

Cold Incubators?

Lloyd Marshall, Western Australia

Refrigeration units, under usual circumstances, would be entirely out of place in an incubator designed to keep eggs at the best possible temperature to ensure that they hatch.

But if you live in a hot climate and your incubator is not in a room where the temperature outside the incubator is constant, a “refrigerated” incubator can come in very handy.

Kym Gaunt from Kimani Aviaries at Perth in Western Australia hand-builds incubators and brooders that have been described as “Rolls Royce” models.

“We don’t mass manufacture on a production line,” Kym said, “which means we ensure that all our gear is exactly what the customer wants.”

Kym and his partner Diana Andersen, who live in the hills outside Perth, found their incubators were not coping well in hot weather.

“This was because they were in a room which is not air conditioned and the incubators were sometimes getting too hot,” Kym said, “which was causing problems with the eggs.”

He started researching to find a way to quickly bring down the temperature without the need for someone to constantly check the boxes.

“I came up with the Peltier device,” Kym said, “which is a relatively small piece of equipment with no moving parts that is able to quickly reduce temperature by up to 10 degrees.”

Designed by Frenchman Jean Peltier, the device, which is wafer-like, around 35mm square and 3mm thick, works by drawing heat away from the area it is directed at.

A heat trough is attached to the outside of the incubator and two Peltier devices are attached to an aluminum plate inside the box.

“The Peltier units draw heat through the plate, rapidly cooling the box,” Kym said, “and the process is

controlled by a digital thermostat where the required temperature and can be set and quickly changed if necessary.”

Kym said the Peltier-equipped equipment runs the same as a regular incubator, but the additional parts need to be fitted by him.

“Because of the way it needs to be set up and calibrated I need to do it,” he said, “and it can be fitted to any of our incubators, no matter how old the unit is.”

He said the unit is used in his nursery room, which is not air conditioned, because he and Diana don’t want any disasters.

“I could not count the number of times we’ve had people tell us their eggs have been cooked because the temperature outside the incubator rose dramatically and there was no quick way of bringing the level down,” Kym said, “and this solution seems to be perfect.”

He has used it for many birds, including ducks, poultry, cockatoos, and lorikeets with no problems.

“It is ideal for people who have incubators in a shed or garage,” he said, “or in a situation where the room in the house containing the equipment is not air conditioned.”

Before getting into the incubator business Kym’s background was in motor mechanics, fiberglass boats, and electronics. Diana, who now works as a bird keeper at Perth Zoo, trained as a designer.

“Together our skills are complementary and when we started designing incubators and brooders we were determined that they would be simple, easy to clean, and with parts which anyone could replace,” Diana said, “which means there would be no need to return the boxes if a component failed.”

She got involved in making incubators and brooders a few years ago because she was frustrated with the shortcomings of then-available com-

mercial incubators.

“We wanted something which did the job, which could be totally dismantled for cleaning and which was easy to fix if things went wrong,” Diana said.

“We also wanted to use components which could be sourced locally and easily replaced.”

The couple’s Kimani (Kym and I) incubators and brooders are individually assembled and tested before being sold.

“Australia gets bottom range incubators from overseas at top prices,” Diana said, “and problems are made worse by freight and handling costs.”

Sold mainly by word of mouth, Kimani incubators and brooders never need to be returned if they malfunction.

“Anyone can take them apart,” Diana said, “and so far the only problem we have encountered was a failed element.”

A replacement element was express mailed to the client and the incubator was working again soon afterwards.

The latest version of the incubator is totally modular, with hand or automatic egg turning options and automatic temperature control.

“Nothing is built into our incubators,” Diana said, “which means there is absolutely nowhere for feather-borne viruses to hide.

“All parts can be removed and sterilized and as far as we are aware, we are the only manufacturers to build incubators this way.”

Egg rotation in Kimani incubators is controlled by two sets of stainless steel rods – one set located below the other at a 90-degree angle, forming a “rectangle” to contain each egg, with no chance of eggs colliding.

