



TOOL
BOX
by LOHMANN

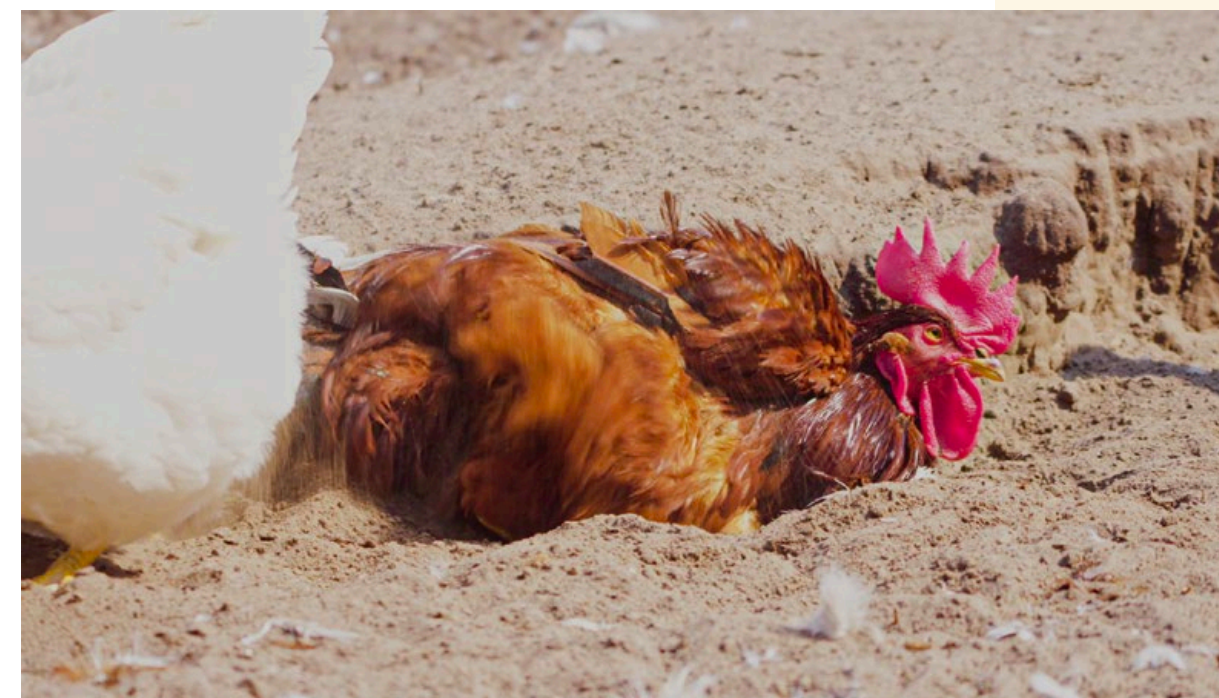
GRIT



ENG

During the last years, advances in genetics, nutrition and management resulted in a great productivity improvement. In addition, 1999 EU Directive and consumer demand, have driven production to cage free systems where main characteristic is that birds can now express their natural behaviour.

The combination of all this requires changes to better understand this behaviour (*Pictures 1 & 2*).



