NSW DPI

The Drumstick is produced by officers of NSW Department of Primary Industries for people involved in the Poultry Meat Industry

the drumstick

Summer 2011–2012 | Vol 29 No 3

Welcome

Happy New Year!

It's hard to believe that 2011 is over and 2012 has arrived to bring new challenges and opportunities for the poultry industry. This summer issue of the Drumstick magazine has arrived a little later than I would have hoped, but better late than never.

This edition has a strong focus on managing your sheds in hot weather and has some tips and tricks to help you keep your birds comfortable and performing at their best. In addition to hot weather, this edition includes articles on managing darkling beetles (mealworm) and measuring litter moisture.

I have also included a couple of stories designed to save development applicants some money. The first article provides some insight into the do's and don'ts when lodging a development application (DA) and the second article reminds DA applicants of the free, and easy to use, Level 1 Odour Assessment Calculator developed by the Office of Environment and Heritage.

As always there are some interesting industry news articles on current trends and issues in the Australian poultry industry. Highlights include a new Best Management Practice publication due for release in 2012 and changes to the NSW Farmers Poultry Meat Committee.

Farmers are reminded about the paramyxovirus outbreak in Victoria and to continue to practise strict biosecurity procedures on their farms.

Also, a reminder that the Drumstick is now available on the internet at http://www.dpi.nsw.gov.au/aboutus/resources/periodicals/newsletters/drumstick. We will also be loading past issues on the internet for those of you who might want to catch up with previous articles or stories.

Lastly I would like to take the opportunity of wishing you all a very happy and productive 2012.

Best Wishes
Byron Stein
Editor

inside this issue:

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 Jo Ottaway for more information.
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Training and education grants available

PROfarm

FarmReady reimbursement grants assist primary producers and indigenous land managers to attend approved training courses. Approved courses aim to improve the capacity of primary producers to adapt to climate change and increase their self-reliance and preparedness.

Eligible participants can receive up to $1500 (per person) each financial year to cover the cost of approved training activities. Up to $500 is available per person to support associated expenses such as excess travel (over 150km from home), accommodation and childcare.

The following PROFarm courses have received FarmReady approval and more applications are underway:

- Animal health risk management – introduction
- Farm planning
- Farmer's guide to managing climate risk
- Farming in a changing climate
- Healthy soils, healthy landscapes
- Identification and management of native grass pastures
- Introduction to environmental management systems
- Introduction to organic farming
- LANDSCAN
- Organisational governance and stewardship
- Paddock Plants
- Prograze
- Prograze Abridged
- Prograze Plus
- Property management planning for natural resource management
- WaterWise on the farm

How to access the grants:

1. Choose a course that you would like to do.
2. Register for the course and pay the course fee.
3. Lodge a FarmReady funding approval application form at least 5 days before the course starts.
4. Attend the course, keeping all receipts.
5. Receive a course completion certificate from the person running the course.
6. Submit a claim for reimburse ment to FarmReady to within 30 days of course completion.

All forms are available on the FarmReady website (www.farmready.gov.au) or more information on PROfarm courses approved under the FarmReady reimbursement grant contact:

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Getting best broiler performance in hot weather

Jim Donald, Extension Engineer, Auburn University &
Mike Czarick, Extension Engineer, University of Georgia

With summer here again broiler growers are facing the challenge of keeping birds comfortable under often extreme conditions. This article will focus on the most commonly asked questions from growers on the finer points of managing a pad-cooled tunnel house in summer.

First, however, a note on electronic controllers, which have helped many growers do a better job of house management, but are perhaps still not fully understood by some growers. A key point in controller management is to realize that it is impossible to write one controller program that can run a house year round. That is, we must have different controller program setups to match bird needs in different seasons and different stages of bird growth.

At a minimum we would recommend using four controller program setups, to cover winter brooding and growout, and summer brooding and growout. However, even within the summer growout phase, for example, we need to tweak the program differently for three week old birds than for six or seven week old birds. Staying with an "average" program for summer growout risks either over ventilating young birds by going into tunnel too soon, or under ventilating older birds by not getting into tunnel soon enough.

How many degrees above my set target temperature should I change from inlet mode ventilation to tunnel ventilation?

We switch to tunnel ventilation when mini vents can no longer keep the temperature in the house close enough to the desired temperature and we need wind chill cooling. Bird size, age, breed, and feathering all affect the decision as to how many degrees above target should be the switch point. Generally, with big birds we can go to tunnel at 3°C above target because research has indicated it is beneficial to the birds. With younger birds we might want to hold off tunnel to 4–5°C above target because younger birds more readily dissipate heat and early tunnel has not been shown to be beneficial.

