

Turning Sludge into nutri-bio



Sludge is a by-product of the natural sewage purification process that takes place at all Anglian Water's sewage treatment works. Sludges produced from small works in the countryside are taken to strategically placed Treatment Centres, usually situated on large works, and turned into nutri-bio. Only two methods of treatment are commonly employed, digestion and liming.

Digestion

The digestion process consists of heating the sludge to a temperature of between 32 - 38 degrees and holding it there for about 12 days. The bacteria within the digester produce three things; carbon dioxide, water and methane. They do this by breaking down the volatile organic compounds within the sludge. The methane gas is burnt in special engines to produce heat for heating the digesters, making it self sufficient in energy requirements. The process of digestion achieves the conventional treated product standard of a two-log reduction. The liquid is then allowed to cool exposed to

the open air for a further period of 21 days before being dewatered to around 25% dry solids (CAKE) when it is sampled for its nutrient content prior to being recycled to agriculture.

Liming

Lime treated cake is dewatered liquid sludge to which Calcium Carbonate is added to raise its pH above 11.5. This effectively kills pathogens due to ammonia release and creates an inhospitable climate for pathogenic re-growth within the cake. The final product from this process is not a liming agent, since the NV is around 4%, (a 'sweetener').

HACCP

All sludge treatment, Biosolids production and application to land processes operate under a quality assurance scheme known as the HACCP (Hazard Analysis using Critical Control Points) regime. All these processes are strictly regulated by the Environment Agency.

If you would like further information or advice on any of the services or products available please do not hesitate to contact us on the details below.

Thank you.

Local Area Offices

Biosolids Recycling Team (North)
Anglian Water Services Ltd.
Littlecoates, Chelmsford Avenue,
Grimsby, North East Lincs,
DN34 4SB

Tel. 01472 627562 Fax. 01472 627531
E-mail. nutri-bio@anglianwater.co.uk

Biosolids Recycling Team (East)

Anglian Water Services Ltd.
Whitlingham STW,
Kirby Bedon Road, Trowse,
Norfolk, NR14 8TZ

Tel. 01603 241961 Fax. 01603 241943
E-mail. nutri-bio@anglianwater.co.uk

Main Office

nutri-bio
Milton House, Cambridge STW,
Cowley Road, Cambridge CB7 4PS

Tel. 01223 542889 Fax. 01223 542814
E-mail. nutri-bio@anglianwater.co.uk

Biosolids Recycling Team (West)

Anglian Water Services Ltd.
Cotton Valley STW,
Pineham, Milton Keynes,
Buckinghamshire, MK15 9PA

Tel. 01908 453040 Fax. 01908 453050
E-mail. nutri-bio@anglianwater.co.uk

Biosolids Recycling Team (South)

Anglian Water Services Ltd.
Basildon STW,
Courtauld Road, Basildon,
Essex, SS13 1DB

Tel. 01268 360151 Fax. 01268 360161
E-mail. nutri-bio@anglianwater.co.uk

latest news



Yield mapping trials indicate a significant yield increase on second winter wheat! Find out more information in the next issue of nutri-bio news.

coming up

Essex Young Farmers Country Show
15th May 2005

Cereals Event
15th and 16th June

Royal Norfolk Show
29th and 30th June

fact file



Scott Rayner Baker Fact File

Address
Harpenden (Luton)

Age
29

Occupation

Farm Sales Advisor, Beds and Bucks, including spreading scheduling, Trakway account management and land reclamation specialist.

Team Player

Last years' winner of the Team Player of the year award in the Biosolids team.

Qualifications

Writtle Agricultural College BSc Agriculture, FACTS qualified.

Work Experience

Contract farming, continues to work on farms through busy periods to keep up to date and for enjoyment.

Travelling

1 Year travelling in Australia and working on farms.

Hobbies

- Tinkering with his two "Marcos" classic cars, Broom Broom.

- Scott also enjoys bird watching.

nutri-bio news

this issue

Soil Solutions



Pauley Design brings nutri-bio into the 21st Century

Deep Soil Sampling

Turning Sludge into nutri-bio

Ploughing Match

Coming Up

Fact File



Pauley Design brings nutri-bio into the 21st Century



Pauley Design were delighted when approached by Emma Young and her team at **nutri-bio**.

The project was to create a new, more streamlined marketing approach, developing a new functional website and a more fresh consistent direction for the nutri-bio brand in print. The process has been both fun and extremely educational on many different levels, yet it was a steep learning curve for Pauley Design, in order to understand the nutri-bio brand, its services and products.

The website is aimed at the farming audience, providing all the information they need at the touch of a button, including nutri-bio products and services, NVZ guidelines, Code of practice, Legislation and of course contact information about all the Farm Sales Advisors; their technical knowledge, background and contact details. The website also contains nutri-bio fact sheets for you to print off and refer to, including information on heavy metals, organic pollutants, information to give to the public and many more. The website also allows you to keep up with our latest news and tips and backdated copies of nutri-bio news.



So log on now to www.nutri-bio.co.uk or for further information contact 01223 542889

soil solutions



Henry Hurrell from Newton Farms near Cambridge is a successful farmer, who farms over 3000 acres, but has had to diversify and modify his farming methods to keep up with the current agricultural climate.

Henry is a landowner, contractor and farms under a share partnership agreement. Henry has 6 clients who are situated around the Newton Area, plus two other farms of his own, one at Swaffham Prior near Newmarket, and one at Stretham, near Ely. Consequently Henry has to keep a keen eye on logistics to keep his costs down.

