

the drumstick

Autumn 2013 | Vol 31 No 1

Welcome

Welcome to the Autumn 2013 edition of the Drumstick newsletter.

The new Food Safety Standards for chicken meat growers have finally been legislated and are now in effect. This essentially means that every commercial chicken meat grower in Australia will require a licence to grow chickens for processing. An article on the food safety standards has been included in this edition of the Drumstick and will hopefully shed some light on what this means for growers.

Bird densities have been debated recently by some growers and there is some confusion about what the law actually says about densities, and about who might be liable if bird densities exceed guidelines. A short article on the issues and liabilities associated with bird densities addresses some of these questions in this issue of the Drumstick.

This issue also deals with some new and some old technologies for saving power, reducing odour, keeping neighbours and councils from knocking on the door and for saving money and increasing productivity. The articles cover trees on farms, biomass energy heating to replace LPG and new technology out of Singapore which promises to turn litter and dead birds into high value compost in just 24 hours.

There are also plenty of stories about industry updates, industry news and other bits and pieces I hope you find informative or at the very least amusing.

The Drumstick is meant to be a useful information source and forum for growers and others in the industry. If you would like specific stories or topics addressed or if you would like to make a contribution to the newsletter please contact me to discuss your ideas. I would be more than happy to hear from you.

*Best Wishes
Byron Stein
Editor*



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THE DRUMSTICK

The Drumstick is a free quarterly newsletter produced by NSW Department of Primary Industries, providing information and updates for the poultry industry.

CONTRIBUTIONS

Letters and stories from growers and industry personnel are always welcome.

ADVERTISING

1800 copies of The Drumstick are distributed each edition. We welcome advertisements and offer very competitive rates. Contact Joanne Ottaway for more information.

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DISCLAIMER

The information contained in this publication is based on knowledge and understanding at the time of writing. However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check the currency of the information with appropriate advisers.

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PROfarm goes online

PROfarm online delivers training right to your desktop, offering convenience and easy access at a time that suits you.



Rather than attending at a fixed time, you can view your training material online at any time - from any internet connected computer.

Our learning material is relevant to industry, intuitive and provides opportunity for collaboration and interaction with other students and peers.

While you are enrolled in the course you are able to login as often as you like, starting and stopping your course to suit your own schedule.

The enrolment process

Once you are enrolled in one of our courses the education advisor will contact you within five working days to:

- introduce the course
- walk you through the log-in

This will help you to become comfortable with the online training system and aware of the training and assessment process.

What training is available?

Available online courses include:

- Develop a whole farm plan
- Develop and review a farm business plan
- Maintain farm safety
- Manage soils
- Manage staff
- Prepare budgets and financial reports

How do I enrol?

1. Choose your course
2. Register

You can either:

Enrol online at www.dpi.nsw.gov.au/agriculture/profarm/registration/online

Or get in touch with one of our education advisors:

Total College, CB Alexander Campus

Phone: 1800 025 520

Email: profarm@total.com



Drumstick GuidePost



The Drumstick GuidePost contains links to useful websites, resources, contact details and other information for the poultry industry. The intention is to grow the GuidePost as new resources and information is gathered and discovered. If you know, or are aware of

any useful websites or other resources pertinent to the industry, and which are not displayed below, please let the Editor know so that we can continue and develop this resource into a truly useful reference for everyone in the poultry industry.

Topic	Description	Reference or contact details
Research and Development		
RIRDC Chicken Meat Program	This site contains a large number of very useful project reports ranging from topics on nutrition, litter re-use, energy efficiency and much more.	https://rirdc.infoservices.com.au/collections/cme
Poultry CRC and Poultry Hub	The Poultry CRC conducts research and drives education and training to help Australia's poultry industries produce more from less, sustainably.	www.poultrycrc.com.au/ www.poultryhub.org
Poultry Research Foundation	The Foundation sponsors industry related research, assists in the training of scientific personnel and acts in an industrial liaison capacity.	http://sydney.edu.au/vetscience/foundations/prf/introduction.shtml
Peak Industry and Coordinating Bodies		
Australian Chicken Meat Federation	ACMF is the peak coordinating body for participants in the chicken meat industries in Australia.	www.chicken.org.au
Australian Chicken Growers Council	The Australian Chicken Growers Council (ACGC) Limited represents the interests of contract meat chicken growers at the national level.	www.acgc.org.au
Australian Egg Corporation Limited	The Australian Egg Corporation (AECL) is a producer owned company which integrates marketing, research and development and policy services for the benefit of all stakeholders.	www.aecl.org
NSW Farmers Contract Poultry Group	The Contract Poultry Group has 10 members representing all geographic growing areas of the state on a proportional basis.	www.nswfarmers.org.au/policy_committees/poultry_meat
Poultry industry news and technical articles		
WorldPoultry.net	Global poultry news, events, market analysis, technical articles and much more.	www.worldpoultry.net
The Poultry Site	Updated daily, the web site delivers up-to-the-minute industry and product news, technical articles and information on a wealth of subjects including health & disease, nutrition, technology and much more.	www.thepoultrysite.com

Full page ad – Dieci

Topic	Description	Reference or contact details
The Poultry Digest	Poultry Digest is the only independent commercial publication delivering industry news to the layer (egg) and broiler chicken meat industries in Australia and New Zealand. We also publish information of other commercial poultry species like duck, turkey and quail.	http://www.primarymedia.com.au/index.php?option=com_content&view=article&id=6&Itemid=4
Biosecurity		
Australian Government Department of Agriculture, Fisheries and Forestry	The Australian Government Department of Agriculture, Fisheries and Forestry website has a wealth on information and resources on biosecurity for the poultry industry.	www.daff.gov.au/animal-plant-health/pests-diseases-weeds/biosecurity/animal_biosecurity/bird-owners/poultry_biosecurity_manual
Farmbiosecurity.com.au	Farm Biosecurity is a national education and engagement campaign which aims to help producers reduce the risk of diseases, pests and weeds.	www.farmbiosecurity.com.au/
NSW Department of Primary Industries – Biosecurity Section	Livestock producers and owners are in the best position to protect their own animals, and those of their neighbours and the wider livestock industries, by adopting good biosecurity practices.	www.dpi.nsw.gov.au/biosecurity/animal
Poultry housing, ventilation, husbandry and other technical information		
Auburn University	Poultry ventilation and housing tips. Based on American research and conditions.	www.aces.edu/poultryventilation/
University of Delaware Poultry Extension	Information on just about anything poultry. Based on American research and conditions.	http://sites.udel.edu/poultryextension
Avian Advice	Information on just about anything poultry. Based on American research and conditions.	www.avianadvice.uark.edu
poultryventilation.com.au (University of Georgia)	This site contains a wide variety of information related to poultry house environmental control and energy conservation:	www.poultryventilation.com
Animal Welfare		
Animal Welfare Science Centre	Our scientific research and teaching capacity in animal welfare science is considerable and we have made many important national and international contributions to animal welfare research, teaching and training.	www.animalwelfare.net.au
RSPCA Science Updates	Every quarter, the RSPCA Australia science team produces the Animal Welfare Science Update. The aim of the update is to raise awareness of recent developments in animal welfare science that relate to the work of the RSPCA.	www.rspca.org.au/resources/science-updates

