

Roger Adams from Darling Downs Fresh Eggs

# Poultry Digest

April/May 2011  
Volume 26, Number 5

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POULTRY DIGEST consists of a bi-monthly management magazine and an annual industry review.  
Published by C D Supplies Pty Ltd (ACN 091 560 557)

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SUBSCRIPTIONS: AUSTRALIA One year – \$55.00\*.  
Send payment and full details to (subscriptions only):

Primary Media, GPO Box 1846,  
Sydney NSW 2001

NEW ZEALAND One year – \$A80.

OTHER COUNTRIES Asia Pacific including the Subcontinent – One year: Airmail – \$A80;

Rest of the World – One year: Airmail – \$A92.

Send payment in Australian dollars.

\*Australia subscription rate includes GST.

CHANGE OF ADDRESS FOR SUBSCRIPTIONS ONLY: Send details, along with the old address label, to GPO Box 1846, Sydney NSW 2001 (subscriptions only).

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Darling Downs Fresh Eggs secures its future with feed mill

In April/May 2005 *Poultry Digest* reported on the first stages of an upgrade at Darling Downs Fresh Eggs, Pittsworth Queensland; an enterprise run by the Adams family, established back in 1972. Now, with the upgrade of the five sheds finished, the 200,000 layer capacity farm is supplying retailers throughout Queensland and interstate and Peter Bedwell revisited the farm to report on the decision to have their own on-site feedmill.

## 22 COMPANY PROFILE

Vacuum & Milling Solutions' feedmills for the poultry industry

Vacuum & Milling Solutions Pty Ltd, established and operated by Martin Liese, is a relative newcomer to the poultry industry but has, over the last 17 years, accumulated a lot of valuable experience in its speciality which is the design and installation of specialised on-farm grain milling facilities.

## 28 NUTRITION FEATURE

Egg production in the future: Focus on phyto-genics

Dr Tobias Steiner from Biomin looks at egg production in the future and how the requirement for energy, nutrients, trace minerals and vitamins for high-performing layers must be met by implementation of adequate feed formulations adapted to the birds' requirements as closely as possible.

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A new product to beat Litter Beetle

Litter Beetle is a common pest of broiler sheds in much of Australia especially in sheds with earthen floors. Warwick Madden from Further Research & Consulting reports on the outcomes of a trial of a new insecticide called BeetleBETA.

## NEWS

### 4 The 'Myth of the Ethical Consumer' and what it means for the producers

In the course of a lecture that Professor Timothy Devinney gave at UTS in Sydney recently, he outlined fascinating research and case studies and clearly revealed the complexity of human behaviour as it relates to the choices and actions we actually make versus those we believe we would make. Peter Bedwell went along and reports on what this means for the poultry industry.

### 8 First RSPCA approved chicken in SA, TAS and Victoria

South Australians, Tasmanians and Victorians will have easier access to higher welfare chicken with the launch of the first RSPCA Approved chicken. The chickens are raised in the Bendigo Valley on farms that meet the RSPCA's high animal welfare standards.

### 20 Tara Jarman explains the Alltech Quality System

On March 25, 2011 Alltech's Asia-Pacific Quality Assurance Manager, Tara Jarman was in Sydney with Key Accounts Manager Dr Andreas Kocher to explain the safety benefits of the Alltech Quality System (AQS) to feed suppliers.

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## HEALTH FEATURE

# A new product to beat Litter Beetle

By WARWICK MADDEN, Further Research & Consulting. [www.further.net.au](http://www.further.net.au)

**L**itter beetle (*Alphitobius diaperinus*) is a common pest of broiler sheds in much of Australia especially in sheds with earthen floors.

As a matter of course sheds are normally treated for litter beetle after clean-out and sanitising. Litter beetles are well known as vectors of various poultry diseases so it is imperative that they be controlled.

Tapeworm in particular can be a problem in Australian chickens and litter beetle larvae are the most likely vector. In addition, litter beetles are also known to damage insulation in sheds, reducing its effectiveness.