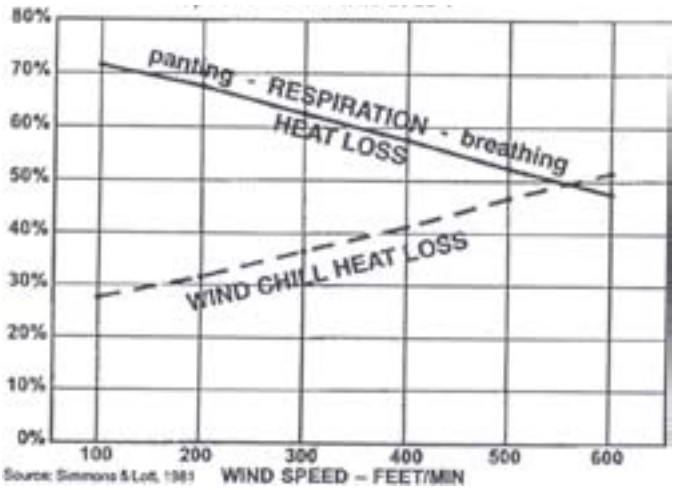
Some growers and companies go to tunnel at 3°C above target and others at as much at 5.5°C above target. If we want to use one number, without adjusting for bird age, etc., both these numbers are probably a little on the extreme side. A good compromise on this for most companies might be to go to tunnel at 4°C above target.

How much wind speed should I install on a 13 m x 150 m house growing 3 kg birds?

Research has shown that after the 5th week of age big hot birds benefited from wind speeds of 3.0 m/s at bird level. In a modern house, to get a feel for what average wind speed is we should take at least three readings across the house at bird level: one near the water line, another reading in the centre and another near the other water line on the other side, and average these together. You might want to do this in the front and back of the house as well. Allowing for some reduction in velocity as a house ages, 3.0–3.3 m/s would not be out of the question for designing a new house for big birds. Economic benefits of velocities higher than 3.0 m/s are not documented. Note also that although a 13 x 150 metre house will have more total fan capacity installed than a 12 x 120 metre house, we want the same wind speed in both houses.

Figure 1 shows why wind speed is important: with good wind speed a larger portion of the heat that must be removed from the birds is coming from the wind chill on the bird's skin and a lesser portion of the needed heat removal is from respiration (breathing or panting). Lower wind speed causes less heat removal from the skin and thus causes the bird to pant, which wastes feed, so we need good wind speed to stop or at least minimize panting.

Figure 1. Heat loss to wind chill vs Respiration at different wind speeds – 5 lb birds at 85°F.



When should I bring on my pads and should all fans be on before the pads are brought on?

These are both very frequently asked questions. The facts are:

1. When relative humidity (RH) outside is 80% or more, pads don't do much good.
2. In most locations the outside air temperature must get to 27°C (80°F) before RH drops to 80% or less (the 80/80 rule).
3. Pads need a period of time each day to dry out.

In a small bird grow out program with a target temperature of 21°C during the last week (week 5), going to tunnel at 25°C (+4) and bringing the pads on at 28°C (+7) would be acceptable. One or two fans might come on after the cooling is turned on as the day progresses in very hot weather. In a big bird program with a target temperature of 18°C, bringing on pads at 25°C (+7) will create a wet house. We often see wet floors during summer in big bird programs because pads are brought on too soon. With a big bird program you should bring on most or all of the air before the pads. Waiting until the air can accept evaporated moisture will make the house run drier, with no compromise in bird performance.

Should I consider turning off evaporative cooling in my house if humidity gets too high, maybe using a humidistat?

The short answer, assuming that we're talking about daytime hot weather, is that during normal conditions in a house with good wind speed, there are NO cases of relative humidity rising high enough to warrant turning off the pads. Outside relative humidity drops as daytime temperature rises. Note that having good wind speed is essential. In a well-designed tunnel house the effects of high humidity on a bird are greatly reduced because we are relying on the air speed to remove a larger portion of the heat from the bird. With wind speed in the neighbourhood of 3.0 m/s, we can keep even big birds fairly comfortable even at higher humidity.

Another point to keep in mind is that most commercial humidity sensors are not very accurate at higher RH levels. As a result, you might set a humidistat to shut down pad cooling at 85% RH, but the humidistat may actually shut it off at, say, 78%, thus leading to unnecessarily high house temperatures. Use of humidistats has much more application under cold weather conditions than during hot weather.

continued on page 6

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continued from page 4

When should I turn on mid house foggers in my tunnel houses?

Many modern houses have been equipped with 6 or 7 lines of mid house fog. These fogger lines should be utilized sparingly and only when we are in full tunnel with pads and we begin to notice a drastic temperature rise from one end of the house to the other. Most tunnel houses under normal conditions will run at around 3°C or less difference from front to back. If the front to back temperature difference goes much above 3°C, mid house foggers can help. In a tight and properly equipped house having the temperature difference go to 4–5°C will usually only occur with big birds under extreme hot weather conditions.

In the field, we often see that mid house foggers are treating the symptom and not the root problem. Temperature differences greater than 3°C are typically caused by excessive air leakage or reduced tunnel fan air moving capacity. When a house is loose, much of the air the tunnel fans pull into a house enters through cracks in the side walls and not through the pads. This leads to a large temperature difference as the hot air coming through the cracks warms the cool air that entered through the pads before it reaches the tunnel fan end. Though mid house fogging nozzles will reduce the temperature rise, in the long run you will be much better off by tightening up the house.

Another drawback with mid house foggers is that when turned on too soon they will wet fans and shutters and cause dust and dirt to build up on them. Fan air moving capacity can be quickly reduced 20% or more by dirty fan shutters or worn belts. As the air moving capacity of the fans is reduced, the time it takes to exchange house air gets longer. The longer the air stays in the house the greater the end to end temperature difference will be. Proper fan maintenance will not only reduce the temperature differential but will of course improve wind chill.

