

The feed table has a temperature in it: 20 °C.

Two Lohmann guides — LSL-Lite and Brown-Classic — read straight from the tables.

Every gram on the feed table assumes 20 °C

Lohmann's Phase 1-3 nutrient tables are printed for one climate:

11.4 MJ/kg (2725 kcal) energy, a house temperature of 20 °C, good plumage.

LSL-Lite eats

105-115 g/day

Brown-Classic eats

110-120 g/day

Those intakes hold at 20 °C. Let the house run hot and she eats less of the same feed — so the same bag delivers fewer grams of protein and calcium per bird per day. Climate is not a comfort setting. It is the number under every number on the label.

Brood hot, lay cool — the temperature ladder

DESIRED TEMPERATURE AT BIRD LEVEL, °C (Table 1)

35-36

Day 1-2

31-32

Day 5-7

26-27

Week 3

22-24

Week 4

18-20

From Week 5

The laying house target is 18-20 °C from Week 5 on — the same 20 °C the feed tables assume. Chicks start at 35-36 °C; reduce it gradually, and let the birds' own behaviour confirm it.

The guide prints no m³/hour — it prints what the air must hold

MINIMUM AIR QUALITY (Table 2)

- O₂ over 20 %
- CO₂ under 0.3 %
- CO under 40 ppm
- NH₃ under 20 ppm
- H₂S under 5 ppm

RELATIVE HUMIDITY

60-70 %

inside the house through lay.
At least 60 % during brooding.

Lohmann never states a ventilation rate in m³/hour per hen. It states the targets ventilation must satisfy: 18-20 °C, 60-70 % RH, and the Table 2 gas ceilings. The rate is whatever holds those. Chase a fan setpoint and you can still be wrong; hold the targets and you are right.

Heat stress: the egg pays first

Above 30 °C

Water : feed ~2 : 1 → 5 : 1

Birds eat less, drink more, pant to shed heat. Less feed = fewer grams of protein and calcium per bird.

What the guide adds in heat

Vitamin C 100-200 mg/kg feed

during hot spells. Keep water at ~20 °C. Shell quality is the first thing to slip when the house runs hot.

The rule this deck is arguing for

Hold 18-20 °C, 60-70 % RH, and the Table 2 gas ceilings — because the whole feed programme is priced at 20 °C, and above it every gram on the label buys less egg. Ventilation is not a fan number to hit; it is whatever keeps the air and the temperature inside those limits.

Based on Lohmann LSL-Lite and Brown-Classic Cage Management Guides — Environment section (Table 1 temperatures, Table 2 air quality) and the Nutrition-section 20 °C energy basis.

The feed tables are printed for one temperature.

Lohmann — the Phase 1-3 requirement tables assume a house temperature of 20 °C

Why 20 °C is written into the requirement

Lohmann states it plainly: the recommended nutrient levels in Tables 10-12 assume 11.4 MJ/kg (2725 kcal) energy, a house temperature of 20 °C, and good plumage. Change the temperature and you change how much she eats — and every percentage in the bag is that fixed daily gram requirement divided by what she actually eats.

EXPECTED DAILY FEED INTAKE AT 20 °C

LSL-Lite (white egg)	105-115 g/day
Brown-Classic (brown egg)	110-120 g/day

A hot house quietly under-feeds the flock

In heat, intake drops. A hen eating 95 g instead of 115 g of the same feed is short on protein, amino acids and calcium, and lays a smaller egg on a weaker shell — even though the bag never changed. The fix is not a higher percentage for everyone. It is holding the temperature the table was written for, and knowing what each house ate.

Cold cuts the other way

Lohmann lists low house temperature as a driver of higher feed consumption: a cold bird spends feed energy on maintenance heat instead of eggs. Too hot starves the egg of nutrients; too cold burns them for warmth. The 18-20 °C band is where feed goes to production.

What page 1 compressed into one line

"20 °C" is not a comfort note on the side of the feed table. It is the assumption the whole table stands on. Everything else on this deck follows from holding it.

Brood at 35 °C. Lay at 18-20 °C.

