FACT SHEET 2

WHERE DO EGGS COME FROM?

MEMBERS OF THE FLOCK

Hen

Rooster

The male (rooster, cock) and female (hen) differ not only in their roles but also in their appearances.

Plumage: A hen has a short tail and dull feathers; a rooster has a long plumed tail and shining feathers. The most obvious differences in feathering are seen in neck feathers (called hackles).

Voice: A hen clucks or cackles; a rooster crows and clucks to attract the hens.

Behaviour: A hen is timid and runs away; a rooster is fierce and guards the hens in his flock.

Comb and Wattle Development: A hen has small comb and wattles (the rubber-like projection below the beak); a rooster has much larger comb and wattles.

Physical differences between roosters and hens assist them in their separate tasks in rearing a family:

The male bird:

· Protects the hen and young
· Fights other males for a mate
· May fight other males for territory in which to feed and roost
· Is fierce and muscular and has splendid feathers and a loud cry to intimidate both enemies and rivals as well as to attract hens

The female bird:

· Lays the eggs
· Sits on the eggs
· Tends the young
· Leads the chickens from danger
· Is frequently timid and docile and has duller plumage and quieter voice. Drab plumage may provide a natural camouflage during the broody state (i.e. when the hen is sitting on her eggs)

FACT SHEET 2 (CONT.)

WHERE DO EGGS COME FROM?

BREEDS OF HENS

There are many breeds of chicken available for eating and egg production purposes. In general, the breeds used for table consumption (i.e. chicken meat) are different from the breeds used for egg production.

The modern trend in poultry breeding for egg or meat production involves controlled crossbreeding which is used to produce poultry types with high feed conversion rates i.e. where the number of eggs laid or the weight of the bird is high compared to the amount of feed eaten. Cross-breeding also improves resistance to disease and rate of growth.

In Australia, the predominant breed for meat production is a cross between a Cornish male and White Rock female. The most popular cross breed for egg production is the White Leghorn male with a Black Australorp (developed in Australia) female. This cross produces approximately 8% more eggs than either parent breed.

White Leghorn Rooster

The White Leghorn – Australorp cross produces a white hen which lays tinted eggs although most consumers refer to them as 'white' eggs. Most commercial laying flocks are made up of this cross breed.

A cross between the Australorp female and a New Hampshire male is also used with this cross producing brown hens that lay brown eggs.

Black Australorp Hen

Many people believe brown eggs are somehow superior to 'white' (tinted) eggs. In fact there is no nutritional difference between the two egg colours.

FACT SHEET 2 (CONT.)

WHERE DO EGGS COME FROM?

FORMATION OF THE EGG

The egg is built up gradually over a considerable period of time. Raw materials, in the form of food, must be taken in and processed. Many organs and systems help in converting the food into the various substances that become part of the egg.

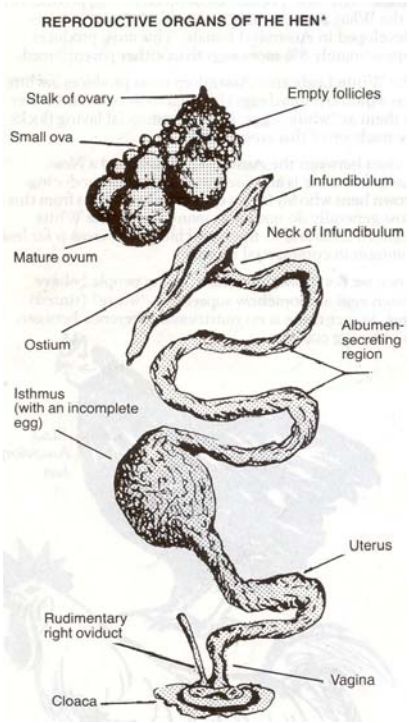
THE OVARY

The hen, unlike most animals, has only one functional ovary – the left one – which is situated in the body cavity near the backbone. At the time of hatching, the female chick has up to 4000 tiny ova (reproductive cells) from some of which full-sized yolks may develop when the hen matures. Each yolk (ovum) s enclosed in thin-walled sac or follicle, which is attached to the ovary. This sac is richly supplied with blood. The mature yolk is released when the sac ruptures. The funnel of the oviduct receives the yolk.

THE OVIDUCT

As with the ovary the hen has only one oviduct – the left. It is a coiled or folded tube about 60cms in length. The oviduct is divided into five distinct sections each with a specific function.

The whole process takes a little over 24 hours. Therefore hens can lay a maximum of one egg per day.



The stages in the formation of an egg are:

1. The yolk with its egg cell (germinal disc) is formed in the ovary of the hen.
2. The white is added by glands after the yolk on which sits the germinal disc, leaves the ovary and is drawn down the oviduct.
3. The shell membranes and shell are added from glands in the oviduct.

FACT SHEET 2 (CONT.)

WHERE DO EGGS COME FROM?

	Part	Approx time Egg Spent in Section	Functions
1.	Funnel (Infundibulum)	15 mins	Receives yolk from ovary. If live sperm present, fertilization occurs here. Table eggs are not fertile.
2.	Magnum	3 hours	Albumen (white) is secreted and layered around the yolk.
3.	Isthmus	1 ¼ hours	Inner and outer shell membranes are added as are some water and mineral salts.
4.	Shell Gland (Uterus)	21 hours	Initially some water is added making the outer white thinner. Then the shell material (mainly calcium carbonate) is added. In coloured eggs, pigments are added also.
5.	Vagina/cloaca	<1 minute	The egg passes through this section prior to laying. It has no known function

WHAT HAPPENS NEXT?

· The next stage after an egg has been laid depends upon the nature of the farming operation. That is:

· On a domestic farm, **fertile** eggs will be hatched by broody (nesting) **hens** who sit on the eggs in nest boxes and transfer their body heat to the eggs. In about 21 days a chicken will hatch from each egg. Eggs are collected after laying by the farmer for consumption by his family and/or local community. Note: in most domestic farm situations all eggs are fertile if a rooster is present.

· On a commercial farming **hatchery, fertile** eggs are **incubated** in large numbers in automatic incubators, which provide the equivalent conditions of warmth and ventilation that the broody hen supplies for her much smaller clutch of eggs. Once again, the incubation period is 21 days and, once these chickens are hatched they are transferred to **brooding** areas (warm, safe environments) so that they can grow. Depending on the breed, they may be raised for the chicken meat or egg production industries.

· Since commercial egg farms only keep hens all eggs are infertile and they are regularly collected from large laying cages and must be refrigerated, quality checked, graded by weight and packed into cartons. These eggs are supplied to retail stores and represent over 90% of all eggs eaten in Australia.