Is it okay to tunnel a 1 or 2 week old bird? How do I do it and should I add water to the pads?

Under normal circumstances, any age bird, if hot, can be helped with wind chill cooling. Before going to tunnel with any age bird, the first step is to see if you can achieve comfort through minimum ventilation. If two or three tunnel fans pulling air through the vents will not achieve comfort for one or two week old birds, then going to tunnel ventilation with two tunnel (0.6 m/s) fans might be a good place to start.

In extreme weather it may be necessary to add evaporative cooling to slightly cool or temper the incoming air. A good idea here is to turn off the pump to the pads on one side of the house to limit the amount of cooling produced and allow non-cooled air from one side of the house to mix with cooled air from the other. It is a good idea not to leave the farm under these extraordinary conditions.

If my birds sit down when I tunnel ventilate, does this mean that they are too cold?

Maybe, maybe not. Birds will sit down if they are too cool, or if they are comfortable. For younger birds excessive wind speed when the air temperature is below 27°C can result in excessive bird cooling and as a result the birds will sit to stay warm. A good indicator that the birds are too cool is that virtually all the birds will be sitting down. With older birds, when the air temperature is above 27°C and there is a high level of air movement, a good indicator that the birds are comfortable is that most of the birds will be sitting and about 10–20% of the birds will be up eating and drinking.

For older birds, research has indicated that in the last two weeks of the growout, it is virtually impossible to over cool the birds with air movement when the air temperature is above 27°C.

Can I save power by cutting back the number of tunnel fans that operate at night?

No. During hot weather one key to getting maximum bird performance is making sure the birds are cooled off at night. Even in a properly operated tunnel house bird body temperature will rise during the day if house temperature is in the mid to high twenties. If their body temperature is not reduced at night they will not eat properly the next day. With air speed at night of 1 m/s it could take well over 8 hours to bring a bird's body temperature back to normal. But with an air speed of 2 m/s or higher this can be reduced to four or five hours. In addition, low tunnel air speed at night will cause large temperature differences from one end of the house to the other, thus reducing flock uniformity.

You should also keep in mind that the relative humidity of the air at night can be above 90%, which will interfere with the birds' ability to cool itself through breathing or panting. So even though the house temperature may be in the mid-twenties at night, additional air speed will be required to help compensate for the birds' loss in respiration cooling ability.

Should I operate my 6-inch evaporative cooling pads on a timer?

No. For best cooling and maximum pad life, pads should operate more or less continually during daytime hot weather. Keeping the pads fully wetted helps keep the pads clean. When pads are operated on a timer, dust and minerals are much more likely to build up in/on the pads, which can reduce their life significantly. Any dust and mineral build-up also makes it more difficult for the fans to pull air through the pads, reducing air speed and therefore cooling. We are aware that procedures in some companies include using a time on pad cooling. If a timer is used (still not best practice), off-cycles that do not allow the pads to completely dry out are best.

How do I keep my electricity bills to a minimum?

1. Buy energy efficient fans. When purchasing a fan make sure it has an energy efficiency rating of at least 20 cfm/watt (0.566m^3/minute/watt).
2. Do not use too many tunnel fans on younger birds. Don't be afraid to use your evaporative cooling pads to reduce the house temperature instead of turning on additional fans. Don't try to save power on older birds by limiting tunnel fan operating time. That will cost you a lot more than it will save you.
3. Keep fans properly maintained. A 20% reduction in air flow due to lack of fan maintenance will mean more fans will have to run and/or run longer to cool off the house.
4. Make sure your house is tight. In an older house you should be able to obtain at least 0.13" static pressure with one 122 cm (48-inch) fan operating and with everything else in the house closed up. Newer houses should be tight enough to get a reading near 0.20". Excessive air leakage leads to higher house temperatures, which in turn means that you have to operate more fans.

This article was sourced and adapted from the Poultry Engineering, Economics & Management Newsletter, Auburn University, at www.aces.edu/poultryventilation/documents/Nwsltr-24-HotWeather.pdf

Night-time cooling pad operation during extremely hot weather

Michael Czarick and Brian Fairchild
University of Georgia

It is generally recommended that evaporative cooling pads should not be operated at night because the relative humidity of the air outside a poultry house tends to run 80% or higher at night. Operating pads when the outside relative humidity is above 80% produces almost no cooling at all and tends to saturate the incoming air with moisture, making it more difficult for the birds to cool themselves.

Outside air temperature and relative humidity are inversely related. This means that as outside temperature rises in the morning, the relative humidity decreases and when air temperature in the evening falls, the relative humidity of the air increases. If you graph outside temperature and humidity over a 24 hour period you will find that the two typically 'crossover' around 27°C and 80% Rh. As a result, poultry producers will find that in the morning when temperatures climb above 27°C, the relative humidity will fall below 80% and their evaporative cooling systems are able to produce a significant amount of cooling without saturating the incoming air with moisture. In the evening when the outside temperature falls below 27°C, the humidity increases above 80%, and the cooling produced by an evaporative cooling system becomes very limited.

