

SWEET CUPS OF TEA - SEWAGE EFFLUENT TO IRRIGATE CANE

Creative Solutions for Agriculture alumni member Bonny Bauer sets out with a rural commentary on the new moves afoot as the Smart State is setting in place an ineffective plan along the length of the Queensland coast to use agricultural lands as a "kidney filter" for municipal sewage effluent. Rather than pointing fingers, she set out to hold hands with conventional farmers to help them understand nutrient cycling by presenting creative solutions for existing problems with American soil scientist and biodynamic farmer, Hugh Lovel.

By **BONNY BAUER**

During July, Natural Resource Management and Biological Soil Conditioning Workshops were conducted for Horticultural, Banana and Cane Industries in North Queensland. This was an appropriate forum to raise reasons as to why all farmers need to be concerned at the move towards redirecting effluent. As Lovel explains, recent scientific research carried out on Lake Michigan, the water source for Chicago, suggests one could easily get their daily intake of Prozac by drinking from the household tap. The water intake for Chicago is within viewing distance of the outfall of wastewater from the sewage treatment works. Assays carried out on Chicago drinking water raised serious alarms in regards to the pharmaceutical content of this water.

The government's concept of farmers and agriculture being responsible for the removal of community waste via the use of sewage effluent to irrigate cane fields is thus worthy of timely consideration. It is important to note that while anecdotal evidence is generally raised in respect of Chinese cultures carrying out this practice in agriculture, what is not mentioned is that sewage in that form was devoid of pharmaceuticals and false estrogenic chemicals. Even more importantly, sewage was transformed through two or three purposes prior to human

consumption. An example would be to irrigate a pasture, which then grew grain, which was fed to livestock before being consumed at the end of chain by human beings.

The Queensland Minister for Natural Resources and Mines, Hon Stephen Robertson told state Parliament on 28 May 2003 that the use of sewage effluent to irrigate cane fields was imminent. I would argue that what is required is eco-effective urban management of wastes. Suburban designs have been deficient all the way through to date, and a more sustainable system that handles ones own waste is required - not one that from the outset makes farmers the scape goats for cleaning up the mess that society has made. These questions and many others will require a lot of input from future thinking people to be able to design a sustainable future, and that has not happened in this instance. For we well know that we cannot keep expanding forever and think it will be okay.


In North Queensland, the forgotten "R", the rural wedged between reef and rainforest, is increasingly finding farmers

faced with being vilified for the death of the Great Barrier Reef via nutrient losses from agricultural lands. What is not discussed is that every conventional farmer has done exactly what he has been told - whether that was carrying out the 1930's Federal Rainforest Eradication Policy, subsequent State Government directives to clear the selections or lose them; or following the advice of the Bureau of Sugar Experiment Stations, Department of Primary Industries or agronomists from chemical companies.

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Sewage treatment works are unable to remove pharmaceutical compounds and false estrogenic hormones, and yet the Queensland proposal sets in place a greater cause for concern. The Natural Resources Minister has stated that Queensland Government scientists have identified a potential win-win opportunity for local councils, canegrowers and the environment, through the beneficial use of municipal sewage effluent. He believes the answer is using effluent ►



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BONNY BAUER SUGGESTS THAT IF NEW MOVES TO IRRIGATE CROPS WITH SEWAGE EFFLUENT GOES AHEAD, WE MAY BE GETTING MORE THAN WE BARGAINED FOR WHEN WE ORDER SUGAR IN OUR NEXT CUP OF TEA

water to irrigate cane fields to achieve significant improvements in crop yields as well as a corresponding reduction in nutrient discharge from council sewage treatment plants.

It is important to be reminded at this time, that fingers are consistently pointed at agriculturists as being responsible for nutrient run offs - a clear identification that conventional farm lands are an ineffective kidney filter for the existing use of water soluble fertilisers. The false estrogenic effects resulting from the inability to remove such chemicals from sewage treatment wastewater has considerable longer term connotations for such a proposed move as using waste water to irrigate agriculture.

Lovel offers creative solutions to embattled farmers through learning to see the soil as a living, symbiotic medium for natural plant growth, and the benefits of the nutrient cycling activity of a health soil food web leading to fixation and reduction of off farm sedimentation. In recognising sewage effluent contributes to the discharge, the government wants to rearrange deck chairs on the titanic by making farmers the fall guy. Minister Robertson proclaims that "Local authorities are currently making decisions about how to minimise the amount of nutrients being discharged back into the environment through effluent water produced by 35 council sewage treatment plants operating in coastal Queensland." "This issue has important implications for the Great Barrier Reef because many of these sewage treatment plants are located close to cane lands along the coastal strip stretching from Beenleigh to Port Douglas," he said.

The end process of this potential use of farmland to act as a kidney filter warrants further investigation and clearly we should be calling on the Queensland

Government Natural Resources and Mine's scientists who worked with the CSIRO on delivering this gem for agriculture, to "show me the science." On 12 June, 2003 the University of Colorado led study released findings funded by the Andrew Mellon Foundation on the affects of excess nitrogen on human health. Co-authors on the paper included Cornell, Harvard and Princeton Universities, the Woods Hole Marine Biological Laboratory, the National Centre for Atmospheric Research and the Institute for Agriculture and Trade Policy in Minneapolis.

The study has identified that roughly half of the inorganic nitrogen ever used on the planet has been applied in the past 15 years. Human conversion of nitrogen to such usable forms as the synthesis of nitrogen fertilisers, accounts for the majority of the global change - and certainly more than all natural processes combined. This leads to a number of problems, including air and water pollution. Excess nitrogen can inhibit crop growth, increase allergenic pollen production and the dynamics of several vector borne diseases including West Nile virus, malaria and cholera. Associate Professor Alan Townsend of Colorado University said that while nitrogen studies have focused on problems from nitrogen rich runoff from agricultural lands such as losses in biodiversity, increased acid rain and changes in coastal ocean ecology - oxygen poor "dead zones", clearly excess ni-

trogen can contribute to respiratory ailments, heart disease and several cancers.

Yet in Queensland, Minister Robertson believes "Our scientists have identified that sugar cane yields can be boosted by about 40 tonnes per hectare by applying about three mega litres of effluent irrigation and that local authorities should recognise nutrient-rich effluent as a valued resource and explore options to reticulate sewage treatment plant effluent as irrigation water for local cane farms," he said. I strongly advocate that farming organisations should challenge this "grey/black water" approach as a win-win potential for local councils, canegrowers and the environment as the Minister already recognises by his statement that "For local authorities, it means councils can significantly reduce point source discharge of nutrients back into our waterways without having to invest in expensive nutrient removal equipment at their sewage treatment plants." His belief that by using cane lands as a "kidney" to filter out the nutrients, the environment would benefit through significant reductions in point source discharge of nutrient-rich effluent from council sewage plants back into our waterways, is misguided to say the least. While a local authority with a 30,000 person secondary treatment sewage plant may be considerably better off investing in an irrigation re-use scheme rather than upgrading to a tertiary sewage treatment plant, agriculture again becomes poorer for the bad advice sent its way. ■



About the author

Bonny Bauer is a Rural Commentator and Research Consultant based in Tully - far north Queensland.

Bonny has been heavily involved in the organics industry for many years, and has spent much time with internationally acclaimed specialists in organic management practices.

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