Topic	Description	Reference or contact details
Food Standards and Food Safety		
NSW Food Authority	The NSW Food Authority is the government organisation that helps ensure food in NSW is safe and correctly labelled. Their website has information on the new food safety standards for chicken meat.	http://www.foodauthority.nsw.gov.au/
NSW Legislation, codes of practice, technical information, industry guidelines and best management practice documents and more		
NSW Department of Primary Industries	NSW DPI's role is to provide support to the poultry industry through the provision of an extension officer, research scientists, diagnostic laboratories, publications, poultry keeping courses and regulatory services. We also have extensive information on landuse planning and development for intensive livestock industries.	www.dpi.nsw.gov.au/agriculture/livestock/poultry www.dpi.nsw.gov.au/environment/landuse-planning/agriculture
NSW based poultry meat processing companies		
Baiada Poultry Pty Limited	Baiada Poultry Pty Limited is a privately owned Australian company which provides premium quality poultry products throughout Australia.	www.baiada.com.au
Cordina Farms	Is an Australian owned family company with 65 years experience in the Poultry business.	www.cordina.com.au
Inghams Enterprises	Is a family company that began on a small farm in south-west Sydney more than 80 years ago. Since then it has grown into a multi-faceted company and one of the largest producers of chickens and turkey products in Australia.	www.ingham.com.au
Red Lea Chickens	Red Lea Chickens produces more than 100 product lines that are sold on to Wholesalers, Supermarkets, Butchers, Restaurants, Hotels and Clubs as well as 47 Retail Outlets of their own that sell direct to the public.	www.redlea.com.au
Pepe's Ducks	Pepe's Ducks is now the largest producer of ducks in Australia and New Zealand, producing over 70,000 ducks per week. The company consists of its own broiler farms, breeder farms and hatcheries.	www.pepesducks.com.au



Licensed to grow

Byron Stein, Editor

NSW Growers! Have you got your NSW Food Authority licence?

This information is for NSW chicken meat growers only. Poultry meat growers in other states and territories should consult their relevant government body to determine what their food safety requirements are.

Key dates:

1. **1 May 2013** – you must have applied for a licence with the NSW Food Authority by this date if you grow more than 100 birds. Failure to do so will result in enforcement action.
2. **1 July 2013** – you must have implemented a **food safety management statement (FSMS)**.
3. **1 July 2013** – verification program commences

Key requirements:

1. Each grower with more than 100 birds must be licensed by the NSW Food Authority (growers with up to 100 birds do not need a licence but must notify their business details.)
2. You must have a food safety management statement (FSMS).
3. You must pay an annual licence fee if you have 1000 birds or more (\$308 per farm) and a one-off \$50 application fee.
4. Your business will be inspected at least every 36 months to ensure you are complying with the FSMS and other regulatory requirements.

not need a licence. However, these businesses must notify their business details to the Authority at: www.foodauthority.nsw.gov.au/industry/food-standards-and-requirements/business-notification/

Businesses growing more than 100 birds at any time will need to be licensed with the Authority.

Businesses growing 1000 birds or more at any time must pay an annual licence fee (\$308 for the 2012-2013 financial year, which may be adjusted annually by CPI) and a one-off licence application fee (\$50). The Authority is waiving the fees for businesses growing fewer than 1000 birds.

Licensed businesses will also need to have a food safety management statement (FSMS) and be subject to a verification program.

Obtaining a licence

Most large commercial growers will be posted a letter and a licence application form, either directly from the Authority or through their processor.

If you haven't received your licence application form you can download one from the Authority's website at www.foodauthority.nsw.gov.au/industry/industry-sector-requirements/meat/poultry/

Businesses that have not applied for a licence by 1 May 2013 will be subject to enforcement action in accordance with the Authority's Compliance and Enforcement Policy.

Your business is deemed to be licensed after you have submitted your licence application form and have paid the appropriate fee (where applicable). You will have until 1 July 2013 to implement a FSMS for your business.

The food safety management statement (FSMS)

A FSMS is a statement that sets out how the business complies with the requirements of the national standard. This includes examining, identifying, controlling and verifying the potential food safety hazards in your business's operations. Your FSMS needs to be approved by the Authority. For small independent growers this will be done on-site as part of the verification program. For contract growers this will be done centrally through the applicable processor by the Authority before 1 July 2013.

The verification program

The verification program will commence from 1 July 2013 and involves an authorised officer from the Authority visiting your premises to check that your

A new food safety law commenced in NSW on 1 January 2013

As you would be aware, FSANZ introduced a new national Poultry Standard (4.2.2 – Primary Production and Processing Standard for Poultry Meat). This Standard commenced in NSW, by amendment to the Food Regulation 2010, on 1 January 2013.

The NSW Food Authority (the Authority) is the government agency responsible for regulating and monitoring food safety across NSW – from primary production through to point-of-sale.

What this means for your business

Businesses growing up to 100 birds at any time do

Full page ad – Globe Australia

business complies with your FSMS (ie checking that you are doing what is outlined in your FSMS) and others legislative requirements.

Poultry growers will be inspected every 36 months and the annual licence fee will cover the cost of these visits. However, any follow-up action will be fully cost-recovered.

Resources for businesses

To assist poultry growers, the Authority has developed a FSMS template for small independent poultry producers which can be downloaded for free as a Word™ document that can be customised.

These resources and more information on the Standard are available on the Authority's website at: www.foodauthority.nsw.gov.au/industry/industry-sector-requirements/meat/poultry

The licence form has also been added to the general industry forms and licences page on the Authority's website at:

<http://www.foodauthority.nsw.gov.au/industry/forms-and-licences/#.UZDcqCFArmU>

If you have any questions please contact the Authority's helpline on 1300 552 406 or email contact@foodauthority.nsw.gov.au

Further resources and information about the new food safety requirements are also available at the Australian Chicken Meat Federation website <http://www.chicken.org.au/page.php?id=245>

STOP THE PRESS!

NSW Farmers and the NSW Food Authority will be holding joint information sessions on the new food licensing requirements.

Dates and venues of the information sessions are:

- Thursday 4 April at Mittagong RSL 5–7pm (Inghams and Red Lea)
- Thursday 10 April at Prospect Hotel 5–7pm (Red Lea, Cordina, Baiada)
- Tuesday 16 April at Beresfield Bowling Club 5–7pm (Steggles, Baiada)
- Tuesday 23 April at Mangrove Mountain 5–7pm (venue TBC Baiada, Cordina, Inghams)

A representative from the Authority's policy and compliance unit will be attending.

For more information contact Ray Lee from NSW Farmers.



Half page ad – Intensive Farming Supplies Australia

Biomass Heating Systems for broiler sheds – a feasible alternative to LPG or pie in the sky technology?

