« Green Dreams »

(Di Pascoli Thomas, M1 VRV)

In 2005, 1.6 billion tons of oil has been consumed in the world, that consumption had greatly increased and will increase again, the barrel's price has meanwhile increased by over 200% in 10 years, for finish experts say that the current level of CO_2 has never been so high since 2.1 million years, to remedy this, many solutions are in development for longer or shorter.

A Study by « Ipsos » conducted in 2008 show that over 8 out of 10 French say they are ready to use biofuels in the fight against global warming. 3 types of biofuels exist, first-generation of biofuels including biodiesel produced from vegetal oils from plants such as rapeseed or sunflower and bioethanol produced from sugar cane or corn mainly. It's that strategy which is currently the most developed but also has the least ecological interest because there is competition between food and energy.

The second generation of biofuels are represented by cellulosic ethanol, the more interesting ecologically and emerges gradually in recent years. This strategy aims to use switchgrass and plant waste to produce energy which reduces the problem of fuel but there are similar problems, including degradation of lignin.

Finally, the third generation of biofuels are the "algofuel", the most interesting because can increase yields and areas of applications (aviation, for example) without increasing deforestation, but for the moment the yields production and the availability of these fuels can't do the real deal with former competitors fuels derived from oil.

Many ways of study are growing in these different branches of biofuels in order to improve yields, production methods and especially to reduce production costs. An example is the growth of attached algae in bioreactor for reduce de production costs. This is especially news of algofuel subject of attention because it's those who have the best future.

Source: National Geographic October 2007, Volume 212, Number 4, page 38-59: "Green Dreams"

Applied microbiology and biotechnology Janvier 2010, Volume 85, Number 3, page 525-534: "Development of an attached microalgal growth system for biofuel production"