Traditionally sheds were sprayed after clean out using fenitrothion. Fenitrothion, an organophosphate chemical, was used for many years and over time resistance built up rendering it less effective.

In addition, worker safety issues became a growing concern with the move away from organophosphate and carbamate chemicals in the 1990s.

The introduction of a cyfluthrin wettable powder formulation (Tugon WP, now known as Prolong) in the late 90s saw a major move away from the old chemistry. Cyfluthrin is a synthetic pyrethroid, a class

of chemicals noted for its fast knockdown, quick kill and relatively low mammalian toxicity. Tugon/Prolong became the product of choice for the control of litter beetle in broiler sheds.

Cyfluthrin use became widespread and with few alternatives being used it was inevitable that some resistance in beetle populations would occur.

Lambkin and Rice (2006) noted resistance to cyfluthrin in litter beetle populations in broiler sheds in south east Queensland as early as 2001. In the study it appeared that the level of resistance was related to the number of cyfluthrin applications.

Betacyfluthrin was developed as a second generation pyrethroid by Bayer. Cyfluthrin is made up of four different isomers, or forms, of the active ingredient. Studies showed that two of these isomers had very much reduced insecticidal activity and were removed from the formulation creating betacyfluthrin.

One of the first crops it was used in was cotton where there was a high level of pyrethroid resistance in the cotton bollworm (*Helicoverpa armigera*).

Betacyfluthrin was one of the few

products to show improved control of resistant populations.

A study by Tomberlin *et al* (2008) showed high resistance levels in litter beetles in the USA to first generation pyrethroid, permethrin.

However they showed vastly improved control using betacyfluthrin and another newer generation pyrethroid. This would indicate that the newer pyrethroids are effective in suppressing resistant populations of litter beetle.

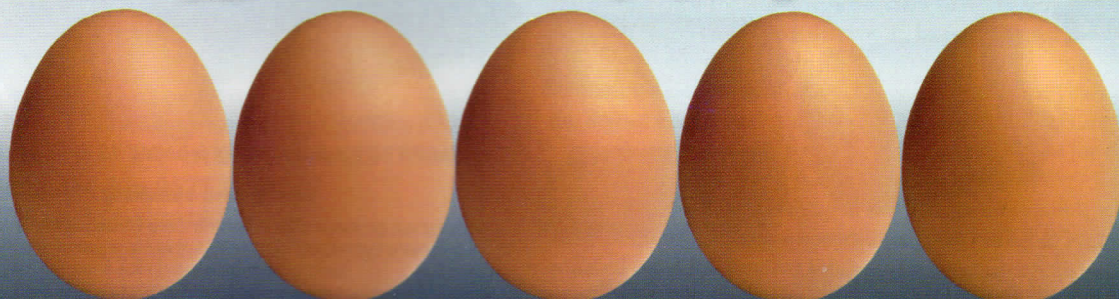
A trial using new BeetleBETA SC (betacyfluthrin 125g/L) insecticide was carried out on a broiler farm in western Sydney to generate registration data.

BeetleBETA has been developed by Sundew Solutions Pty Ltd, a new R&D based pest control technology company.

In the trial, three earthen floor broiler sheds with high populations of litter beetles were divided in two. Before spraying, litter had been removed and the sheds had been sanitised. Pre-treatment beetle counts were taken when the previous broilers were still present not long before their removal.

Half of each shed was sprayed with BeetleBETA (80mL per 50L) and the other half with Prolong 10 WP (100g per 50L).

*These eggs are nearly perfect*



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The application rate for both products was 10L of spray per 100 m<sup>2</sup>.

Spray was applied to all floor areas plus one metre up the wall of the sheds on all sides. Where the two treatments merged in the middle of the shed a sampling buffer zone was left to avoid potential overlap. No beetle samples were taken from these zones.

The sheds were sampled regularly for beetles and larvae. Four sampling positions were established and marked out in each replicate.