Byron Stein, Editor

I was recently listening to an interview with a large scale chicken meat farmer in the United Kingdom who is using biomass heating technology rather than traditional LPG. What really got me interested in the story are a couple of things the farmer said during the interview with the BBC. These were:

1. "Our birds on average are converting 1.6kg of feed into 1kg of chicken, and this is something we have been able to improve recently because we have changed our heating system. We are running the houses much drier which the chickens appreciate, and in turn that is leading to very low levels of hock burn and pad burn"
2. "These are ailments that chickens can have when the litter that they are running around on gets very wet, but as you can see in this house the litter conditions are extremely dry, so levels of hock burn and dermatitis are very low"
3. "We've slashed our figures from using LPG in the houses to using our biomass hot water system"

These statements raised some of my own questions, namely:

- What is biomass heating?
- Why is litter drier when using biomass heating instead of LPG?
- Is biomass heating cheaper to run than liquid petroleum gas (LPG) heating?
- Can dry litter really improve FCR?
- Is biomass heating feasible in Australia and has anyone crunched the numbers to show it can be economically viable?

This article explores some of these questions.

What is biomass heating?

Bioenergy is the energy released from biomass, which is any organic material which contains stored carbon. Biomass can include wood, crops and crop waste, grasses, livestock slurry and other forms of organic waste. As biomass sources can be consistently replenished, for example by planting more trees, bioenergy is classed as renewable.

The heat from burning biomass can be distributed through sheds using either hot water or hot air systems. With hot water systems, the heated water is piped through heat exchangers, a simple radiator and a fan, or a series of fin pipes to heat the air in poultry houses. With hot air systems the heating unit pulls air from a house, heats it, then returns the now hot air to the house. The hot air is then distributed throughout the house using some type of duct system or through the use of circulation fans.

What does a biomass heater looklike?

A biomass boiler is essentially a sophisticated large wood-burning stove that can heat an entire building, or several buildings. Unlike a wood-burning stove, a biomass boiler does the same job as a central-heating furnace (boiler) powered by natural gas, oil, or electricity: it can provide your sheds with heating and hot water and it can even power modern underfloor central heating. A biomass boiler doesn't require huge amounts of starting up, cleaning, or maintenance. All you have to do is load in your biomass (generally, you'd use wood pellets, wood chips, chopped logs, cereal plants, or a combination of them) and periodically (typically every 2-8 weeks, depending on the appliance) empty out the ash, which you can recycle on your compost.



Example of a small scale biomass heating system

While wood-burning stoves have to be manually filled up with logs, biomass boilers are often completely automated: they have a large fuel hopper on the side that automatically tops up the furnace whenever necessary. Unlike with a coal fire, you don't have to mess around trying to get the fuel lit: biomass boilers have simple, electric ignition systems that do it all for you. It's perfectly possible to run a biomass boiler all year round



Why is litter drier when using biomass heating instead of LPG?

This comes down to the type of heat generated by biomass heating versus LPG. The heat from a biomass system is typically a 'dry' heat, similar to the heat generated by a slow combustion wood fire heater in your home. LPG on the other hand produces a 'moist heat'. This is because of the small amount of water contained within LPG. Think about the condensation problems associated with un-flued gas heaters in homes using LPG.

The difficulty with LPG is that whilst it provides heat to sheds, it also raises humidity levels which makes keeping litter dry more challenging.

Is biomass heating cheaper than using liquid petroleum gas (LPG)?

This depends on a range of factors including:

- Price of LPG.
- Price (sourcing and transport) of biomass fuel, for example wood chips, wood pellets, straw, paper waste, crop waste, plant waste, animal waste etc.
- The heating value of the biomass fuel (some things burn hotter than others).
- Overall efficiency of the heating system.
- Government incentive schemes.

According to Mike Czarick and Brian Fairchild from the University of Georgia, if LPG is in the vicinity of 25c per litre then biomass heating systems will be hard to justify. As LPG approaches 50c a litre then biomass heating begins to become more financially attractive.

Another key issue to consider is the availability of biomass fuels. If sheds are located in areas where biomass fuels are readily available (wood mills, cropping areas etc.) then biomass may be a viable alternative to heating your sheds. However if fuel is hard to come by and supply is inconsistent and associated with high transport costs then biomass might not be that feasible.

The University of Georgia have written a series of articles about biomass, including on the economic feasibility of biomass heating systems. For a copy of their factsheet go to www.poultryventilation.com/tips/vol21/n11.

As mentioned, factors other than LPG prices will make biomass heating more or less attractive. One

of these includes government rebates, subsidies and incentives. The farmer from the UK is more than likely taking advantage of generous subsidies and incentive schemes offered by the UK government. Are similar incentive schemes available in Australia? An answer to this question was not readily available at the time of printing. However I hope to explore this further and will feature an article on energy efficiency incentive schemes available in NSW and other states in the next edition of the Drumstick.

Can dry litter really improve FCR?

The answer to this question depends on your current base or standard. If your shed litter is usually very moist to wet, in other words, the litter typically has a moisture content of greater than 30%, then YES, drier litter may improve feed conversion ratios. If you run a pretty dry shed (less than 15% litter moisture) you are unlikely to see any real benefit from drier litter.

Wet litter is usually associated with higher ammonia levels, disease, general malaise and consequently poor performance. A number of studies here and overseas have shown that wet litter can be associated with poor feed conversion ratios. The solution is therefore to run the sheds drier if possible, but as mentioned, this can be challenging when using LPG heating systems which introduce more moisture into sheds. Biomass heating may be a solution for some as it is a 'dry' heat and may enable growers struggling to combat high humidity to keep their litter dry.

Is biomass heating feasible in Australia and has anyone crunched the numbers to show that it can be economically viable?

Given our climate, availability of waste fuel sources, transport distances and fluctuating LPG prices, is biomass heating a feasible proposition in Australia?

There are several companies in Australia and New Zealand that have commercialised biomass heating and electricity generation for small and large industries. I have contacted a few of these companies to help me develop a business case for biomass heating solutions for chicken meat enterprises. Again, this information was not available at the time of print and I hope to feature an extension of this article in the next edition to determine the economic feasibility of biomass heating systems in Australia.

Full page ad – R & DG Sanday

Broiler densities – issues, liabilities and legislation

Byron Stein, Editor *What this means*

How many birds are too many? What does the law say in relation to bird density? Who will be liable if the RSPCA or other welfare agencies come knocking on the door?

Broiler densities have recently been debated by some growers in NSW. These growers have reported instances where fewer birds are being thinned out than usual leading to greater numbers of heavier birds towards the end of a batch.

So what could the implications be for growers and processors?

What does the law say?

Animal welfare is legislated under the *Prevention of Cruelty to Animals Act 1979* and the *Prevention of Cruelty to Animals Regulation 2012 (POCTA)*. Whilst the regulations don't specify maximum densities for meat chickens they do make reference to the Model Code of Practice for the Welfare of Animals: Domestic Poultry. The Model Code of Practice sets out stocking density guidelines in Table 1.

The Code is based on weight of birds per square metre of shed space. This means that as birds get heavier, bird numbers per shed and therefore per square metre need to be reduced to ensure total bird weight does not exceed the values in Table 1.

Depending on the number of birds placed, this means that sufficient numbers of birds will need to be removed at first and second thin outs to ensure stocking densities remain below the maximum allowable guidelines.

Stocking densities set out in the Model Code of Practice for the Welfare of Domestic Poultry are guidelines and are not explicitly defined under legislation. Essentially what this means is that whilst densities are not defined under the Act, the Codes of Practice can be used as evidence or defence during a prosecution for a cruelty offence under POCTA. For example, if a grower (or processor) was being prosecuted under animal welfare legislation, and if stocking densities were typically higher than those defined in the Code of Practice, then this information might be used as evidence.

