

SKILLED TRAINING PROGRAMME

Vocational Poultry Training Module

DR. MANDEEP SINGH AZAD

KRISHI VIGYAN KENDRA, REASI



From Bird Selection to Farm Profitability

01. Poultry Farming Opportunity

Why ducks and quails matter for Indian farmers

02. Duck Farming

Advantages, breeds, incubation, brooding, rearing, housing, water, and feeding

03. Quail Farming

Characteristics, breeds, housing, nutrition, life cycle, lighting, and egg production

04. Health and Hygiene

Preventive management and disease response

05. Training Takeaways

Practical routines that convert good husbandry into productive farming

Ducks and Quails Expand Poultry Income Beyond Chicken Farming

1

Beyond Chicken Farming

India's poultry opportunity includes multiple bird types, with duck farming already occupying an important position alongside chicken farming.

2

Scale of Duck Production

Ducks represent about 10% of the total poultry population and contribute approximately 6–7% of total eggs produced, with concentration mainly in the Eastern and Southern coastal states.

3

Quail as a Compact Option

Quail farming adds a compact, low-capital option because quails are among the smallest poultry birds, require little space and labor, and can be raised alongside other poultry.

4

Training Objective

Develop the practical capability to select suitable breeds, manage housing and feed, control temperature and light, maintain hygiene, and operate a commercially productive flock.



Successful Poultry Training Follows a Bird-to-Business Production Cycle

Stage 1 — Select the production goal and breed

Decide whether the enterprise is focused on eggs, meat, or both, then choose a breed suited to that purpose

Stage 2 — Prepare the production environment

Provide clean, ventilated, predator-proof housing, appropriate floor space, drinkers, feeders, and equipment before birds arrive

Stage 3 — Establish young birds

Control incubation, hatching, brooding temperature, floor space, water depth, and early feeding

Stage 4 — Grow and manage the flock

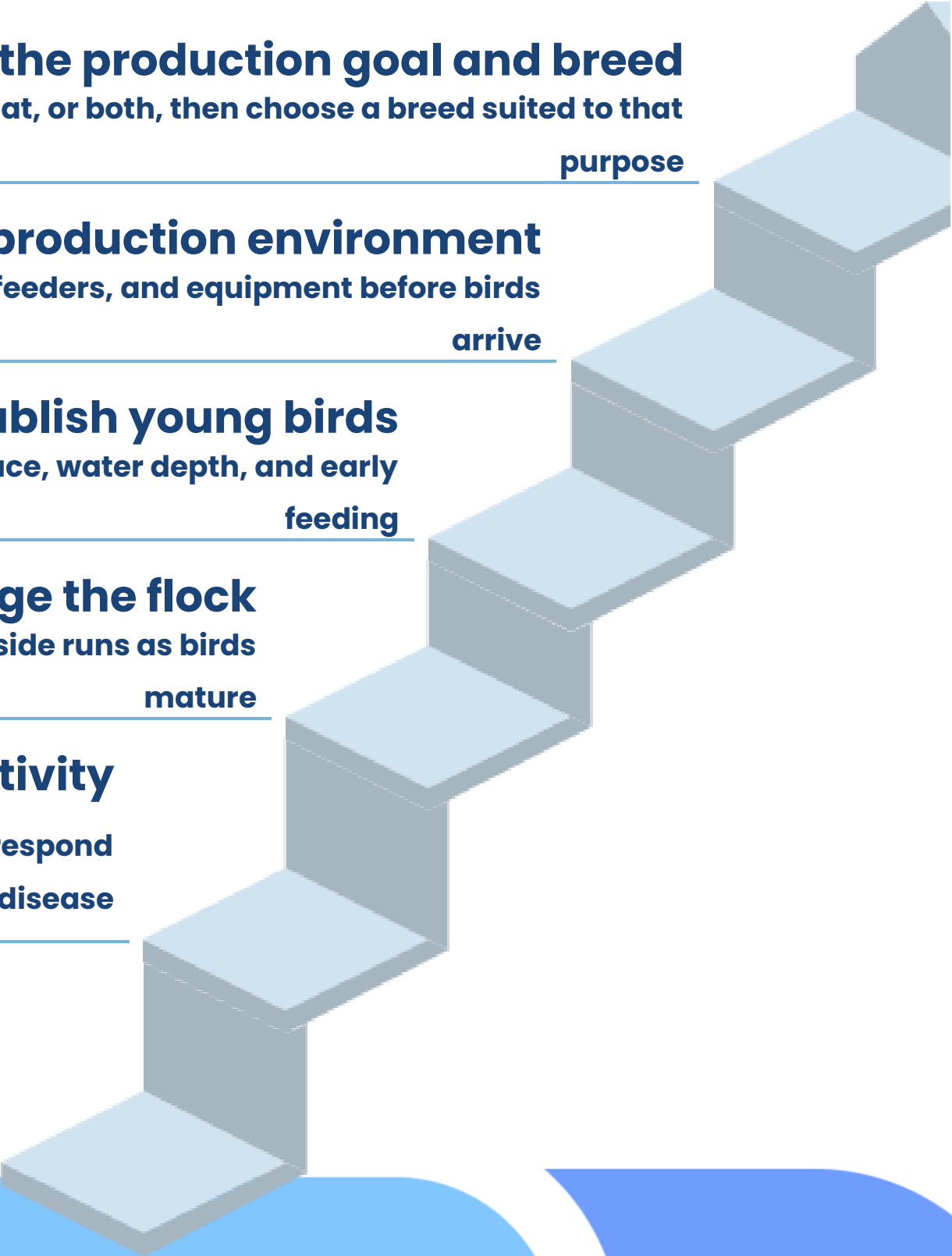
Adjust space, feed, lighting, mating ratios, and access to outside runs as birds mature

