

## A Possible Solution to the Problem of Agricultural Slurry.

If any new scheme in the bioeconomy of Ireland were to come into being, absolutely nothing could be better than devising a means of turning agricultural slurry into bio-diesel. By the sheer volume of it and the environmental damage it is doing, it would make perfect sense to engineer a bio-chemical process that would use slurry as a base material to produce a significant amount of bio-diesel.

The farming sector is currently totally dependant on fossil fuels. This situation could be turned on its head with farms producing all their own diesel and a commercial surplus to sell, instead of plastering the pastures of Ireland with the stuff and polluting air and water everywhere. This scheme would make a massive dent in the carbon footprint and greenhouse gas emissions of the Irish agricultural industry and possibly lead the rest of Europe into better, cleaner farming practice. As a rich mixture of organic compounds, slurry might be eminently suitable material for creating bio fuel.

There is already in existence, a brewing yeast that produces bio-diesel instead of alcohol. A process using an organism of this nature would be the ideal.

In the USA there is a lot of research and interest in producing diesel from algae, and there are already American commercial production units up and running. They have even built algae farms to supply the raw material for the job. It just happens that the outstanding property of slurry is that it appears to be a super food for all kinds of algae. This aspect could be explored further.

Whilst slurry is not regarded as toxic, even when very dilute, any trace of it in fresh or salt water is rapidly taken up by all forms of algae, promoting rapid growth and reproduction. It is this aspect of slurry that is so detrimental to aquatic life in this country. Salmon, trout and eels have all dramatically declined in numbers over the last few decades ( in spite of conservation measures) in proportion to the ever increasing tide of slurry that is choking the waterways of Ireland with algal blooms. This growth chokes up the space that supports all the micro-life in fresh water. Insect larvae, tiny crustacea, this is the food supply for larval salmon, trout, eels and any small fish in general. No micro-life, no fish

Habitat destruction is the main cause of extinctions of wildlife all over this planet.

The agricultural industry of Ireland has entered a period of boom over the last decade or two, and everyone is very happy about it, government and farmers alike, but this prosperity has come at a cost; the damage being done to the waters of this country by the waste products from all this farming activity. Aquatic life in both fresh and seawater is under threat from this form of pollution.

Modern day agriculture has created a massive environmental problem in the form of slurry. It is sprayed as a liquid manure, in vast amounts, all over the country, onto fields and pastures, and in a wet climate such as we have, it does NOT stay put on the land. The liquid element of slurry is picked up by rainwater and is pouring into drains, lakes, ponds, rivers and streams all over Ireland, (as shown clearly in the recent report from the Environmental Protection Agency). Then, every last gallon of any polluted water anywhere inland, by the force of gravity, ends up in the sea. By sheer volume it is now visibly polluting the seawater around Ireland.

The coastal waters of Ireland are no longer the clear blue seas they formerly were, but are cloudy green with an algal bloom that is the direct result of too much nutrient in seawater, the nutrient being the ever increasing tide of slurry, and the water- soluble chemical fertilisers used extensively in Irish agriculture. This green bloom currently extends to 20 or 30 miles offshore, and is thicker than any year previous to this, as a direct result of the wet summer weather we've had this year, washing more of it off the land than ever before. Whenever there is a dry spell of weather, and the run-off abates, the nutrients are used up quickly by the algae and the water starts to clear, until the next wet spell delivers more of the stuff. This process has been going on for decades now, becoming progressively worse year upon year. This green bloom has a profoundly detrimental effect on the ocean's ecology by clouding the water to the point where visibility is reduced to as low as 1 metre. All the fish, crustacea, marine mammals and oceanic birds that have evolved their lifestyle over millions of years in clear seawater, are completely messed up by this form of pollution. If all the air

over the landmass were clouded with thick fog, affording 1 metre visibility for most of the year, how would human activity manage to carry on as normal? This is more habitat damage being done on a grand scale.

There are supposed to be rules and regulations in place about only spreading slurry in dry weather, but when there is no real dry spell, like this summer and many more gone by, with tanks filled and overflowing, it is all too often put out in broken weather, and is frequently seen being sprayed onto very wet soils in the face of approaching rain.

Most European and British rivers became heavily polluted by the industrial development of the last few centuries, and are now slowly being cleaned up over the last few decades. Whilst in this country, most rivers have only become polluted in the last few decades, after remaining sweet and clean for so long, right up to the introduction of slurry that began in the 70's.

Any reduction in the flow of this vile smelling stuff into the environment could only be welcome. Making bio diesel from it is the perfect solution to a huge problem.

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