Who is responsible for ensuring density limits are not exceeded?

Animal welfare is the responsibility of all parties involved in the care and husbandry of poultry. This includes growers and processors, as well as persons involved in the transport of the birds, pick-up crews and others who handle the birds at any stage of the production cycle.

Whilst processors determine the number of birds placed and then the number of birds collected at first and subsequent thin-outs, it is the responsibility of both the growers and the processors to ensure that bird densities are not resulting in pain, suffering or injury. If typical densities result in pain or suffering, it is the responsibility of growers to rectify the situation and to humanely cull injured birds immediately and then to notify processors, and to keep a record of this notification.

Housing type	Minimum requirements	Maximum density
Tunnel sheds	Evaporative cooling system Capable of 1 air exchange per minute	40 kg/m ²
Other mechanically ventilated sheds	Stirring fans Water-based cooling system	40 kg/m ² in winter ^a 36 kg/m ² in summer ^b
Non- mechanically ventilated (conventional) sheds		28 kg/m ²
Note:		
^a Winter is pick up between 1 April and 30 September		
^b Summer is pick up between 1 October and 31 March		

A copy of this code can be downloaded at <http://www.publish.csiro.au/nid/22/sid/11.htm>

If notification to processors does not result in a change densities, and if it can be shown that excessive densities are resulting in cruelty, then growers are advised to notify the appropriate animal welfare authority in their state or territory. In NSW the RSPCA should be notified. It should be noted however that unless evidence exists of suffering or injury, irrespective of the stocking densities, then it is unlikely that a breach of legislation has been committed. On the other hand, even if stocking densities are below the maximum guidelines set out in the Code of Practice, growers can still be prosecuted if evidence of unnecessary pain or suffering exists.



I'm confused, what are you trying to say?

1. Stocking densities set out in the Model Codes of Practice are guidelines, not law.
2. Growers and processors must ensure that their birds do not suffer unnecessary pain or injury, irrespective of stocking density guidelines.
3. Excessive stocking densities (above those outlined in the Code of Practice) can be used as evidence in an animal welfare prosecution
4. Growers must notify processors if they believe stocking densities are resulting in animal suffering.
5. Failure to notify or failure to act on animal suffering might lead to a prosecution under animal welfare legislation.

Animal welfare is becoming an increasingly important issue, and consumers are demanding greater scrutiny of the chicken meat industry to ensure the product they are purchasing is grown in an ethical and responsible way. The large supermarkets are responding to this consumer driven demand for production systems which consider animal welfare is a key component of their business. Animal welfare is therefore no longer just a feel good issue, but should be considered a critical part of good business practice. Any possible breaches of animal welfare should be reported immediately and investigated and resolved as quickly as possible. Failure to resolve animal welfare breaches should be reported to appropriate authorities to ensure not just the welfare of the animals, but also the long term welfare of the chicken meat industry.



Half page ad – R & E Sheds

BIOMAX™ – turning poultry waste into fertiliser in next to no time?

Byron Stein, Editor

Turning spent litter, carcasses, eggs, hatchery waste and other organic waste into saleable premium fertiliser, all in just 24 hours? Sounds fanciful, but this is what Biomax Technologies, a Singaporean biotechnology company is claiming it can do using what they call Biomax Rapid Thermophilic Digestion Technology. The technology converts massive quantities of waste products generated by agribusiness and commercial livestock farming into a nutrient rich, odourless, powder form fertiliser.

Wastes are heated to around 80°C in a specially designed 'digester' and combined with a purposely formulated enzyme to produce pathogen free fertiliser in only 24 hours. The company claims that this is currently the fastest composting technology available in the organic waste treatment industry.

How does it work?

Essentially the process works in three phases:

1. Organic waste which could include any combination of dead birds, spent litter, hatchery waste, eggs, animal manure, innards, discarded fats and meat etc are inserted into a large digester.

50 t broiler litter, dead birds and sawdust



24 hours

35 t Premium organic fertiliser

2. A specially formulated mix of enzymes, called BM1 is added to the digester.
3. The mix of organic waste and enzymes is heated to 80°C and 'digested' for 24 hours.

The end product is an odourless and pathogen free organic compost fertiliser.

I contacted Biomax and asked the company a few questions about their Rapid Thermophilic Digestion Technology.

Who in the poultry industry is your likely market for this technology?

It is a very broad market because basically our market is where the waste is. We deal with a variety of business players ranging from hatcheries, broiler and layer farms to processing plants. In some cases, farmers send their wastes to biogas

operators. Our technology can complement biogas production by treating the residual slurry into high grade fertiliser.

In order to be economically viable, how much waste would need to be processed daily to put through the system?

To be economically viable, the machine capacity should be utilised at 70%. Currently we have a 15-ton unit and a 50-ton unit. Our system is easily scalable to suit different clients' requirements too.

Does the organic waste you put in the digester have to be pre-processed? In other words, does the waste have to be chopped up into small pieces or can the digester handle whole bird carcasses?

No pre-processing is required. However trials suggest that for optimum performance whole

Third page ad – Aqua Wash

Full page ad – Tital Poultry Equipment

carcasses should be limited to 10% of the total waste input.

Tell me more about the end product, that is, the fertiliser which is produced by the digester.

- *What are typical nutrient values (NPK)?*
The combination of NPK is usually more than 6%. Poultry manure is a very good raw material to produce high nitrogen fertiliser. The main benefit of our end product is the excellent organic matter content (>70%) which promotes soil microbial activity and increases soil fertility.
- *Rates of application*
Our recommended application for vegetables and leafy plants would be 1-2kg per m²/cycle and for fruit bearing trees 3 to 6kg per tree annually.
- *Broad scale agriculture or home/garden market*
Since this fertiliser is pathogen free, it is suitable for any type of application, be it broad scale agriculture or home/garden market. In some other countries, our fertiliser is sold for gardening and landscaping.

What is the upfront investment cost?

The capital investment of building a plant may cost around \$800,000 for a 15 ton unit.

What are the likely operating costs of the unit?

There are energy consumption costs, labour costs and maintenance costs. The electricity consumption of the digester can be significantly reduced by using alternative sources such as LPG. As for labour, only two workers are required to operate a plant with 15 tons of waste daily. Unlike other high-tech infrastructure, maintenance requirements are minimal and mostly associated with lubrication of some moving parts and routine cleaning.

What is the likely return on investment?

Payback period is within two years. With the strong growth in Australia's organic fertiliser market, it could be even faster.

Have you built any units in Australia?

Yes, we already have one operating unit in a poultry farm in Queensland. We will be opening an office in Australia in 2013 and we will also bring our small demonstration unit to Australia.

Current practice in Australia is to remove the spent litter and apply it directly to crops or pastures. How does this technology value add to raw poultry litter in such a way that farmers or others would use it in preference to raw poultry litter?

Applying poultry litter directly on farm creates several issues including the risk of pathogens, burning of crops due to the high concentration of ammonia and offensive odours sometimes associated with spent litter. Our technology value adds to the raw materials by producing fertiliser which is pasteurised and therefore free of pathogens. Our fertiliser makes the nutrients more easily

available for plant intake and helps in water retention. NPK concentration and organic matter content are higher as it is produced under controlled conditions, ie, inside our enclosed digester and hence not affected by external factors such as weather.