Stage 5 — Protect productivity

Keep houses dry and clean, separate age groups and sick birds, maintain fresh water, and respond quickly to disease

Stage 6 — Market the output

Use the flock's egg production, meat yield, long productive life, and low resource requirements to support farm income



Duck Farming Converts Underused Wetland Resources into Multiple Farm Outputs



Ideal for Wetlands and Barren Land

Duck farming is especially suitable for marshy river sides, wetlands, and barren moors where chickens or other livestock may not flourish.

Integrated Fish Farming

Ducks can be integrated with fish farming: droppings serve as feed for fish, eliminating the need for separate fish feed or pond manuring, with 200–300 ducks per hectare of waste area indicated for the system.

Benefits in Rice Cultivation

In rice cultivation, ducks provide intertillage, loosen soil around rice plants, weed control, insect control, and manuring while searching for food.

Pest Control Capacity

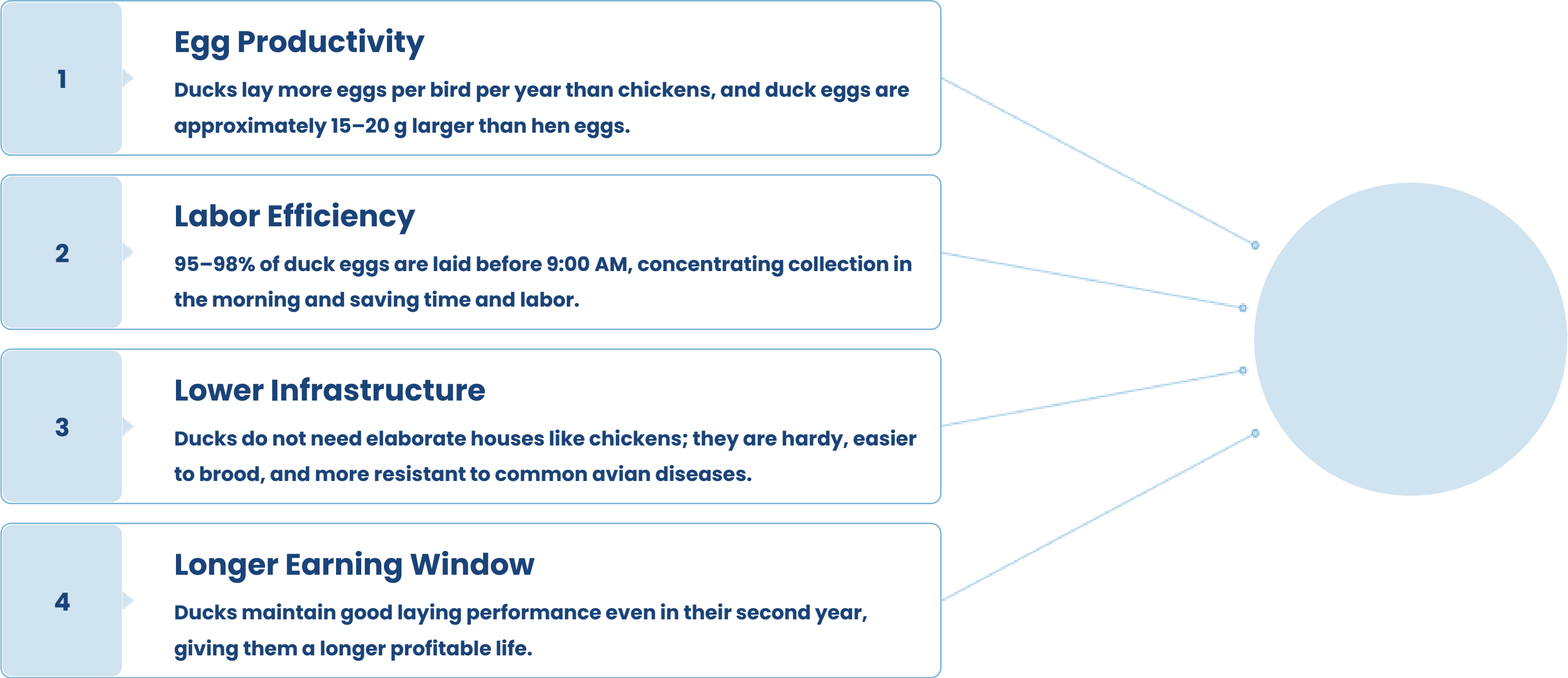
Ducks can also control potato beetles, grasshoppers, snails, slugs, mosquito pupae, and larvae, with the source indicating 2–6 ducks per 0.405 hectare of land for liver-fluke areas and 6–10 ducks per 0.405 hectare of water surface for mosquito control.



Foraging Reduces Feed Costs

Ducks forage on fallen grains in paddy fields, insects, snails, earthworms, small fish, and other aquatic materials, allowing the farmer to supplement purchased feed with available resources.

Ducks Offer Stronger Production Economics with Less Infrastructure



Feeding advantage: foraging in fields, ponds, wetlands, and range areas can reduce purchased-feed cost. **Management advantage:** ducks are intelligent, easily tamed, and can be trained to go to ponds and return in the evening independently.

Breed Choice Should Match the Farmer's Primary Market: Eggs or Meat



Khaki Campbell — Egg-Purpose

Breed
Recognized as the best egg-laying duck breed; well-managed birds can produce almost one egg per day for well over twelve months, with flock averages above 300 eggs per duck per year. Body weight: 2–2.2 kg (ducks), 2.2–2.4 kg (drakes); egg size: 65–75 g.

Selection Rule

Choose Khaki Campbell when egg production is the priority; choose White Pekin when rapid meat production is the priority.

**White Pekin —
Table-Purpose**
Breed
The most popular duck in the world for meat — fast growing, low in feed consumption, and capable of producing fine-quality meat. Body weight reaches 2.2–2.5 kg at 42 days, with feed conversion of 1:2.3 to 2.7 kg.