Lohmann, Table 1 — desired temperature at bird level, by age

AGE	TEMPERATURE AT BIRD LEVEL, °C
Day 1-2	35-36
Day 3-4	33-34
Day 5-7	31-32
Week 2	28-29
Week 3	26-27
Week 4	22-24
From Week 5	18-20

The bird is the thermometer that matters

The optimum body temperature of a day-old chick is 40-41 °C; measure it and adjust the house by ~0.5 °C at a time. Chicks evenly spread and active = right. Huddled = too cold or a draught. Panting and spread out = too hot. Always reduce temperature gradually and avoid sudden changes — the behaviour reads truer than the setpoint on the controller.

Where the ladder lands for a laying flock

From Week 5 the target is 18-20 °C, and it stays there through lay. That is the same 20 °C the nutrient tables are priced at — so the climate target and the feed programme are not two jobs. They are one. Hold the temperature and the feed table means what it says.

If the ventilation system sets the temperature

Lohmann's caution: when ventilation is used to regulate temperature, make sure the necessary fresh air is still supplied. Pulling less air to hold heat can breach the gas limits on the next page. Temperature and air quality are traded against each other by the same fans — see page 4.

Ventilation has no rate here. It has limits.

Lohmann, Table 2 — minimum air quality; plus the 60-70 % humidity band

Why there is no m³/hour figure to copy

The guide never prints a ventilation rate per hen. Rate depends on house, climate, stocking and season — so instead it prints the result the air must reach. Ventilation is correct when the house sits inside these numbers, whatever airflow that takes on the day.

MINIMUM AIR QUALITY REQUIREMENTS

	LIMIT	WHY IT MATTERS
Oxygen O ₂	over 20 %	the baseline the birds breathe
Carbon dioxide CO ₂	under 0.3 %	0.3 % = 3,000 ppm; rises when air is held back
Carbon monoxide CO	under 40 ppm	faulty heaters — odourless, lethal
Ammonia NH ₃	under 20 ppm	burns eyes and airways, from wet manure
Hydrogen sulphide H ₂ S	under 5 ppm	from slurry; toxic at low levels

Humidity: 60-70 % in lay, at least 60 % brooding

The house relative humidity should sit at about 60-70 %. Too dry and dust and airway irritation climb; too damp and litter caps, ammonia rises and the birds cannot lose heat by panting. In brooding, keep it at least 60 % so the chicks do not dehydrate.

The trade the fans are making

In cold weather you pull less air to hold 18-20 °C — and CO₂, ammonia and humidity climb. In heat you pull more to shed it — and the house dries out. Every ventilation decision is this trade. The limits above are how you know which way you have gone too far.

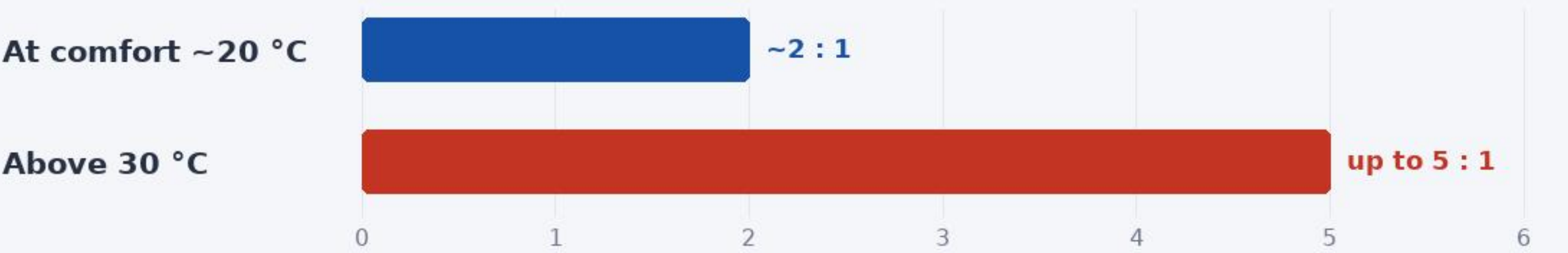
Heat stress shows up in the egg before the bird

Lohmann — feed and water behaviour above 30 °C, and what to add

What a hot bird does

Above about 30 °C a hen eats less and drinks far more, trying to shed heat by evaporation. The water-to-feed ratio, around 1.8-2 : 1 at comfort temperature, climbs to as much as 5 : 1. She pants. And with intake down, the grams of protein and calcium down the same feed delivers fall with it — so shell and egg size are hit before you see a sick bird.