Under "normal" summer weather (daily high temperatures in the low to mid thirties) the crossover of temperature and relative humidity typically occurs midmorning (9–11 am) and late evening (9–11 pm). As a result, the commonly used rule of thumb that evaporative cooling pads should not be used between 10 pm and 10 am is appropriate. But, it is a rule of thumb...**not a law**. Though the crossover of temperature and relative humidity tends to consistently occur around 27°C and 80% Rh, the time of day at which the crossover occurs is much more variable. During very hot weather (daily high temperatures in the high thirties) the crossover tends to occur much later at night (12 am–2 am) and earlier in the morning (7 am–9 am) and therefore pads can be effectively used earlier in the morning and later at night. Under very extreme circumstances (daily high temperatures above 38°C) the crossover may not occur at all because the outside temperature never falls below 27°C at night therefore it is possible to operate an evaporative cooling system nearly, if not all night long.

To ensure that birds during hot weather are not unnecessarily subjected to high night-time temperatures evaporative cooling pads should be primarily operated based on house temperature **and not time of da**y. If evaporative cooling pads are set to operate at a house temperature of approximately 28°C the pads will tend to shut off in the evening when outside temperatures fall below 27°C and humidity increases above 80%. But, if the pads are shut off in the evening regardless of house temperature night-time house temperatures can on rare instances exceed those seen during the day.

It must be stressed that for +90% or more of the time evaporative cooling pads should NOT be operated at night because of the outside relative humidity is 80% or higher. But, on those relatively rare occasions where night-time temperatures remain in the mid to high thirties it is possible to use evaporative cooling pads to reduce the incoming air temperature to below 27°C without over saturating the incoming air. The keys to effective evaporative cooling pad operation is not necessarily placing them on a time clock so they can't operate at night but rather setting them to operate at a proper temperature. Evaporative cooling pads should be set to turn on somewhere in the low to mid thirties with older birds, not in the low to mid twenties. Setting pads to operate in the mid twenties will allow the pads to operate in situations where very little cooling would be produced and they would tend to increase the incoming relative humidity to 90% or higher. Setting pads to operate in the low to mid thirties will insure that the cooling produced through air movement is maximized while causing the pads to shut off at night during normal hot weather and to continue to operate into the late evening during periods of extreme temperature.

This article was sourced from The University of Georgia College of Agricultural and Environmental Sciences Cooperative Extension and has been adapted for Australian conditions. For the full article go to: www.poultryventilation.com/tips

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Monitoring litter moisture

Michael Czarick and Brian Fairchild,
University of Georgia

A major component of broiler management is maintaining good litter quality throughout the flock. Litter quality is negatively influenced by moisture. As litter moisture increases, litter quality decreases. Factors that affect litter moisture include drinker management, bird health, bird density, ventilation rates, litter depth and litter type. Typically broiler facilities are bedded with materials that have moisture content less than 10%. Under normal conditions litter moisture at the end of the flock can fluctuate from 25 to 35% depending on the factors above. During the flock the goal is to maintain a litter moisture between 15% and 30%. As litter quality deteriorates, ammonia production increases, microbial loads in the litter increase, and paw quality can decrease, none of which are conducive to good broiler performance. Many people are interested in measuring litter moisture and often are looking for the correct instrument to measure litter quality. It would be nice to have an instrument where a probe could be inserted into the litter and the moisture content value is displayed on a monitor. Currently, there are no moisture meters that return an accurate and/or repeatable measurement. Since the readings from these instruments are not reliable in litter moisture measurements, the currently accepted way of measuring litter moisture is to use a drying method.

Using this method, a sample of litter is taken from the house. It is recommended that at least three samples be taken with one from the end near the evaporative cooling pads, one from the middle of house and the other in from the rear of the house near the tunnel fans. A trench sample should be collected from each location which involves taking all the litter in a line from the middle of the house to the sidewall. This ensures that litter from different areas of the house including drinker, feeder, and sidewall as well as from the non-feeder/drinker area in the middle of the house. Once placed in the wheelbarrow or other container, this litter should then be mixed thoroughly and the caked litter should be broken up into the smallest pieces possible.

After the litter is thoroughly mixed, random samples from this even mixture should be collected. Filling a plastic shopping bag will provide more than enough material for litter moisture analysis. Be sure to seal the bag completely and do not leave it in the sun or in the heat. For best results the samples should be processed that day. If samples are stored for overnight or longer, they should be refrigerated.

Once in the lab, the samples should be poured into a small container and mixed thoroughly once more. Record the empty pan weight, and then weigh out 50 to 100 g of litter into the pan. The pan should be aluminium or other material that will not be affected by heat or moisture. It is recommended that at least 3 replicates for each sample be used to account for as much variation as possible. After weighing the pan is placed in a drying oven at 49oC for 24 hours. The pan should be removed from the drying oven and the dry weight should be obtained. The percent litter moisture can be calculated using the following equation:

% Litter moisture = 100 – ((Dry litter weight/Wet litter weight) X 100)

For example:

% Litter moisture = 100 – ((82÷100) X 100)
= 18%

Once the percent litter moisture has been calculated, an average of the three replicate samples can be calculated to determine the average litter moisture for each trench sample (front, middle and back). If multiple trench samples were collected then these can be averaged to get the percent litter moisture for the entire house. While this method may be somewhat labour intensive and provides information 24 hours later, it is an approved method that has been found to yield objective measurements that are accurate and repeatable.

