using food additive as soon as you start next production cycle. Use additive in liquid or granular form from **DAY ONE** and reduce the food for the animals for 10%. Observe the growth and reduce the food as and when needed. Apply your food experience in every next cycle. Over the time you will eventually find the right balance of food required for desired growth.
- Due to the noxious gasses reduction in animal digestion system, the content of noxious ammonia and sulfates in manure will be reduced for about 50%. It will make manure suitable to be used as fertilizer with **NO ADDITIONAL TREATMENT**.
- When you implement our waste to energy solution, you can use manure in the biogas plants to produce electricity for your farms. Our biogas plants starts with the size of 20" containers with capacity of 500 kg per day. It can be placed inside the farm or next to it. This means, you do not need to manage and transport your waste, you can directly use it to produce the energy.



Total Solution (2)

- By implementing WWMS (Waste Water Management System) you will assure water treatment to the levels safe to be released in the environment. Not only that your water will be clean,, but the biological processes will continue after the water is released helping further cleaning underground waters, streams, ponds, or lakes (dependent where it is released) and hence helping the environment.
- If you use the water for farming land watering, the effects on the soil will be reduction of toxins, heavy metal, crude oil and at the same time soil improvement resulting in better farming yield.
- Acid woods and fields around (especially poultry) farms are known and recognized problem Our biological air filters will practically eliminate noxious gasses emission to the environment and prevent acid rains.

Dependent of the country and government policies you might be able to get substantial subsidies from the local government due to the biological farming processes implemented.

If desired we will assist you with processes to obtain [ISO 14000 standards](#) [family implementation](#)