Algae Breeding Technology powered by ensymm

The challenge when cultivating algae is that as they need light to grow, they require either vast acres of land or expensive lighting. Therefore, in order to use algae efficiently, it is necessary to develop algae which require much less light to grow, in order to realise a higher acre yield.

AlgMax develops, commercialises and markets technologies (especially algae which require little light to grow) for the production of biomass from algae grown in closed systems.

This innovative technology can realise a considerably higher acre yield compared to other algae technologies, such as open ponds or expensive photo-bioreactors. The required area for the production of the algae biomass is a factor 300-600 lower than the agricultural area required when using the open pond or photo-bioreactor technologies.

The produced biomass can be applied and utilised in various areas.

Raw material for biogas plants

After extracting the algae oil the remaining algae biomass can be used in biogas plants where the biogas can be used to generate electricity. The resulting heat can be used as a process heat for the cultivation and processing of the algae. The off-gases from the combined heat and power (CHP) plant (CO_2, NO_x) can be used to build up the biomass as can the waste from the biogas plant (post fermenter).

Biodiesel from algae oil

After extracting the oil contained in the algae it can be used for the production of biodiesel. The algae oil can be directly used as a fuel or chemically modified. The produced biofuels are those of the 2nd generation and therefore not in competition with food producers.

Food and feed applications

As an alternative to using the algae biomass in a biogas plant, the protein-rich biomass can be used as food or animal feed.

Overall, the algae biomass can be optimally utilised, thus making the whole system very energy efficient

Our key focus areas are:

Food

Covers nutraceutical and pharmaceutical products for human consumption, proteins, omega oils, food supplements and cosmetics etc.

Feed

Aquaculture,and animal feed, which is not just limited to fish farming, but also general livestock and even domestic animals

Fuel

Green energy, biodiesel, bio-ethanol, bio-gas, bio-oil, and jet fuel.

CO2

Ability to sequester CO2 and implement as profit making plant, rather than cost effects of sequestering

Waste water management

The ability of implementing the photobioreactor into existing waste water plants for water purification through nutritient absorption.