The litter can be inspected visually; however, monitoring should be more than just monitoring how much caked litter is in a house. Caked litter is a symptom of an earlier moisture problem. Daily monitoring of the floor condition will be a proactive way of preventing caked litter. As shavings or used litter become damp they will be darker in colour and appearance than the drier floors. Another method of inspecting the litter is to pick up a handful and squeeze it. Litter that has moisture of less than 30% will be friable and will not stick when your hand is relaxed. Litter that is too damp will still clump together. While these methods are good, if an actual number is desired, the litter will have to be dried using the method discussed above.

This article was sourced from The University of Georgia College of Agricultural and Environmental Sciences Cooperative Extension and has been adapted for Australian conditions. For the full article go to: www.poultryventilation.com/tips

Free advice that could save you a fortune

Byron Stein, Poultry Livestock Officer, DPI

I have recently been involved in providing advice and assistance for two development applications, one for a proposed new broiler farm and one for a proposed new turkey farm. The different approaches by the applicants of these two development proposals were both notable, but for very different reasons.

Case study 1. Broiler farm

This applicant purchased a small property in a highly urbanised area in the Sydney basin. The property is surrounded by residential houses and very close to a large residential suburb. After purchasing the property the applicant hired a consultant to lodge a development application for a broiler farm with their local council. The development application was unsuccessful. The applicant then hired more consultants and spent considerably more money trying to address the reasons given by the local council for not granting development consent. After having the DA declined, the applicant and their consultant proceeded to organise a meeting with their local Department of Primary Industries (DPI) Resource Management Officer and Poultry Livestock Officer to assist them to address some of the barriers to their development application. To date it has cost the applicant well over $120,000 in consultant fees in an attempt to get this development application through their local council. Given the location of this property and the considerable resistance by neighbours and the local community to the proposal, it is highly unlikely that a single broiler shed will ever be built on this site.

Case study 1 provides us with an example of the expensive approach to lodging a development application, with little prospect of success.

Case study 2. Turkey farm

This applicant has been interested in farming turkeys for a long time and is new to the industry. He did his homework and looked around for a suitable site for several months. He consulted with several local councils to find out what he needed to comply with and what his likelihood of success would be when lodging a development application for a turkey grow-out farm. He spoke with one of the large processors to determine what their requirements and conditions would be. He also did his own homework by researching the turkey industry and by speaking to a number of turkey growers. Once he found a property he was interested in purchasing he approached the neighbours and informed them of his intention to purchase the property to grow turkeys. None of the adjoining neighbours expressed any concerns with his proposal. He then purchased the property based on the information he had gathered. He hired a consultant who came highly recommended by others in the industry to assist him with the development application. Before lodging the development application his consultant organised an on-site meeting with the local council as well as the local DPI Resource Management Officer and Poultry Livestock Officer. This gave the consultant and the applicant an opportunity to clarify any questions and issues with the various agencies that would be providing comment on the development application. It has cost this applicant well under $15,000 thus far in preparing his development application, and given that the proposals exceeds all of the development consent conditions of the local council as well as the biosecurity and environmental concerns of DPI, it is highly likely that this development application will succeed.

Case study 2 provides us with an example of an ideal approach to the development application process. In summary, this applicant:

1. Did his homework early.
2. Purchased his property AFTER first talking to councils, processors and neighbours.

3. Consulted his local council and obtained DPI advice BEFORE lodging his DA.
4. Hired a consultant who came highly recommended by other growers in the industry.
5. Invited council and DPI to his property for a meeting to work through any issues and concerns BEFORE finally lodging his DA.

What is the moral of the story?

$105,000 (and counting) is what the farmer from Case Study 1 could have saved if he consulted his local council and DPI Resource Management Officer EARLY.

Before starting a new poultry farm or before expanding an existing enterprise – do your homework and talk to your local council and DPI BEFORE lodging your development application. Have a chat with your local council to find out what hoops and hurdles you will need to jump through to get your DA approved. In some cases you may find that meeting conditions may be relatively simple. In other cases you may find that your chances of success are poor to impossible. The key is to find out early and save money and time. Another resource available to you is your local Resource Management Officer (RMO) at the Department of Primary Industries. These Officers are available to assist you with information and resources to guide you through the development application process and in many instances will be the same people that council

will consult to comment on your DA. There is no fee associated with this service and you may find that talking to your local council and to DPI BEFORE lodging your DA may save you tens of thousands of dollars and a lot of heartache and time. (Note: DPI is a Department that provides advice to both applicants and council. DPI does not provide or grant development consent as this is the responsibility of local council and/or the EPA).

So why not use this free service to potentially save you a fortune?

For more information on the resources available from DPI when considering a poultry development go to: www.dpi.nsw.gov.au/environment/landuse-planning/agriculture or ring your local DPI office for contact details of the Resource Management Officer responsible for your region.

