

GROWTEC RABBITS NEWS

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Hello everyone!

Welcome to another newsletter. Again we have some new and interesting information for you.

Please note that the FRIA AGM will be held on 8th September in Melbourne – please see www.fria.com.au for more information.

Regards

Daniel



The development of Rabbit Central continues with both the PC and handheld software both having features added to improve their flexibility.

For more information about Rabbit Central please see our web site or send us an email.

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Ventilation and Air Quality in Rabbit Housings

By Darren Smethurst

Hydor Ventilation Pty. Ltd.

With the warmer summer months just around the corner, now is the time to start thinking about the environmental conditions within your rabbit sheds and the ability of existing equipment to ensure livestock are housed in the best possible conditions.

Most experts agree that the optimum temperature for growing rabbits without causing undue discomfort is within the 10 - 25° C range, and in normal Australian conditions this can present some serious challenges for most rabbit growers. Other environmental factors that can distress your livestock (and people working within the rabbitry) are the excessive build-up of moisture and ammonia.

These conditions can all be controlled by the installation of a properly designed ventilation system. In some areas natural air movement can be relied upon to provide adequate ventilation for most of the year, however this luxury is normally restricted to coastal regions where a 'sea breeze' is present almost everyday.

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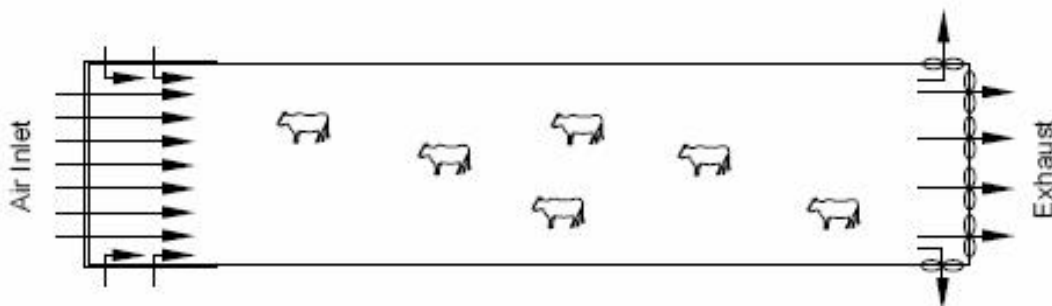
COOLING EFFICIENCY					
AIR SPEED fpm					
98 fpm	197 fpm	295 fpm	394 fpm	492 fpm	591 fpm
91.3%	90.0%	88.6%	87.0%	86.6%	84.80%

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For the rest of us living away from the coast, mechanical ventilation systems should be considered to ensure your rabbits grow in a relatively stable and controllable environment to avoid temperature extremes and provide maximum comfort.

The simplest and most cost effective method to control temperature, moisture and ammonia levels is the use of properly designed fans to create air movement within the housing, introduce fresh air and extract stale air from the rabbit's surroundings.

The range of fans and ventilation products available in Australia is vast but advice should be sort from an expert before making a purchase decision as most sheds are unique and have varying ventilation needs. An elaborate system costing tens of thousands of dollars that has been designed for a new shed might be totally inappropriate for an existing building that has been converted to house rabbits and a few hundred dollars might be all that is needed.



Tunnel ventilation uses high volume exhaust fans to create airflow through the housing, ensuring that livestock have a constant supply of fresh air.

I was recently asked to design a ventilation system for a farmer in the process of converting sheds that had previously housed pigs into a rabbitry and he was surprised when the total cost of the recommended system was around ¼ of his own estimates. If he had designed the system without consultation a large amount of capital would have been wasted and the design may not have

delivered the required results with the possibility of his rabbits expected to grow in unsuitable conditions.

The main mechanical considerations when designing a ventilation system are circulation of air within the housing to ensure even temperature and humidity distribution, introduction of fresh air and the extraction of stale air. Tunnel ventilation systems used within the poultry industry employ large extraction fans (capable of moving around 12m³ of air per second) at one end of the shed to satisfy all three types of air movement in one hit. As air is exhausted from one end of the shed, fresh air is drawn in from the other end to replace the expelled air and this action creates a gentle breeze through the buildings so that the poultry are never in a 'still air' environment. Evaporative cooling pads can be added to the inlet side of the system for cooling if required. Tunnel ventilation systems can also be used for rabbits.



High velocity belt driven fans are used in tunnel ventilated sheds to move large volumes of air with low noise and minimal running costs.

Effective internal air circulation can be achieved with the use of fans suspended from the roof of the housing. These fans are generally referred to as 'stirring' fans as they mix static air and create movement which help to keep an even spread of temperature and humidity within the rabbit's immediate environment. Stirring fans come in a variety of styles and sizes. Things to look for when choosing a stirring fan are the 'throw' of the fan (how far air is discharged by the fan), volume of air moved per second, noise generated by the fan, power consumption, suitability of guards and water/dust proofing of motor & electrical connections.

Other items to take into account for all ventilation systems are initial purchase & installation costs, ongoing running costs, power source & availability, operating noise levels of the equipment, air velocity through the housing and fan construction & durability. The

noise generated by fans should be kept to a minimum not only for the welfare of your rabbits, but also in respect for any close-by neighbours.

Careful consideration for the construction and suitability of fans will reduce the likelihood of unexpected breakdowns and replacement costs. The fan housing should be either galvanised or stainless steel and fan blades either chemical resistant & UV stabilised plastics or stainless steel. Electric motors, switchgear, controls and connections should be water & dust proof, designed to tolerate harsh agricultural environments and have the ability to cope with the odd spray of water and cleaning chemicals. Fans manufactured and intended for domestic use such as ceiling sweep fans and plastic pedestal style fans should be avoided in any agricultural application, as they are not designed to withstand the excessive dust, moisture and ammonia experienced in animal housings.