Have any other intensive agricultural industries expressed interest in the technology?

Yes, apart from poultry we have also received interest from cattle farms, sheep farms, fisheries, piggeries as well as processing businesses such as wineries and sugarcane milling.

Have you got any photos of the digester?

We have a comprehensive photo gallery of the digester at work. Here are a few examples:



Biomax digester



Rich, organic and pathogen free organic fertiliser after just 24 hours.

Where could I get more information about Biomax?

Interested parties can email to us directly at enquiry@biomaxtech.com or visit our website at www.biomaxtech.com



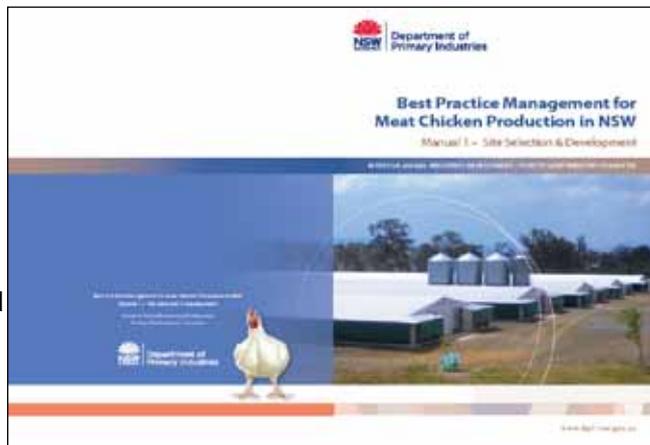
New Best Practice Management for Chicken Meat Production in NSW

New best practice management guidelines for chicken meat production in NSW were published in late September 2012. These guidelines replace the NSW Meat Chicken Farming Guidelines published by NSW Agriculture in 2004.

The guidelines are split into two manuals. The first manual describes the planning process and the best practice guidelines to be followed for the development of meat chicken farms. These requirements are provided for the benefit of all parties, but in particular Manual 1 sets out requirements to be taken into account when the proponent (typically the growers' consultant) is preparing a DA.

Manual 2 provides the best practice guidelines to be followed for the operation of meat chicken farms.

The Manuals provide guidance for the planning, design, construction, and management of meat chicken farms in NSW, with a particular focus on minimising environmental impacts. They were developed by the NSW Poultry Meat Industry Committee in conjunction with the Department of Primary Industries (NSW DPI), the Office of Environment and Heritage (OEH), the Department of Planning and Infrastructure (DP&I) and Local Government representatives, in consultation with equivalent agencies in Queensland and Victoria and industry groups.



Ad – Central Poultry Industries Pty Ltd

The Manuals give details of location, design and management principles to ensure that meat chicken farming can be environmentally sustainable. Potential environmental impacts of meat chicken farms (including community amenity and water and land contamination) have been identified, along with measures to minimise the potential for these impacts. This is achieved by providing:

- information on siting, design and construction of farms
- explanations of the development application (DA) and approval processes, requirements and legislation
- performance objectives and best practice advice for managing the environmental impacts of meat chicken farms during their development and operation.

The manuals are available on the NSW DPI website at www.dpi.nsw.gov.au/agriculture/livestock/poultry/development

Alternatively, a limited number of hard copies are also available. Growers who would like a hard copy should contact Byron Stein, Industry Development Officer, Poultry at NSW DPI on 02 4828 6600 or by email at

byron.stein@dpi.nsw.gov.au



Can trees really reduce neighbour complaints about odour?

Several studies have shown that trees:

- can reduce odour
- can help reduce complaints
- are relatively cheap and easy to establish

.....but is there any evidence that this is the case?

Smell from poultry sheds continues to be one of the largest challenges for both current and prospective poultry meat and egg farmers. This is sometimes based on fact, particularly in highly populated areas, for example in and around towns and cities, and sometimes based on perception, where simply the sight (not site) of a shed results in it being 'smelled', leading to the saying that 'people smell with their eyes'.

The planting of trees around sheds has been suggested as a possible way of reducing odour and limiting complaints from those who smell with their eyes (reducing perception). But can trees really be a solution for some of these farms? Recent research in the USA and a soon-to-be published report by RIRDC in Australia seem to suggest that the answer may be YES.

So what evidence exists to suggest that trees, shrubs, or a combination of both might help, and is the solution simple to apply and cost effective?

As mentioned, there have been several studies in the USA that have looked into the effect trees might have on reducing odour from sheds. Many of these studies are still ongoing. This article will provide a summary of some of these studies and their key findings. In addition, Rural Industries Research and Development Corporation (RIRDC) are about to publish a report on trees and other vegetative buffers for Australian conditions. We will take a look at some of the key questions and issues that report is likely to address when it is published in the very near future.

What has research in the USA shown?

1. As the poultry industry moves to tunnel ventilation tree plantings have become a more viable option. This is associated with the belief that trees may hinder natural ventilation during the summer with non-tunnel naturally ventilated sheds
2. Tree barriers are often also called 'vegetative environmental buffers' or VEBs
3. In a survey of pig farms in Pennsylvania, farms that were 'attractive' (neat and tidy with plenty of trees) were considered less 'smelly' by neighbours
4. One study showed that a three row vegetative buffer resulted in reductions of 35% to 56% in the downward transport of dust and aerosols from a broiler farm
5. Trees may not only filter what is leaving the sheds, but may limit the entry of windborne pathogens into sheds
6. For farms exposed to wind, properly established windbreaks may be able to reduce winter heating costs between 10-40%.
7. Properly constructed windrows consisting of 3 rows of trees, 9m wide and approximately 9m from fans has been shown to reduce air velocity by 99%
8. Some studies have shown variable results with ammonia and odour levels
9. Some species of trees placed near the fans were highly stressed indicating that tree or shrub selection is an important factor in planting tree rows for odour control
10. Some trees are better than others at trapping and absorbing ammonia
11. A mix of deciduous and evergreen trees may provide better results than planting solely one type or the other.
12. Shelterbelt design is critically important. Studies have shown that "strategically" placed trees have a beneficial physical impact on downwind odour, whereas trees used

Quarter page ad – Heritage water tanks

Full page ad – Retracom

simply for visual landscaping or are naturally part of the landscape may not

13. Trees should not be thought of as a 'silver bullet' and should be seen as an addition rather than a substitution to best management practice.

Vegetative screens in Australia

RIRDC have funded research into vegetative buffers (trees and shrubs) for Australian broiler farms. This research has been completed and a final report is likely to be published within the next month or so.

What were the objectives of the research?

- To produce guidelines that will assist Australian meat chicken farmers to use vegetative screens to reduce dust and odour impacts and improve visual amenity.
- To produce an additional document to inform policy makers and regulators of the science that supports the use of vegetative screens for reducing odour and dust impacts and improving visual amenity.

How was the research conducted?

Information on the use and design of trees and shrubs to reduce dust and odour emissions from poultry farms was accessed, reviewed, assessed for applicability under Australian conditions and design features adapted to

suit local conditions. An 'easy to access' resource was developed that informs meat chicken farmers how to use and design tree and shrub plantings to reduce dust and odour impacts and improve visual amenity.