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Darkling beetles in broiler houses

The darkling beetle is an insect that is commonly found around poultry, especially meat production birds and to lesser extent commercial layers. The beetle is also known as 'lesser meal worm' and its common habitat is flour, meal, and other grain and cereal products. It originated in the tropics and is well suited for warm humid conditions making the broiler house the perfect habitat for it. Inside the houses, beetles can be found under feed pans and feed lines where spilled feed is mixed with litter. The life cycle of darkling beetles take 40–100 days depending on the temperature and humidity, as they tend to multiply more quickly as the temperature increases. The adult beetle can live for more than twelve months, with the female beetle laying up to 2000 eggs during its lifetime.

Problems associated with Darkling Beetles

High beetle populations in poultry houses can pose serious economic and bird health problems for the grower. When the birds are removed from the houses, beetles will migrate from under the feed lines and feed pans to the walls of the house. They move into the walls burrowing into the insulation and structural wood of the houses to pupate. The resulting insulation destruction causes a reduction in the 'tightness' of the houses and increases heating and cooling costs for the grower. Young birds can consume large numbers of beetles which can interfere with feed consumption and can result in disease transmission. It has been shown that darkling beetles can spread a number of poultry diseases such as: fowl pox and Newcastle disease and act as hosts for *E. coli* and Salmonella. They also act as intermediate hosts for roundworms and tapeworms. Another important problem that can arise from high beetle populations is that of neighbour relations. Litter that had been spread in paddocks and contains high beetle numbers have resulted in nuisance complaints because these displaced beetles tend to seek refuge in nearby homes

Beetle Control

Delaying litter removal to only once every four or five flocks to reduce production costs has increased the beetle problem and made control more difficult. As built-up litter systems increase within the industry, it has become evident that controlling darkling beetles will not be an easy task. Having an effective and successful beetle control program is dependent on several factors:

1. Litter depth. If the litter is too deep, it will provide a means of escape for beetles to evade the effects of the insecticide.
2. One must follow the manufacturer's directions when mixing and applying the insecticide. Increasing the amount of water used to mix the insecticide or reducing the amount of insecticide in the mix will reduce the effectiveness of the chemical. Mixing insecticides with disinfectants will reduce the effectiveness of the pesticide.
3. The area in the house where the insecticide is applied is important. Insecticide should be applied under the feed lines, along and on the walls, in the corners and around the entrances of the house.
4. It is best to apply the insecticide during the warmer times of the day since this is when the beetles are most active. However, insecticides with residual effect will still be effective when beetles emerge from the litter.
5. Insecticide should be applied to the litter rather than on the floor, and litter should always be sprayed with insecticide prior to being removed from the houses and spread on paddocks.
6. Beetle populations should closely be monitored and heavy infestations may require two applications.

Keys to successful use of insecticides

- ✓ Rotate between the different classes of chemicals at least every two flocks. If one insecticide product is used for extended time, the beetles will become resistant to it and that chemical will no longer be effective
- ✓ Do not be too hasty in judging any particular chemical to be ineffective. The number of beetles killed in the first 24 hours is not the best indication of effectiveness. Some insecticides will kill the beetles in just a few hours and others may take a few days to begin killing beetles, but will then continue to kill beetles for the entire growout. When the birds are 4–5 weeks old look under several feed pans and see how beetles and larvae you find. If you only have a few beetles and larvae you have good control.

- ✓ Follow label rates when applying insecticides. Using less than the recommended rate will lead to increased resistance.
- ✓ If you are seeing large populations of beetles, apply your insecticide before placement of each flock.
- ✓ When spraying insecticide change your nozzle tips to a flat fan, 04–08 nozzle tip to get a fine mist, instead of a course spray application.
- ✓ Apply insecticide in a 1m wide band under the feed lines and a 1m wide band along the walls, including the footing and 0.5 m up onto the surface above the footing, instead of the whole house. Focusing the insecticide applications to the areas where the beetles are living will offer much better control.
- ✓ Add 1 packet of Citric Acid or PWT to each Organophosphate or Pyrethroid insecticide tank mix before applying the material. These insecticides kill more beetles when they have an acid added to the tank mix.
- ✓ Add 57 g of clear household ammonia/4 L of tank mix when using Elector.
- ✓ Apply insecticide on top of the litter after caking out, or on top of fresh shavings after clean out. The beetles crawl on top of the litter as they are making their way to the feed line areas after bird placement. You will not get as good results if you apply the insecticide to the bare floor.

Closing comments

Darkling beetles are insect pests found in poultry houses often times in large numbers. High infestation inside poultry houses can result in economic losses and a potential for disease spread within the flock. Over the years the beetles have developed resistance to some insecticides. Effective control of these pests requires rotation of chemical to reduce the potential development of resistance to active ingredients in the insecticides. Other management practices such as time and mode of application, and monitoring the changes in the beetle population can also help in controlling darkling beetles and reducing their negative impact on the industry.