▲ *Picture 1. Birds at rest*



▲ *Picture 2. Birds foraging in nature*



LOHMANN
BREEDERS

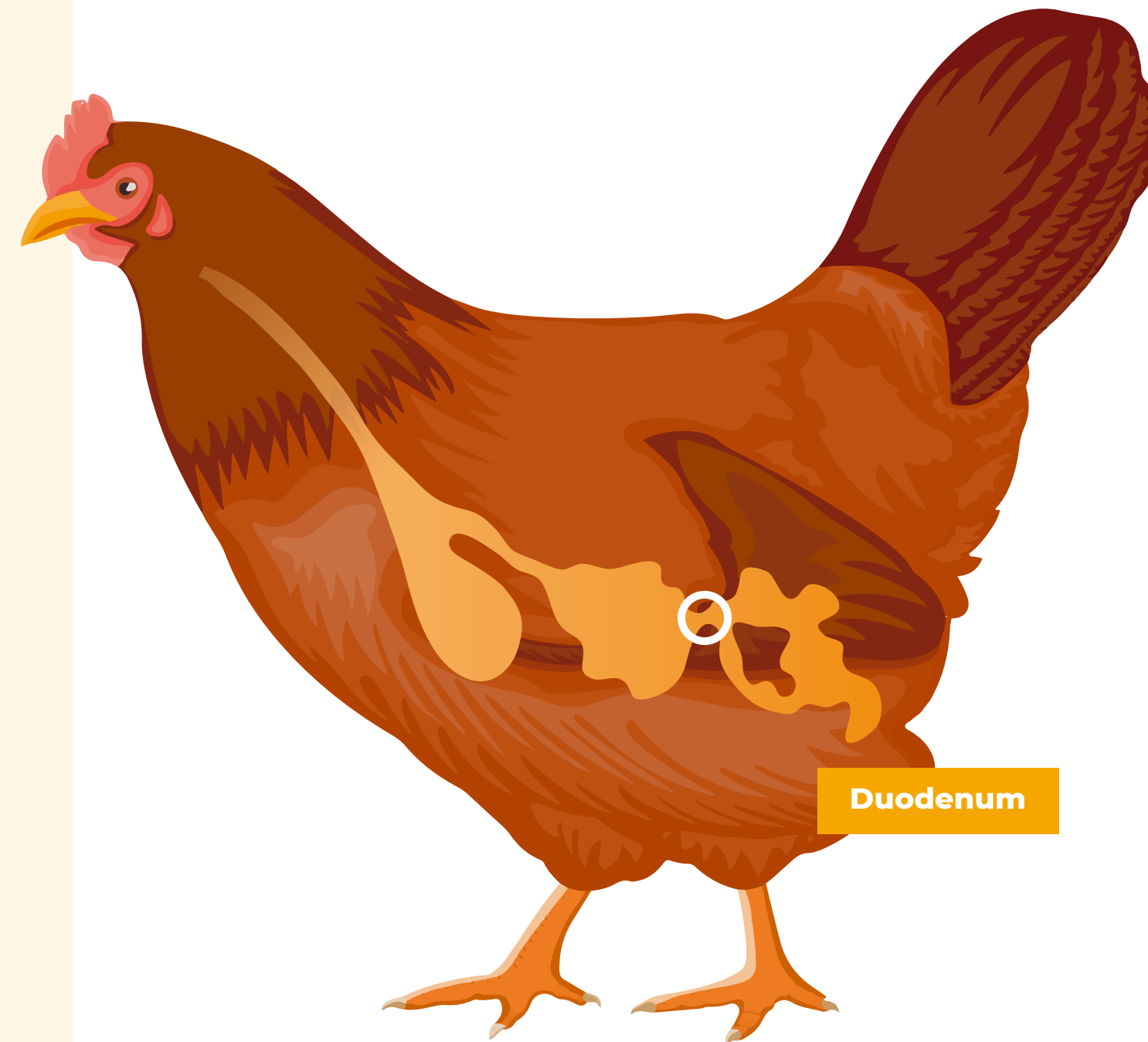


TOOL
BOX
by LOHMANN

NUTRITION

When observing wild birds' behaviour, they spend most of their time on feeding related behaviour, like eating and foraging (*Dawkins, 1989*).

Bird ancestors were omnivorous and ate all sort of stuff like seeds, insects, herbs, insoluble fibres, etc. (*Klasing, 2005*).



Grinding

In terms of digestion physiology, gizzard is the key. Main functions include particle size reduction, chemical degradation of nutrients and regulation of digesta passage.

Bearing in mind that most particles passing to the duodenum would be around 60-40 μ m in diameter, they would hence require some grinding. For this reason, birds in nature consume grit (insoluble stones) to improve the mechanical grinding of food in the gizzard (*Gionfriddo, 1994*).

In order to maximise the hens' performance, their diets should mimic that of in nature. For this reason, it's advisable to provide them a homogenous mash feed, as not only does this allow the birds to express a more natural feeding behaviour but also promotes gut health.





TOOL
BOX
by LOHMANN

NUTRITION

The presence of coarse particles in the feed will encourage grinding activity, hence the addition of stones, grits and sands would be advisable to support feed material breakdown (Svihus, 2011).

Also, when grit is provided, hens' ability to digest diets with higher level of fibre is also improved.

So, as part of our feeding strategy, using grit contributes to the hens' overall health, as not only is it helping with particle size reduction but also, when spread in litter, promoting natural feeding behaviour.



Grit definition

When defining grit in general, it's related to small particles of stone or sand. But for our "grinding" purposes, not all grits are similar. Grits can either be soluble or insoluble. Soluble grits, such as calcium and mineral sources (**Picture 3 & 4. Limestone and oyster shell respectively**) are normally dissolved in the gizzard.



▲ **Picture 3.** Limestone



▲ **Picture 4.** Oyster shell





TOOL
BOX
by LOHMANN

NUTRITION

Insoluble particles of grit (granite) are the ones retained in the gizzard and boost grinding activity. Some examples are shown below.



Recommended grit levels

Adding grit in the diets of cage-free birds from rearing, may encourage animal welfare since it will give them the opportunity to have what is normally present in nature. Recommended levels are shown below.

Week	Allowance	Particle size
1-3	1g/bird/ week	1-2mm
4-9	2g/bird/ week	3-4mm
9-13	3g/bird/ week	3-4mm
≥ 14	4g/bird/ week	3-4mm
Lay	4g/bird/ months	3-4mm



Disclaimer

This TOOLBOX article remains the property of LOHMANN BREEDERS. You may not copy or distribute any portions of the article without the prior written consent of LOHMANN BREEDERS.

For more information and further toolbox articles, please visit our website www.lohmann-breeders.com or contact us directly:

LOHMANN BREEDERS GMBH

Am Seedeich 9 – 11

27472 Cuxhaven / Germany

E-mail: info@lohmann-breeders.com