This study highlights the benefits of trees and shrubs in reducing dust and odour. General design and management guidelines for establishing trees and shrubs on Australian poultry farms have been found to be directly transferrable from poultry farms in the USA and these guidelines have been made available in an 'easy to access' producer guide.

Where can I get a copy of the producer guide for planting trees and shrubs?

A final report has been provided to RIRDC for review. Once this review is completed RIRDC will publish the report and the producer guides on their website at www.rirdc.gov.au/publications.

The Drumstick will also feature an article on the report and the producer guide once it has been published. The article will also identify funding and assistance opportunities for tree planting and provide contact details of the various funding bodies in NSW.



Half page ad – Central Poultry Industries

EggGrab'n'Grade! - CRC launches an iTunes app

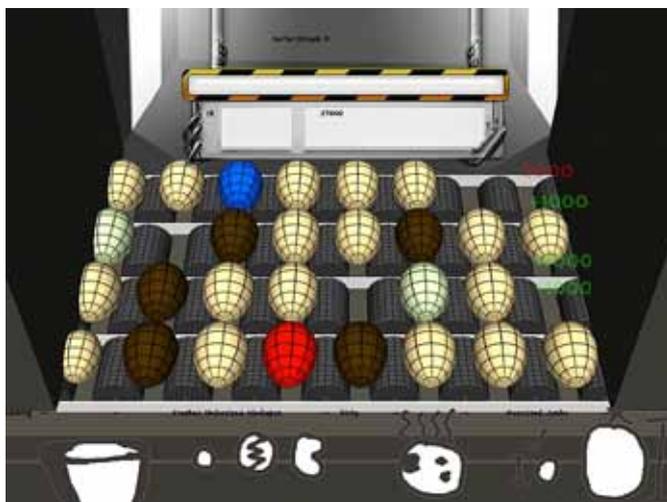
The Poultry CRC is thrilled to announce that after many months of hard work, we have an app in the iTunes store! Titled Egg Grab'n'Grade, our newest learning resource is available as a FREE download within Australia.

Egg Grab'n'Grade illustrates the different types of eggs that are removed on a grading floor. Egg Grab'n'Grade show how eggs make their way from hen houses where they are laid, through the grading floor, to a packing station where they are put into cartons, and then on to shop shelves. Players must identify the cracked, dirty, misshaped, undersized or oversized eggs and move them to the appropriate 'buckets', while leaving the good eggs to go through to packing. The game includes a comprehensive tutorial about each egg type, and includes a number of factoids about eggs.

With a great soundtrack, colourful graphics and lots of positive feedback, the game is visually appealing



and can be highly addictive as players try to beat their previous scores. Players can play in a stand-alone mode, or, if logged on to Apple's Game Centre, they can compete with their friends online for achievements and high scores.



This game has been designed principally to teach school students about food safety and quality in the egg industry. It is compatible with ipad2, ipod4 and iphone4 (and later versions of each) and can be easily integrated by educators into the classroom environment. It provides a good spring-board for discussions around food production, food safety and quality assurance. But most of all, playing it is fun! And while having fun, students can learn without even noticing it.

The game was developed in conjunction with Holopoint Interactive in Adelaide. The Holopoint team have done a wonderful job throughout the whole process. From the original concept, through many hours of testing and refinement to the completed product, their understanding, patience and professionalism have been outstanding!



The Holopoint team of Tom and Ben travelled to Poultry CRC headquarters in Armidale during the initial phase of this project to flesh-out original concepts for the game. A subsequent trip to Tamworth producers Bede and Narrelle Burke (from 'Glendon Poultry') allowed Ben and Tom to see egg grading first hand. From this experience, the Holopoint team was able to replicate the look and feel of egg grading.

Poultry CRC hopes that the game will prove popular in Australia and, with Easter here, now is the perfect time to introduce a game about eggs



“You can’t disinfect muck!” – choosing the right detergent

For any disinfectant to work to its fullest potential, housing and surfaces must be as clean as possible. This is achieved by pressure washing, one of the most unpopular jobs on the farm. When coupled with poor attention to more difficult to clean areas, such as ledges, rafters, pipe work and fan housings, it is not difficult to see how ineffectively such cleaning is often done in practice. To understand the problem, think about the material you are trying to remove. It is often dried on, strongly adherent and greasy. Now think about washing up your own dinner plates after leaving them overnight after a greasy meal. With cold water, this is nearly impossible. With hot water, it is difficult but add a detergent and it is much easier. The target level for before disinfection which is usually set at around 100 bacteria per cm². At a scientific level, the benefits of using a detergent are obvious where bacterial counts

Table 1.

Stage	Bacteria per cm ² (x 100,000)	Comment
No cleaning	500	
Water wash	200	Washing with water reduces bacterial contamination by up to 60% but it is still well above the target level before disinfection (usually set at around 100 bacteria per cm ²).
Water wash + detergent	1	Adding a good heavy duty detergent, the contamination can be reduced to well below the target level

are considered at various stages of cleaning. See Table 1. This shows you can be left with 4,000 times more bacteria for the disinfectant to deal with if you don’t use a detergent! As the aim is to reduce micro-organisms to 0.001% of their initial value by the end of disinfection, a successful biosecurity programme is more than just pressure washing followed by putting on a disinfectant. Conclusions The benefits of a good heavy duty detergent are plain to see. Its use will significantly improve your cleaning programme, allow better disinfectant activity and improve your, and your birds’ performance.

Source: Adapted from technical article by Stephen Lister, BSc BVetMed CertPMP MRCVS.



Quarter page ad – Wallaby Fabrication

Industry News...

Inghams Sold!

Global private-equity firm TPG has bought Australia's largest poultry producer, Inghams Enterprises Pty Ltd. for about \$850



million. TPG outbid rivals including Blackstone, Affinity and Chinese agribusiness company New Hope.

TPG will retain Inghams' existing management. "An important part of the decision for me was finding a buyer who would ensure that our customers will continue to receive the highest level of service and our employees would be well looked after. I believe I found that in TPG," Mr Ingham said in a statement.

Inghams Enterprises is Australia's largest poultry producer, with sales of over AU\$2 billion in 2012. According to Retail Media's 2012 'Retail World', Inghams has 45.1 per cent share by value and 48.3 per cent share by volume of Australia's \$150.4 million poultry smallgoods market.

Quarter page ad – District Realty Pty Ltd

TPG is a global investor based in New York with several well-known Australian business investments. TPG, which has \$54.5 billion capital under management, attracted considerable publicity with its structured acquisition of the Myer retail group several years ago.

Other major Australian investments include the private healthcare and hospital group HealthScope, transport infrastructure company Asciano (owner of Patrick Ports and Pacific National Rail), Mammoth Pet (Australia's largest pet specific retailer, under the Petbarn banner), and Alinta Energy.

TPG is also the owner of the global US-based Burger King chain, Beringer Wine, and the European-based Strauss-Elite coffee group.

Inghams to close Hoxton Park

INGHAMS Enterprises has announced 363 job cuts in NSW. This is as a result of the closure of their Hoxton Park processing facility, a further processing plant at Mangrove Mountain and a hatchery at Casula.

