

PRIVATE INVESTMENT IN ALGAE TO BIOFUEL RESEARCH

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Five million (*Reais = US\$ 2.5MM*) in the hands and an innovative idea in the mind. That's how Algae Biotecnologia, the newest company at Grupo Ecogeo, intends to invest in the research of microalgae for the production of biofuels.

Established earlier this year, the company located in Sao Paulo is the first Brazilian company to invest in the production of clean fuels from these microorganisms – only Petrobras (*state owned oil company*) and scientists related to Universities do it today. The difference in this case is in the production model.

Although they don't reveal details until a patent application is filled, scheduled for next months, Algae Biotecnologia is currently talking to two ethanol mills in Sao Paulo to develop a pilot-project in which by-products from ethanol production are incorporated into the process. The idea is to use what nowadays is wasted – residual waters, vinasse, sugarcane leaves, bagasse and CO₂ from fermentation – and integrate them in the process, solving two problems at once: the environmental liability and a viable and economical culture medium for microalgae cultivation.

"I studied all that was being done in the USA with microalgae and realized we couldn't fight against the giants. We had to get close to our reality, to Brazil's conditions" explains Sergio Goldemberg, technical manager of Algae, referring to the country's expertise in sugarcane.

An agronomical engineer, Goldemberg worked during last five years with vinasse distribution in the fields, what gave him the hint for the business. "It was a spark. Vinasse distribution in the fields is still a problem pushed under the rug", says the executive, mentioning an issue long known by his father, the physicist Jose Goldemberg, professor at the University of Sao Paulo and ex-secretary of environment of the State of Sao Paulo. "It also called our attention the diesel consumption in the mills".

Another innovation is the use of photobioreactors – a kind of transparent tube – for the microalgae cultivation. Being a closed system, it increases algae productivity, since it reduces contamination rates. "It costs two to three times more than open systems", as lakes and ponds, says Goldemberg, "but it is more controlled".

In order to proceed with the research, Algae Biotecnologia will invest R\$ 5 million, being R\$ 3 million from the Technological Fund (Funtec) from the National Bank of Economic and Social Development (BNDES), a non-reimbursable grant and the remaining from the Projects and

Studies Agency (Finep), National Council on Science and Technology (CNPq), and from company funds.

According to Goldemberg, one of the requirements from BNDES is a partnership with a Brazilian university. This is the reason why Algae has made an association with the Agrarian Sciences Center at the Federal University of Sao Carlos in the city of Araras, inland Sao Paulo state. Scientists at this center, with strong sugarcane research tradition have already identified three promising species, out of 15 pre-selected.

Presently the research is still in laboratory scale. But if everything goes as scheduled, Algae Biotecnologia will have a pilot-plant operational by next year. They expect to close a partnership with a mill in Sao Paulo within next two years.