WATER : FEED RATIO



More water, less feed. The rising ratio is the earliest number that a house is too hot.

What Lohmann adds in the heat

Vitamin C is normally made by the bird and is not an essential nutrient — but under heat stress or in hot climates the guide notes 100-200 mg/kg of complete feed can help. Keep drinking water near 20 °C; feed and water intake are closely linked, and a bird that stops drinking stops eating. Cool water and clean air do more than any single additive.

And the cold side of the same dial

Low house temperature raises the maintenance energy a hen spends on staying warm, so she eats more feed for the same eggs. Too hot starves the egg; too cold burns feed for heat. The 18-20 °C target is simply where the least feed is wasted on temperature.

The air limits are shared. The thermostat is not.

Lohmann layers vs the pig ventilation figures published in Week 2

The gas ceilings barely move between species

The two air-quality limits that matter most read almost the same for a layer house and a pig barn. Lohmann sets NH₃ under 20 ppm and CO₂ under 0.3 % (3,000 ppm); the pig manuals in Week 2's deck (Topigs Norsvin, PIC) publish NH₃ 20 ppm and CO₂ 3,000 ppm at rest. Ammonia burns the same airways and CO₂ tracks the same held-back air, whatever the animal.

SAME LIMIT, TWO SPECIES	LAYER	PIG (Wk 2)	
Ammonia NH ₃	< 20 ppm	< 20 ppm	identical
Carbon dioxide CO ₂	< 3,000 ppm	< 3,000 ppm	identical
Comfort / thermal-neutral	18-20 °C	16-22 °C	species-specific

But the temperature setpoint is the bird's own

A finishing pig sits comfortable at a thermal-neutral 16-22 °C; a laying hen is kept at 18-20 °C. Close, but the reasons differ — a feathered bird sheds heat by panting, a pig by wallowing and floor contact. Copy the air limits across a mixed site; never copy the thermostat. The gas is chemistry; the temperature is physiology.

Why the echo is on this deck at all

Because the ventilation question is the same shape in every house we watch: hold the air the animal breathes inside published limits, and hold the temperature its feed table assumes. The numbers change by species; the discipline does not. See Weeks 1 (broiler) and 2 (pig).

Read the air and the bird, not the fan

Lohmann gives targets to hold — not a rate to set

What the guide actually hands you

Not a ventilation rate. A set of targets: 18-20 °C at bird level, 60-70 % humidity, and the Table 2 gas ceilings. Ventilation is whatever holds them — which means the only way to know the fans are right is to measure the result, continuously, where the birds actually are.

Temperature at bird level

Priced into every feed number. 18-20 °C, held, not a controller reading.

Air the birds breathe

CO₂, ammonia and humidity — the limits ventilation exists to hold.

The bird's own behaviour

Panting, huddling, water:feed climbing — the tell before the numbers move.

The measurement gap

A house has one temperature probe and one clock on the fans, standing in for thousands of birds and every corner of the shed. The hot spot over a blocked inlet, the ammonia pooling at floor level, the section that went off feed at the same hour each day — none of it shows on a single sensor. The targets are good. The reading of them is thin.

What it would take to close it

Not a better limit — the limits are right. It would take knowing what each part of the house actually runs at, continuously, so the fans could be judged on the air the birds breathe instead of the number on one probe. That is the part nobody is standing in the house to see.

Save this and check one thing tomorrow

Walk the house at the hottest hour and read the birds, not the controller: panting, where they crowd, whether the far end matches the sensor. If it does not, the fans are lying to you.

Based on Lohmann LSL-Lite and Brown-Classic Cage Management Guides — Environment and Nutrition sections. Cross-species figures: Week 2 pig ventilation deck. Full provenance: 01-monday/SOURCES.md