The upper set of rods is stationary and the lower set slides at a pre-determined speed, rotating the egg.

The rods can be easily repositioned to make large or small “rectangles,” which means eggs of any size can be incubated.

West Australian birdkeeper Linda Palmer swears by Kimani incubators

and brooders, which she has used since the first model was produced in 1998.

"I still use that original model for macaws," she said, "and it is going as well as the day I got it."

Linda keeps many species of parrots, including Scarlet and Blue and Gold Macaws.

"Macaws are still relatively rare and quite expensive in Australia," she said, "and it's absolutely crucial that hatching and hand-raising equipment is reliable."

She has two Kimani incubators and three of their brooders and usually hand-raises around 30 birds during each breeding season.

"I always raise macaws and Sulphur-crested Cockatoos," she said, "and I have also done Red-tailed and White-tailed Black Cockatoos, mutation 28s, Galahs, Eclectus, and Eastern Kings."

Linda works as a nurse in the local hospital emergency department and is passionate about cleanliness and hygiene.

"I find the Kimani gear great because it's so easy to clean and to keep clean," she said.

"It comes apart easily and there are no cracks or crevices where nasties can hide."

When she started hand-raising, Linda had a poultry incubator which was totally unsatisfactory.

"It was too hit and miss," she said, "and I have found the Kimani gear to be exactly right for what I am doing."

Parrot Society of Australia President Stewart Williamson, who lives in Queensland, one of Australia's northern states, also reckons Kimani gear is great.

"I found the equipment easy to use and clean with disassembly easy for routine cleaning and maintenance, with rounded corners and edges with both external and interior surfaces that clean very easily," he said.

"The 2002 breeding season will be the third or fourth season I've used the equipment, with no major failures or problems to date."

Stewart has incubated and hatched these species in the incubator and brooded them in the Kimani brooders: Eclectus, Sun Conures, Nanday Conures, Blue and Gold Macaws, Hahn's Macaws, Green-winged Macaws, Major Mitchell's Cockatoos and Mustached Parrots.

"I feel that the equipment is moderately priced – in the mid range for this type of equipment – and the benefit of it being Australian manufactured is comforting as you know that you can pick up the phone and ask for advice, service, and spare parts should they be needed," he said.

"I found the Kimani equipment to be reliable and easy to work with."

Stewart said reliability is the most important factor for a busy bird breeder, as one doesn't have the time to be messing around continually making adjustments or worrying if a particular unit might fail when you are at the peak of the season.

"I strongly recommend anyone

that has this sort of incubation equipment to seriously consider emergency power back-up and audible alarms that go off immediately there is a main power failure," he said.

Ian Woolcock, who breeds Yellow-tailed Black Cockatoos at Gundaroo near Canberra, Australia's national capital, used a Kimani incubator last year for the first time.

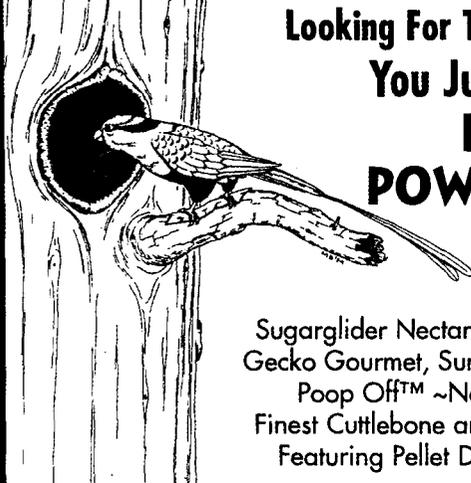
"We incubated six fertile eggs from our Yellow-tailed Black Cockatoos and hatched all on the due dates," he said.

"The incubator worked without fault and allowed maximum flexibility with configuration for eggs and airflow with two independent fans.

"The machine offers a very user-friendly, flexible, and cost-effective incubating solution for us and so far results have been 100 per cent."

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