This article was sourced and adpated from two publications:

1. Understanding and controlling litter beetles by Robert Rowland ,Ken Macklin, Gene Simpson, Jim McDonald and Jess Campbell, Auburn University. For the full article go to www.moni-tec.com/News_AuburnUni_ControllingLitterBeatles-2007.pdf
2. Darkling beetles in broiler houses by Claudia Dunkley, University of Georgia. For the full article go to www.poultryventilation.com/sites/default/files/poultry-tips/2010/2010%207%20Broiler%20Beetles.pdf

Level 1 Odour Assessment Tool designed to save growers time and money

For those who are currently looking at building a new poultry farm or for those seeking to expand an existing enterprise, it may be timely to be reminded of the Level 1 Odour Calculator available from the Office of Environment and Heritage (OEH, formerly DECCW). As many growers would know, one of the costs associated with lodging a DA for a new farm, or for changes to an existing farm, is providing an odour report to your local council or EPA. In some instances, where properties are large and/or neighbours or other land users (e.g. schools, recreational areas etc) are not nearby, results from a Level 1 Odour Assessment Calculator can be used to support your Development Application. The tool is free, is easy to use and was designed as an alternative to more complex and expensive Level 2 or Level 3 assessments in situations where odour is highly unlikely to impact on neighbours e.g. large properties and/or remote locations. The tool is also a useful means of assessing sites before purchase, rather than attempting to develop farms at sites which are unlikely to be suitable for poultry production.

It is important to note that the Level 1 Odour Calculator is based on conservative estimates and measures, and that failure to meet odour requirements using a level 1 calculator does not necessarily mean that development may not proceed. However, it does mean that you will need to employ a consultant to assess your site using level 2 or level 3 odour assessment processes which involve complex and expensive odour dispersion modelling to demonstrate that the proposal will be able to meet the relevant odour criteria. The complexity of this process, and the uncertainties involved in modelling also often means that consent authorities will require additional information during the development assessment process to ensure their decisions are appropriate. Additional information requests can cause delays and additional costs in the development assessment process. The use of the Level 1 assessment process for site selection and your development applications can potentially reduce both the costs and time involved in securing development consent.

In summary

The next time you are required to conduct an odour impact assessment as part of your DA, it may be worth using the free, easy to use Level 1 Odour Calculator developed by OEH. You may find that your site passes the Level 1 Odour assessment, which in turn may save you thousands of dollars in consultant fees.

The calculator is available on the internet at: www.environment.nsw.gov.au/air/odour.htm

CNPI receives just recognition

Winner of the AustSafe Super 'Agriculture / Horticulture and Associated Services category' was Central North Poultry Innovation Ltd. This ground-breaking cluster of poultry meat producers in the Tamworth District has yielded the critical mass to affect policy, fund research and address local industry issues. Other finalists were Williams Seeders of Armidale and the New England Australia Branding Strategy Alliance (wine).

Air Quality Site Assessment Tool

An online Air Quality Site Assessment Tool is available to help growers determine the areas in their operations where there are opportunities to make changes that result in reduced odour emissions. The tool is called NAQSAT which stands for National Air Quality Site Assessment Tool. It is designed for growers in the USA but has application for users throughout the world, including Australia. It was designed to provide information and education, only. It is not intended to provide emissions data and/or regulatory guidance.

NAQSAT considers the influence of diet and feed management; animal housing and management; manure handling, storage and application practices; mortality management; and internal and nearby road management practices on air emissions based upon the most credible information and understanding of management systems available when the tool was developed. Practices that may not influence emissions, but may affect neighbour relations are also considered.

Upon completion of the on-line tool, NAQSAT users are shown a report that summarizes percentage scores for six emissions of primary interest (ammonia, methane, volatile organic compounds, hydrogen sulfide, particulates, and odour). The scores apply for the given facility and associated infrastructure and reflect the degree to which an operation has incorporated all of the feasible practices that would effectively minimize air emissions from the facility. For example, a bar that is predominately green for odour

indicates that a producer is employing a relatively high degree of management and incorporating most of the best practices currently available for controlling odour from that specific component of his/her operation. A mostly white bar indicates that there are additional measures or improvements in management that the producer should consider. Scores within the categorized management areas provide the user with information regarding the extents to which effective practices are being implemented within each of the specific areas (and, conversely, the extents to which opportunities remain to improve management). Management areas receiving low scores will generally present more low-hanging-fruit opportunities.

The National Air Quality Site Assessment Tool (NAQSAT) is available free of charge at http://naqsat.tamu.edu.

Agreement on STAR Duck Breed Distribution

The French company Grimaud Freres Selection, a world leader in duck genetic selection and breeding, has reached an exclusive agreement to supply Pepe's Ducks with the Grimaud STAR duck breed in the Australian market for 10 years.

The agreement follows the successful placement of the Grand Parent STAR 53 duck at Pepe's Ducks' operations at Windsor in Sydney's north-west in 2010.

The 10-year agreement reflects the strong ties between Grimaud Freres Selection and Pepe's Ducks that began in 2003, reflecting the commitment of both companies to the better development of local duck meat production and consumption in Australia.

For Grimaud Freres Selection, this agreement reflects its vision for developing a sustainable relationship with a long-term client in the Oceania region.

For Pepe's Ducks, this agreement allows it to plan long-term to ensure its duck meat is of the highest quality, helping underpin its commercial advantage in the Australian market. It also provides security regarding the quality of their duck meat products, as well as helping optimize production costs because of the economic advantages presented by the STAR duck breed.

The agreement certainly gives the best guarantee for the future of Pepe's Ducks' brand name.