After more than 50 years in the local area, Inghams will move their processing operations from their Hoxton Park site to South Australia.

Around 335 workers from the processing plant will be affected, along with 28 workers from the Casula Hatchery.

The hatchery was closed on February 22, and the processing plant is scheduled to close on 3 May.



Inghams general manager, Peter Van Vliet, said ongoing feasibility reviews into the constraints on existing facilities, local production volumes and efficiencies resulted in the difficult decision.

“Our most recent review has identified that production volumes at Hoxton Park can now be redirected and more efficiently produced at larger and more modern processing plants within the business,” he said.

“Although the reviews have been widely communicated to employees and union representatives over the last five years, the closure was not an easy decision.

“The Hoxton Park site has served us well and we are very proud of the site’s achievements during this time.”

Mr Van Vliet said customer and product supply will remain unchanged, and the distribution centres at Lurnea and Hoxton Park, and the weigh label and product development areas will continue to operate as normal.

He said the company was working closely with affected staff, exploring redeployment opportunities at Ingleburn and Cardiff facilities, as well as a number of interstate opportunities in Brisbane and Adelaide.

Chicken farmers’ win right to bargain

BROILER chicken farmers can now collectively bargain with processors Inghams, Baiada and Golden Cockerel for the next decade.

The Australian Competition and Consumer Commission has issued a final decision allowing broiler chicken growers, who are members of Queensland Chicken Growers Association, in the absence of a state-based statutory exemption.

The ACC said collective bargaining arrangements could lead to transaction cost savings and provide broiler chicken growers with the opportunity to have effective input into the terms and conditions of their contracts with chicken meat processors.

“Queensland chicken growers and processors have previously been able to and can still collectively bargain under an authorisation provided by state legislation,” a spokesperson said.

“The ability for growers to collectively bargain under this legislation has been in place for approximately 12 years.

“However, in the context of increasing deregulation of

Half page ad – Australian Agricultural Services

Industry News...

agricultural industries, many states have moved away from legislative collective negotiation schemes and processors in those states have sought ACCC authorisation."

There are approximately 58 chicken-growing farms contracted to three processors in Queensland.

The ACCC has previously authorised similar collective bargaining arrangements for chicken growers in Western Australia, Victoria, South Australia and Tasmania.

Article courtesy of the Weekly Times, 5 February 2013

www.weeklytimesnow.com.au/article/2013/02/05/559018_business-news.html

Activists eye 'naked' chickens

Animal welfare extremists want to ban the display of naked chickens in supermarkets.

They also protest against pictures of raw chickens in ads.

The American founder of People for the Ethical Treatment of Animals, president Ingrid Newkirk, criticised a newspaper for running a picture of a raw chicken. Other supporters



expressed disgust at the sight of plucked chickens in supermarkets.

A PETA spokesman said the organisation wants everyone to go vegan.

"We don't want to see any chickens on display, but instead want them to live natural, happy lives with their families.

"Sexily displaying the corpse of a chicken who has been bred to grow so big, so quickly, that many collapse under their own weight, is just additionally offensive."

Article courtesy of the Weekly Times, 7 February 2013

www.weeklytimesnow.com.au/article/2013/02/07/558988_business-news.html

AECL withdraws trademark

The Australian Egg Corporation Limited (AECL) has withdrawn its current application for a Certification Trade Mark (CTM) covering an enhanced Quality Assurance (QA) program for the Australian egg industry.

The QA program was developed over three years and included an exhaustive process involving extensive consultation with scientists, egg producers, regulators and the broader community. The program is aimed at ensuring minimum egg production standards are attained on-farm in hen health, food safety, farm quarantine & biosecurity, environmental stewardship, egg labelling and hen welfare for cage, barn-laid and free range egg production.

However, in response to concerns from some members of the community regarding three of the 171 minimum standards in the proposed QA program, some



structural elements of the program and other observations, AECL has decided to withdraw the CTM Application. At this point in time, AECL intends to submit a new CTM application after taking stock, thoroughly reviewing the issues raised and making any necessary amendments to the minimum standards.

It should be noted that after such rigorous consultation and review by all interested parties, there was no major opposition from the ACCC to the standards for cage or barn-laid egg production in the new QA program.

NZ poultry producer claims lowest FCR

New Zealand poultry producer, Tegel Foods claims to have the lowest FCR in its production. The ratio for the company as a whole averages just 1:5 across its 90 or so contracted broiler farms, with a typical range from 1:45 to 1:65 at 2.3 kg. Average processing weight is 2.5 kg.

Agriculture manager Bill Williams says there are five key pillars, all

of which have to be fine-tuned and optimised to deliver this performance. The first of these is genetic selection. "We are looking for a balance between production traits - low FCR, high meat yield and growth rate - and welfare traits, such as good leg strength and low mortality," says Williams. "There is some trade-off in breeder performance for top broiler performance."

The company has used the Ross breed exclusively since 1974. FCR has

improved by 1.5 points each year for the past 10 years, and liveweights by 50 g a year. Williams anticipates even bigger gains in genetic potential over the next five years.

The second pillar is nutrition and here Tegel Poultry is paying particularly close attention to feeding birds right in the early stages. "The first catch of female birds is at about 31 days, when they weigh 1.75 kg, but as growth rate continues to improve over time, the starter diet becomes even more important."

The company also uses a combination of EFG (Emmans, Fisher and Gous) modelling software, laboratory analysis, feeding trials and veterinary feedback to optimise its poultry rations. "The spec of the diet in protein and energy terms impacts directly on FCR, so the highest spec diet that can be managed in the shed at the optimum dressed weight cost to the plant is the objective."

Getting the feed texture right is also important to maximise intakes with minimum effort for the bird. Feed procurement is an integral part of this strategy, with raw materials sourced to deliver this optimum outcome for the business. "Typically, New Zealand feed wheat is most cost effective for the Christchurch region, but is highly variable in quality," says Mr Williams. "Imported wheat and sorghum from Australia, which tends to be more consistent in nutrient value, is used in our North Island plants, with soya bean meal typically sourced from South America."

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Full page ad – City Generators

Industry News...

Dealing with high costs and volatility are a constant challenge, so the company routinely hedges both the currency and the commodity supply period. Volatility in terms of raw material quality is managed by pre-purchase and on-arrival testing, and by streamlining the use of ingredients to manage in-feed nutrient levels.

The fourth pillar Tegel Poultry focuses on is disease control, though the company is blessed with New Zealand's naturally low disease status. The country has no Infectious Bursal Disease, no Newcastle disease and no avian influenza. "There is nothing to vaccinate against." The main challenges come from femoral head necrosis – "the most common cause of mortality" – coccidiosis and dysbacteriosis.

The final pillar is animal husbandry, covering everything from chick placement and planning, to shed management, biosecurity and grower attitude. Asked how he would define "best practice", Williams says attention to detail in every aspect of the shed environment is the key to great performance. "The best growers typically spend more time in-shed assessing and managing the birds' requirements than average growers."

The company's aim is to move any below-par producers closer to the top performers through a combination of shed improvement, training, support and better information availability, and so drive FCR lower still.

