



## Plague Locust Control Part 2

*High summer and autumn rainfall this year has provided an ideal environment for locusts to breed and lay eggs extensively. Normally, each generation has only one batch of eggs, but this year has seen "two, three, or even four batches,"*

*says Chris Adriaansen, Director of the Australian Plague Locust Commission (APLC)*

Surveillance of buried egg-beds has revealed "egg densities of up to 10,000 per square metre in some areas, However, for every egg-bed you know of, or can find to survey, there will be another dozen which remain unknown until they hatch." The coming plague is "the result of the perfect storm" which could see more than **15,000 nymphs of the Australian plague locust (*Chortoicetes terminifera*) per square metre.**

Hatching will begin in the warmer areas of Queensland and New South Wales from August, while cooler regions will see eggs hatching in September and October. Landowners are urged to work closely with their community and government to monitor and manage the locust threat as spring nears and they begin to hatch.

Swarms of plague locusts can migrate up to 700 kilometres overnight generally after sunset when the surface temperature is above 25 degrees. They can fly at heights of up to 3000 metres and on landing can strip vegetation right down to the ground. Their regular diet is cereal, grasses and grain, but swarming locusts and marching wingless nymphs will destroy vegetable and canola crops and any other food source they can find, says Chris. These sources can include gardens, city parks and national parks.

The report in the paper went on to say: **Little can be done to prevent eggs from hatching, but newly hatched nymphs are easy to kill with insecticide. Once they develop wings and become more mobile they are extremely hard to control.**

Research failed to reveal the range of natural approaches that our sources have provided. Our experts and farmer friends have sent us some marvelous ways to control the impending threat and we have posted them on the members forum at: <http://www.farmingsecrets.com/fs/members-only-forum?func=view&catid=16&id=64#64>

*Farming Secrets says: Keep Taking The Steps To Grow Strong, Healthy Plants*

PS See attached information sheet: The Life Cycle of a Locust

## The Life Cycle of a Locust

Scientists in Australia and overseas have acquired a detailed understanding of the sometimes complex turns in the locust's life cycle.



The insects generally mature within a week or two of becoming adults, depending on the weather and availability of food, says Victoria's Plague Locust Commissioner, Gordon Berg. "With green feed around, most females start laying eggs between four to seven days after maturing."

After drilling a hole in the ground, females lay their pods one at a time at intervals of roughly five to fourteen days - depending on temperature - and at depths of up to eight centimetres. Each pod - generally containing about 40 banana-shaped eggs, about five millimetres long - is neatly sealed with a frothy plug to protect the eggs from desiccation.

Often thousands of females will crowd on to laying sites, giving rise to an egg bed. "Up to 1000 pods per square metre have been observed in dense egg beds," says Professor Simpson. When temperatures are below 25 degrees, eggs are usually laid in bare ground, often along a fence line or roadside. Frequently, hard red-clay pans are selected.

When the temperature soars above 35 degrees, eggs get laid in areas with some form of grass cover. "Sometimes, they are laid in the ground among an emerging cereal crop," says David Hunter, an independent consultant on locust control.

Egg development depends on temperature and moisture conditions, he says. With sufficient moisture and a daily maximum of 35 degrees, eggs develop in a little over two weeks; with a daily maximum of 25 degrees, the process may take longer than a month. Eggs, which do not develop at temperatures of less than about 15 degrees, may remain dormant for at least one year, says Professor Simpson.

The eggs hatch into small "hoppers" that can, as their name suggests, hop short distances but cannot fly.

"Hoppers take something like 30 to 40 days to develop in spring and 20 to 25 days to develop in mid-summer," says Dr Hunter. Plague locusts usually have five instars, or growth stages, but may have six in dry or cold conditions.

The hoppers shed their skins after each instar and before becoming adults. As they develop, hoppers form aggregations called bands, which are usually not well developed until the second or third instar.

The final moult to the winged adult is called the fledging stage. Development from egg laying to this stage typically takes six to eight weeks.

The adult goes through a growth stage, of about one week, during which wing muscles form and the exoskeleton hardens. They then accumulate fat, the fuel for migration.

After migrating, or when they find green vegetation, they develop eggs. Thus the life cycle begins again.