



SUN ALGAE
Technology

Sun Algae Technology's R&D Center in Austria Celebrates First Year of Lab - Operation at its new Facility

Wiener Neudorf, January 2016

The Biologist-Team of SUN ALGAE Technology is celebrating its first year of successful research of Algae-Cultivation methods using several different species.

Our team has achieved outstanding results in terms of growth rates, culture stability and lipid content.



We are right now concentrating our research on marine algae species, *Nannochloropsis Salina*, *Isochrysis Galbana* und *Tahiti-Isochrysis Galbana*.

We have designed special LED light tubes and installed them inside the lab-reactors. The LED "tree" imitates the (sun only) lighting method used in our industrial scale bioreactors. For that reason, we use LEDs, which yield a light spectrum very close to that of natural sunlight.

The new lighting system allows approximately 10x higher light input into the algae suspension than a conventional external lighting system. Therefore, we can achieve substantial growth rates even at high algae densities.





Mixotrophic growth plays an important role in our proprietary algae production system. Therefore, we focused our research in the last months on the optimization of growth parameters, which trigger the mixotrophic growth and achieve the desired “boost-effect” in the algae culture.

Latest research results show that using our new growth recipes we can achieve growth multiples of up to 3x over autotrophic growth.

Another focus of research has been the development of cost and yield-efficient methods of algae harvesting. Industrial applications require a simple, reliable and fast method of algae harvesting and algae lysing. We have always found traditional methods lacking in all those aspects.

Microfiltration not only shows cost advantages over other methods but also avoids the use of flocculation or other agents. Ultrasound algae lysing has sped up that process considerably without the use aggressive chemicals or rather slow enzymatic methods. Drying the algae in a freeze-dryer helps preserve the valuable Omega-3 lipids and our brand-new HPLC system allows extremely precise product analysis.

We are very proud of our biology team, which had a key-role in reaching those achievements in such a short time.