Source: Article courtesy of World Poultry, 12 February 2013

www.worldpoultry.net/Broilers/Nutrition/2013/2/NZ-poultry-producer-claims-lowest-FCR-1172553W/

Adding value to poultry litter

Poultry farmers are consistently looking at ways to reduce costs, increase farm efficiencies and maximise their return on investment. For many, the management of poultry litter is one aspect of their operation that presents its own challenges.

For fertiliser use, spent litter is commonly perceived as bulky, having an inconsistent nutrient content, and there are concerns that use as a land applied fertiliser may result in environmental damage due to nutrient leaching or run-off.

While not in the required ratios, poultry litter does contain the range of critical nutrients commonly applied as inorganic fertiliser (e.g. N-nitrogen, P-phosphorus and K-potassium). In litter, these nutrients occur in slow release forms and are accompanied by a substantial input of biologically active carbon. Litter effectively provides a feedstock for microbial biomass nutrient conversion activities, resulting in the retention of nutrients in forms with much longer persistence in soil than can occur with inorganic fertilisers.

A project being run by Poultry CRC researcher Dr Matthew Redding's aims to overturn negative perceptions of spent litter. This will be achieved via the development of waste stream value-adding strategies that minimise nutrient losses to the environment while providing better nutrient supply characteristics than traditional fertilisers. By incorporating bentonite and other 'smart sorbers' (synthetic clays) into litter, Matthew aims to improve the fertiliser value of the material from the outset. Dr Redding and his collaborators (Professor Steve Walkden-Brown and Dr Fakhru Islam from the University of New England) have found that as an added bonus, laboratory volatilisation trials have indicated that bentonite as a bedding material, combined with spent wood shaving-based litter, decreases ammonia volatilisation relative to the spent litter alone and may (if applied in-



shed) improve air quality and bird productivity.

Dr Redding explained, "Industry interest has already been generated with regard to further trials of bentonite as a bedding material. If we can put bentonite into the shed either as an improvement to existing conventional bedding, or partial or full replacement for bedding, then we can offset the cost of purchasing that ingredient in the fertiliser by reducing our costs in bedding or improving production." In addition, the availability of bentonite is good in many areas of Australia, particularly South East Queensland, as it is found alongside coal deposits.

"From my point of view, any material like spent litter where your N and P

are in organic forms rather than inorganic has potential to be a good base for superior fertiliser, where loss to the environment (e.g. via leaching) can be minimised" he said. Results thus far support a number potential approaches to the use of smart sorber / spent litter formulations as fertilisers. These include:

1. Spent litter with smart sorber additions could be considered as two elements of a more complete fertiliser formulation, including addition of inorganic P (e.g. up to 20 per cent of total P). This approach could also deliver the benefits of a balanced and tailored fertiliser product that may well aid marketability.
2. Increasing the initial application rate of spent litter / smart sorber may achieve the same ends, while not resulting in the P losses that would occur with large single applications of inorganic P.
3. Decreasing the treatment rate of smart sorber in the spent litter. This would also serve to decrease the cost of production. "Preliminary experimentation suggests that rates between 10 and 20 per cent on a dry-mass basis would likely be appropriate in decreasing P losses" added Dr Redding.

The potential market for spent poultry litter fertiliser products clearly exists. This research will give poultry farmers robust tools with which to work in the development of a market-ready resource that can help reduce overall farm costs, have positive environmental impacts and aid other agricultural sectors.

Source: *ThePoultrySite News Desk*

Quarter page ad – KH Heitmann Machinery Aust. Pty Ltd



Half page ad – Australia Wide Solar

Red flag issues

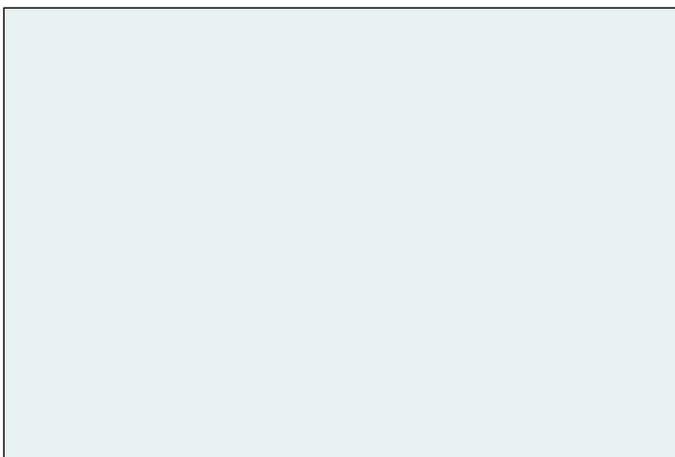
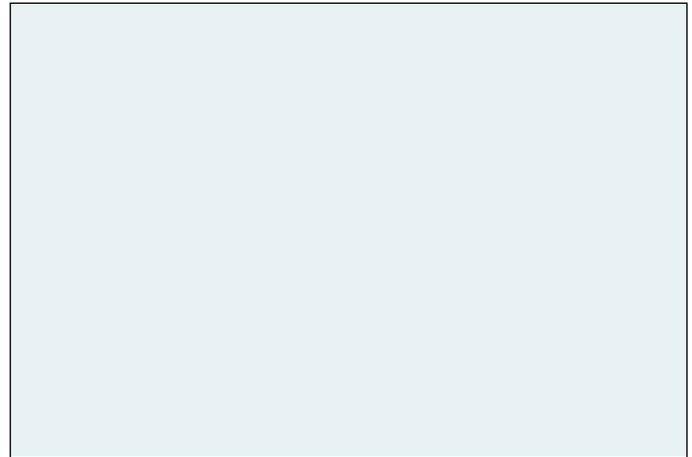
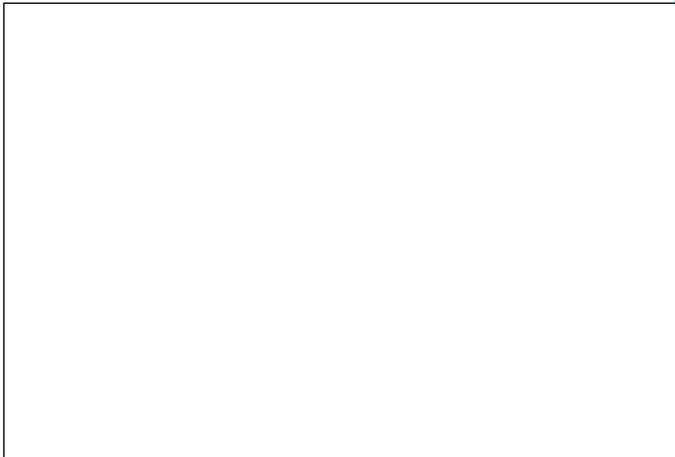


Chicken Meat Growers are reminded that they now need:

1. A Property Identification Code for their farms
2. From the 1 May 2013 a licence to grow chickens destined for processing and human consumption
3. Comply with the new Land Transport standards and guidelines. Copies of these are available at www.animalwelfarestandards.net.au/land-transport/



The drumstick marketplace



Advertise here for \$54.50

For information contact

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Ph (02) 4828 6644

joanne.ottaway@industry.nsw.gov.au

Full page ad – Damex Pty Ltd