All fans should be fitted with guards complying with Australian standards and if installed in an external wall or roof should have the ability to prevent the entry of rodents, birds, predators and other pests when not operating. The open area of guards should be large enough to allow any airborne rabbit hair to pass through without clogging, which can result in a



Stirring fans can be suspended inside the rabbit housing to create even temperature and humidity distribution.

reduction of air passing through the fan and a subsequent decrease in the fan's operating efficiency.

Extraction fans can be roof mounted or installed into walls and / or gables of sheds. The size, shape and design of the housing will determine the most appropriate type and position for extraction fans. Mechanically driven shutters should be fitted to fans mounted in external walls to ensure that back-drafts and rain cannot enter the housing when fans are not running. Air activated shutters should be avoided where possible due to higher than average failure rates.

Several factors should be considered when determining the size and number of extraction fans required, the most important being the amount of air to be moved. Rabbits generally require around 15 – 20 air changes per hour, therefore you will need to estimate the volume of the housing and multiply by 15 to calculate the minimum amount of air to be moved every hour. In smaller sheds one large fan might be sufficient but larger structures may require the use of several fans to deliver satisfactory results.

You must also ensure that fresh air inlets are large enough to allow at least the same amount of air to enter the housing as is being extracted. As with extraction fans, all fresh air inlets should not allow vermin, rodents, birds, predators etc to enter the building. Inlets should be checked on a regular basis to ensure that they have not become clogged with foreign materials that may restrict airflow.

Above all else the ventilation system that you choose should be suitable for your unique situation and consultation with a ventilation expert rather than a fan salesperson is highly recommended.

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What value should you place on good genetics?

Daniel Brown

Growtec Pty Ltd

Growtec has invested a large amount of time and money into our breeding program. This includes things like a vast amount of pedigree and data recording, breeding management and data processing. As some of these costs are past on to the customer in the price of breeding stock we are frequently asked to justify the price of the rabbits.

Recently we were lucky to have access to an independent data set which compared our Growtec breeding stock with some commercial rabbits.

These records were collected from a commercial rabbitry over a 6 month period and were not influenced by Growtec. Please note that all these results only include data from when the rabbits were being run in the commercial rabbitry. Only the raw production data was used – no adjustments were made in any way.

Each breeder rabbit was categorised into either 1 of 3 possible Origins;

- 1) Growtec ~ Pure Growtec
- 2) Comm ~ Pure Commercial
- 3) Cross ~ A cross of Growtec and Commercial

We then looked at the average reproductive and growth performance of each group of Breeders.

Abbreviations;

NBA ~ Number born alive

NW ~ Number weaned

LitWt ~ Total litter weight at weaning

ADG ~ Average daily grain (g/day)

Table 1. Average reproductive performance by rabbit Origin

Origin	Count	Average NBA	Average NW	Average LitWt
Growtec	175	6.7	5.6	3949.7
Cross	15	6.6	4.9	3536.7
Comm	89	7.2	4.8	3482.9

The Growtec rabbits have less NBA but have more NW and Litter weight at weaning. In both cases the Crossed rabbits are performing in the middle as expected.

Table 2. Average growth rate by rabbit Origin

Origin	Count	Average Wt	Average Age	Average ADG
Growtec	1,000	2184.6	67.5	32.3
Cross	355	2250.5	72.9	30.9
Comm	133	2194.4	73.9	29.7

The Growtec rabbits are growing faster by 2.6 grams per day. Once again the Crossed rabbits are in between. The Growtec rabbits are reaching the target weight (2.5 kg) 6.9 days earlier than the Comm rabbits.

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What is the difference between the Growtec selection lines?

At Growtec we have 4 selection lines additional to the commercial line which are aimed at breeding rabbits for slightly different production systems. We also have a large number of commercial rabbits. In Table 3, I compared the different lines in a similar manner to that shown earlier.

Table 3. Average reproductive performance by selection Lines

Line	Count	Average NBA	Average NW	Average LitWt
Reproductive	124	7.8	6.0	3902.8
Californian	16	7.0	5.1	3559.4
Commercial	330	7.0	4.4	3093.7
Dual Purpose	86	5.8	4.2	2931.4
Growth	121	5.4	4.0	3142.8

This table shows that we have significant differences between the selection lines for all traits. It is nice to see that the Reproductive line is way ahead for NBA, NW and litter weight at weaning.

Table 4. Average growth rate by selection Line

Line	Count	Average Wt	Average Age	Average ADG
Growth	95	2389.1	67.7	35.3
Dual Purpose	128	2101.1	65.4	32.1
Reproductive	93	2191.3	70.1	31.3
Californian	17	2193.5	70.9	30.9
Commercial	323	2233.4	74.1	30.1

The data in Table 4 only includes records from rabbits where both the sire and dam were from the same selection line. Once again we have great divergence between the selection lines, most notably that the Growth line is +5 grams per day! This means they are getting to 2.5 kg 12 days earlier. Alternately if you grow them all out to 10 weeks they are a whopping 358 grams heavier.

Conclusions

All of these results are proof of profit from our breeding program! It means that our selection program for the last 10 years has worked. We have not manipulated the figures in any way ~ they are raw production figures from 2 different commercial rabbit farms. Science and Estimated Breeding Values (EBVs) do work!

When these extra production benefits are introduced into a commercial size rabbitry of 300 to 1000 does it adds up to many thousands of dollars each and every year.

Another conclusion from this work is the need for accurate information that you can make informed and unbiased business decisions from. As a business manager you need to record and measure production statistics then have the tools at your finger tips to analyze the data and make use of it. It is only then you will really know what is going on in your business! You can think or guess about what production is like but if you don't measure and record it you don't really know!

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