A 100mL scoop of litter was taken from each position along the feeder line. Samples were taken at the end of the previous batch then at 2, 3, 5, 6 and 7 weeks covering the whole cycle.

The numbers of live beetles and larvae were counted manually in the laboratory within 24 hours of each sampling. Larvae less than 10mm long were not counted.

### Results

The results were statistically analysed by Dr John Rogers of Research Connections and Consulting (RCAC). The results indicated that BeetleBETA was more efficacious than Prolong especially against litter beetle larvae.

This is shown clearly in the chart. Numbers of adult beetles in both treatments remained relatively low throughout.

A distinct peak in larvae numbers can be seen at six weeks for Prolong. Larvae numbers appear to drop at seven weeks probably due to pupation. Larvae numbers for BeetleBETA remained low throughout.

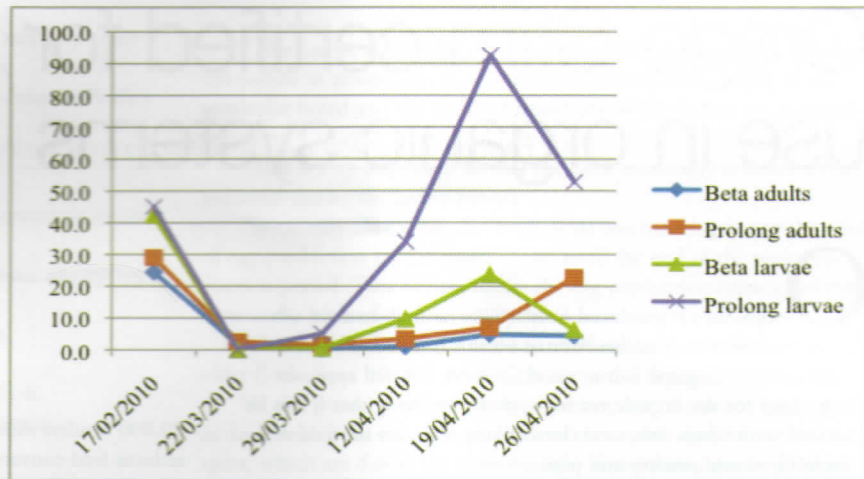


Chart: the average number of litter beetle adults and larvae per treatment at each sampling date. Treatment was carried out on 01/03/10.

The grower commented that the product was easy to measure and mix, being a liquid rather than a wettable powder. He also noticed higher numbers of dead beetles in the BeetleBETA treated plots of the sheds.

BeetleBETA was recently registered (under the name MaxumPRO 125 SC) by the APVMA for the control of litter beetle along with a range of other general pests such as spiders, ants and cockroaches. The product, in 1L measure packs, will be available through poultry distribution channels in August 2011.

BeetleBETA offers growers an effective litter beetle management tool alternative. For more information contact Sundew Solutions on 1800 786 339 or email

info@sundewsolutions.com.au for pre-launch commercial trial samples. Visit the website at [www.sundewsolutions.com.au](http://www.sundewsolutions.com.au)

### References

- Lambkin, T.A. and Rice, S.J. (2006) Baseline responses of *Alphitobius diaperinus* (Coleoptera: Tenebrionidae) to cyfluthrin and detection of strong resistance in field populations in eastern Australia. *Journal of Economic Entomology*, 99 (3). pp. 908-913.
- Tomberlin J.K., Richman D. and Myers H.M. (2008) Susceptibility of *Alphitobius diaperinus* (Coleoptera: Tenebrionidae) from broiler facilities in Texas to four insecticides. *Journal of Economic Entomology*, 101(2). pp. 480-483.

PHASE	1-28 DAYS	28 DAYS-MARKET*
PRODUCT	Maxiban.	Monteban. Rumensin.
	Surmax.	
	ENTERITIS RISK	ENTERITIS RISK
	COCCIDIA CHALLENGE	
	COCCIDIA CHALLENGE	

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