Henry grows Wheat, Malting Barley, Peas, Beans, Oilseed Rape, Sugar Beet and Mushrooms. Henry also has a suckler herd of 70 cattle.

He has 8 members of staff as well as himself. This includes his arable farm manager James, 3 full-time tractor drivers, one seasonal worker, one person responsible for the cattle, one person responsible for the mushroom farm (plus seasonal pickers) and one office administrator who works part time.

Henry's three farms have three different soil types, so cropping for each farm is very different.

SOIL FOCUS

Newton - South Cambs

Soil Type	Cropping
Chalk	Cereals
Gravel	Cereals

Swaffham Prior - Nr Newmarket

Soil Type	Cropping
Loam Clay	Sugar beet/Cereals
Peat	Let for Potatoes

Stretham - Nr Ely

Soil Type	Cropping
Clay	Sugar beet/Cereals
Peat	Let For Potatoes

Henry has diversified throughout the farm in order to use his resources efficiently. Firstly, he built industrial units for letting, which cost over half a million pounds. These converted barns are used for office units and honey processing. At present one unit is sitting empty, so in the short term he is making a significant loss..... nothing is plain sailing!

Henry was finding it increasingly difficult to make money from his larger suckler herd. So, he decided to invest in a mushroom unit, where he is seeing a small return. The mushrooms are mostly sold to Bedford farms, and he uses the compost afterwards to incorporate into his lighter soils for soil conditioning.

"Henry looked into nutri-bio as a cost effective solution to improve soil structure"

The soil at Swaffham Prior is lacking soil structure and only has moderate amounts of cattle manure and mushroom compost. Henry looked into nutri-bio as a cost effective solution to improve this. With a selection of nutrients and potential to increase yields, Henry calculated that he could save money on his fertiliser inputs.

Their first application of nutri-bio was spread before sugar beet in January 2004. nutri-bio releases a small amount of nitrogen in the first stages of growth, meaning the farmer need not apply any or so much bagged fertiliser at this stage, not only saving on nitrogen but nitrogen inputs too. The organic matter in nutri-bio is also helpful to sugar beet in the summer months as it helps to prevent sugar beet suffering from drought. Next in the rotation is likely to be winter wheat and possibly a second winter wheat. Interestingly nutri-bio has also shown signs of reducing the risk of take-all.

Newton farms are under the arable stewardship scheme, soon to become the countryside scheme. This covers the farms at Newton, including beetle banks, wild bird mixtures and field margins linked from wood to wood. Henry has found that diversification, the stewardship scheme and reducing his inputs is increasingly important. The Cap Reform may mean that some share partnership agreements may become less profitable due to the change in area payments from production.

Greenstead Green and District Agricultural Club Ploughing Match



Sunday 19th September 2004, was a beautiful day for the Greenstead Green and District Agricultural Club Annual Ploughing Match.

The ploughing match was hosted by Chris Butler of Greenstead Green Farm. It was a beautiful sunny morning for the event with over 30 competitors. nutri-bio sponsored the Vintage Conventional Class with 10 entrants.

The judges chose John Webb to be the lucky winner from Littley Green, Essex driving a CATERPILLAR D2 and Ransomes Trained Plough. This was definitely the perfect day for Vintage Tractor enthusiasts.

Using Organic Manures Means Deep Soil Sampling is Almost Essential

Applications of organic manure on arable land, particularly in Nitrate Vulnerable Zones (NVZs), will increase the need to improve the accuracy of nitrogen recommendations. According to East Anglian based independent consultant Iain Turner, one way of doing this would be by soil testing:

"The new NVZ rules require growers to follow the Codes of Good Agricultural Practice which refer to DEFRA fertiliser recommendations in Bulletin RB209. These recommend that soil should be sampled to a depth of 90cm - the Soil Mineral Nitrogen (SMN) analysis method - where high or uncertain amounts of soil nitrogen can be expected."

These recommendations state that direct measurement and estimation of the key components of Soil Nitrogen Supply (SNS) - SMN, total crop N and mineralisable N - will usually result in the most accurate assessment of the amount of soil nitrogen available for the crop, and therefore the most accurate nitrogen fertiliser decisions.

"Soil sampling company Envirofield, who work in close cooperation with Anglian Water operate Geonor deep sampling equipment mounted on six-wheel ATVs and can test fields quickly and representatively to give an accurate measure of SMN, usually the largest contributor to SNS. By using data collected in the autumn and analyzing the crop appearance in the spring, Envirofield are also able to estimate the amount of N taken up in the autumn," says Iain.

"Where the organic matter content of the soil is low to average, the DEFRA recommendations suggest that this amount of N can be ignored. For higher organic matter soils, Envirofield use a typical value derived from trial work. From this data we can produce an SNS index which relates directly to the tables in Bulletin RB209 and from which crop fertiliser nitrogen requirements can be calculated."

The cost of the complete service, from sampling to report, would be covered by a saving of only 10kgN/ha or an additional wheat yield of 44 kg/ha on a 15ha (37 acre) field or indeed by an improvement in crop quality.

"Samples taken in the spring of 2004 showed variations in soil mineral nitrogen levels between 25 kg/ha and 400 kg/ha of available N. Where organic manures had been used in the recent past the levels were usually at the higher end of the range and more difficult to predict with any accuracy. The location in the soil profile was also more variable which would influence a crop's ability to utilize the nutrient as the spring growth begins. The high level of lodging in the summer of 2004 emphasises the need for accuracy in nitrogen inputs. Deep soil sampling is integral with this" concludes Iain.

