

Where do locusts live? Why do locusts swarm?



Unlike most grasshoppers, locusts can form large groups or **swarms**. Desert locusts normally live in an area in a band across Africa south of the Sahara and into India. When a locust plague occurs, the swarms move into Africa, Asia, Europe and beyond. Swarms can migrate over huge distances.

When locusts are on their own (i.e. not in swarms) they are called **solitarious** and they normally try to avoid each other, flying at night. The solitarious adults are coloured **green**. When there are lots of locusts crowding together, **often to find food**, swarms can develop.

When locusts are about to swarm they not only change their behaviour, but if they are still nymphs, they will even grow up to look different as adults. These adults are **multi-coloured**, e.g. with black, pink and yellow areas. They are called **gregarious** forms. A gregarious mother can also decide whether her offspring will be solitarious or gregarious. Scientists have found that there is something in the protective foam around the eggs that may cause them to hatch into gregarious nymphs.



A green solitarious nymph



A multi-coloured gregarious nymph

What the scientists say.....

Scientists have found that if solitarious locusts are crowded together they change to have gregarious behaviour after only a few hours.

Experiments at the University of Oxford have tried to find out whether it is the sight, smell or contact with others, or a combination of these, that causes the change in behaviour.

Scientists have found that touch is the major stimulus, the locusts don't even have to touch another locust. Touching the locusts with small balls of papier mâché is enough to trigger a change in behaviour. Locusts have touch receptors all over their bodies, but the receptors on their legs are especially important.

Although sight and smell alone are not enough to trigger a change in behaviour, sight and smell together may be important. Smell helps to keep the locusts together, scientists think that it is the smell of the faecal pellets that is important in maintaining swarms.

When the researchers do their experiments they always have to make sure that it is a *fair test*. For example if they are testing sight, they can put the locusts in transparent perspex chambers so that they can't smell or touch the other locusts. They also have to make sure that the temperature and the length of time are the same. The locusts that are used in the experiments are bred and reared under carefully controlled conditions to keep them healthy.