This story was sourced from: http://www.thepoultrysite.com/poultrynews/24039/agreement-on-star-duck-breed-distribution

News from NSW Farmers – James Mifsud elected as the new Chairman of the Poultry Meat Committee

James Mifsud was elected as the new chairman of the NSW Farmers Poultry Meat Committee on the 18 November 2011. Gary Ekert was elected as vice chairman and Lorraine Wilson was returned as executive council representative.

James Mifsud is a turkey farmer for Inghams near Goulburn and runs the family farm "Trilla" with his wife Frances and 3 children. James has been an active member of his local grower group as a representative on the negotiating team for 7 years and has also been the vice Chairman on the Association committee for the past 5 years.

Gary Ekert is still the current Chairman of the Australian Chicken Growers Council representing NSW growers and also chairs his local Poultry Meat Branch at Newcastle.

Priority areas for the Committee in 2012 include retention and improvements to state Poultry legislation,

Animal Welfare, Environmental management, growing and retaining membership, and improved communication within industry and the wider community.

Poultry growers can contact James on 0418 960 395 or email trilla2@bigpond.com or me on 0428 882 178, email cashmanp@nswfarmers.org.au to discuss any issues of concern.

Peter Cashman, Poultry Meat Manager, NSW Farmers.

New Meat Chicken Best Practice Management Guidelines to be published in early 2012

The Poultry Meat Industry Committee have, together with input from processors, growers and government representatives, developed a new set of Best Practice Management Manuals for the meat chicken industry.

The Best Practice Management for Meat Chicken Production in New South Wales, which consists of two manuals, replaces the NSW Meat Chicken Farming Guidelines (2004) to reflect changes in industry operational practice, environmental guidelines and planning, design and construction of meat chicken sheds and associated infrastructure.

The aim is to provide guidance for the planning, design, construction, management and welfare of meat chicken farms in NSW with a particular focus on minimising environmental impacts.

The best practice manuals will also aid key stakeholders involved in development applications, including consent authorities, regulatory agencies and industry consultants.

In deciding on meat chicken farm proposals, responsible authorities will be advised to use the manuals to help determine reasonable best management practice. The approval authority may refer to the Manuals (particularly Part 1) in planning policies, plans and guidelines.

The Manuals detail location, design and management principles to ensure meat chicken farming can be environmentally sustainable. Potential environmental impacts of meat chicken farms that include community amenity, water and land contamination have been identified, along with measures to minimise the potential for these impacts.

Once finalised, the Manuals will be published on the Department of Primary Industries website at www.dpi.nsw.gov.au/agriculture/livestock/poultry

Chicken Company expanding in NSW

Broiler producer, ProTen, is seeking funding for expansion in New South Wales.

New Zealand-funded Australian poultry company, ProTen, is seeking $15 million from investors to fund the development of 96 chicken sheds across four farms in New South Wales, according to Scoop, citing a report in BusinessDesk.

ProTen, which trades on the Unlisted.co.nz platform, represents approximately six per cent of Australian poultry market share. It was founded in New Zealand in 2001, merging the broiler chicken farming businesses of four existing operations.

In 2002, ProTen began investing in the Australian market and by 2006, all New Zealand assets were sold off and the capital was reinvested into the Australian business.

Chief financial officer, Matthew Holloway, told BusinessDesk the company does not intend to stop quoting on the securities trading site, despite having no plans for development of its business in New Zealand.

He said: "The company still has a strong interest in New Zealand with two of the four directors being kiwis and the majority of our shareholders being New Zealand residents."

This story was sourced from: www.thepoultrysite.com/poultrynews/23823/chicken-company-seeks-new-zealand-investors

A4 black and white, Titan Poultry Equipment Pty Ltd ad

Red flag issues

Pigeons infected with paramyxovirus in Victoria

Paramyxovirus 1 (PMV1), the disease causing agent of Newcastle Disease, continues to infect pigeons in Victoria. As of the 15 December 2011 there were 55 properties in Victoria where the virus has been confirmed in pigeons that were sick or have died, located around Shepparton and Melbourne suburbs. Of those, 33 have been resolved.

There have however been five more new suspect cases of PMV1 in feral pigeons across Melbourne. All of these suspect cases were within 5 kilometres of a previously confirmed positive PMV1 case in the feral pigeon population. To date, feral pigeons in twelve

locations in Melbourne have tested positive to PMV1. The last confirmed case of PMV1 occurred on14 December 2011.

To protect NSW flocks from this Avian Paramyxovirus, restrictions have been introduced on the entry of pigeons, pigeon eggs or equipment used in association with pigeon from Victoria into NSW. These restrictions apply to birds or equipment that have been in Victoria at any time since 31 August 2011.

Pigeons may only enter if the conditions for flock isolation and testing criteria set out in the Order are met and they are accompanied by the Declaration re conditions in Importation Order.

Poultry growers and egg producers are urged to maintain strict biosecurity control measures and to report, without delay, any suspicious illnesses to their processor or NSW DPI.

Further information on paramyxovirus in pigeons can be found at: www.dpi.nsw.gov.au/agriculture/livestock/poultry/health-disease/paramyxovirus-in-pigeons

A4 Cordina Farms ad

A4 black and white, Retracom ad