Duck Incubation Requires Precise Control for 28-Day Hatching



Day 1–25: Temperature & Wet-Bulb

Incubate Khaki Campbell eggs for 28 days in a forced-draft incubator; maintain temperature at 37.5–37.2°C (99.5–99°F); wet-bulb at 30–31°C (86–88°F) for the first 25 days, then raise to 32.7–33.8°C (90–92°F) for the final three hatching days



Daily Egg Care

Sprinkle eggs once a day from day 2 through day 25 with lukewarm water containing sanitizer, then cool them for a maximum of half an hour



Turning & Inspection

Turn eggs hourly and candle them on day 7 to monitor embryo development and remove infertile eggs



Transfer on Day 25

Move eggs to the hatcher on day 25 so the final three days can be managed under dedicated hatching conditions



Hatching Days 26–28

Maintain elevated wet-bulb temperature at 32.7–33.8°C (90–92°F) and avoid opening the hatcher to preserve humidity for a successful hatch



Training Checkpoint

Record temperature, wet-bulb reading, turning, sprinkling, cooling, candling, and transfer rather than relying on memory

Brooding Success Depends on Breed-Specific Time, Heat, Space, and Water



1 Brooding duration

Khaki Campbell ducklings require approximately 3–4 weeks of brooding, while meat-type Pekin ducklings generally require 2–3 weeks.

2 Brooder space

Provide 90–100 sq cm per duckling under the brooder.

3 Temperature schedule

Maintain 29–32°C (85–90°F) during the first week, then reduce temperature by approximately 3°C per week until it reaches 24°C (75°F) during week four.

4 Floor options

Ducklings may be brooded on wire floor, litter, or batteries; up to three weeks, provide 0.046 m² (1/2 sq ft) of wire-floor space per bird or 0.093 m² (1 sq ft) of solid-floor space per bird.

5 Water safety

Drinker water should be 5–7.5 cm (2–3 inches) deep—enough for drinking but not for ducklings to immerse themselves.

Duck Rearing Must Gradually Increase Space and Outdoor Access

Stage and system	Indoor or night-shelter space	Outside run or range space	Management note
15–16 weeks, intensive	0.279 m ² , or 3 sq ft, per bird	No outside-run requirement stated	Allow movement to runs at the end of 3–4 weeks depending on weather
15–16 weeks, semi-intensive	0.186–0.279 m ² , or 2.5–3 sq ft, in the night shelter	0.929–1.394 m ² , or 10–15 sq ft, per bird	Provide shelter plus outdoor access
15–16 weeks, range system	A flock of 1,000 ducks per 0.405 hectare, or one acre	Range space is the production base	Use available range appropriately
Adult, intensive	0.371–0.465 m ² , or 4–5 sq ft, per duck	No outside-run requirement stated	Essential indoor floor space
Adult, semi-intensive	0.279 m ² , or 3 sq ft, in night shelter	0.929–1.394 m ² , or 10–15 sq ft, per bird	Suitable for day-outdoor management
Adult, free range	Up to 1,000 ducks per 0.405 hectare, or one acre, depending on available greens	Range-based system	Match flock size to forage availability



Adult Duck Management Links Space, Nesting, Mating, Feed Access, and Light

1

Feeding space

For wet mash in a V-shaped feeder, allow 10–12.5 cm (4–5 in) per duck; for dry mash or pellets served ad libitum in hoppers, 5–7.5 cm (2–3 in) per duck is sufficient.

2

Production age

High egg-laying strains begin production at 16–18 weeks of age.

3

Egg collection

Approximately 95–98% of eggs are laid by 9:00 AM, so gather eggs early in the morning.

4

Nesting

Provide one nest box measuring 30 × 30 × 45 cm (12 × 12 × 18 in) for every three ducks.

5

Breeding ratios

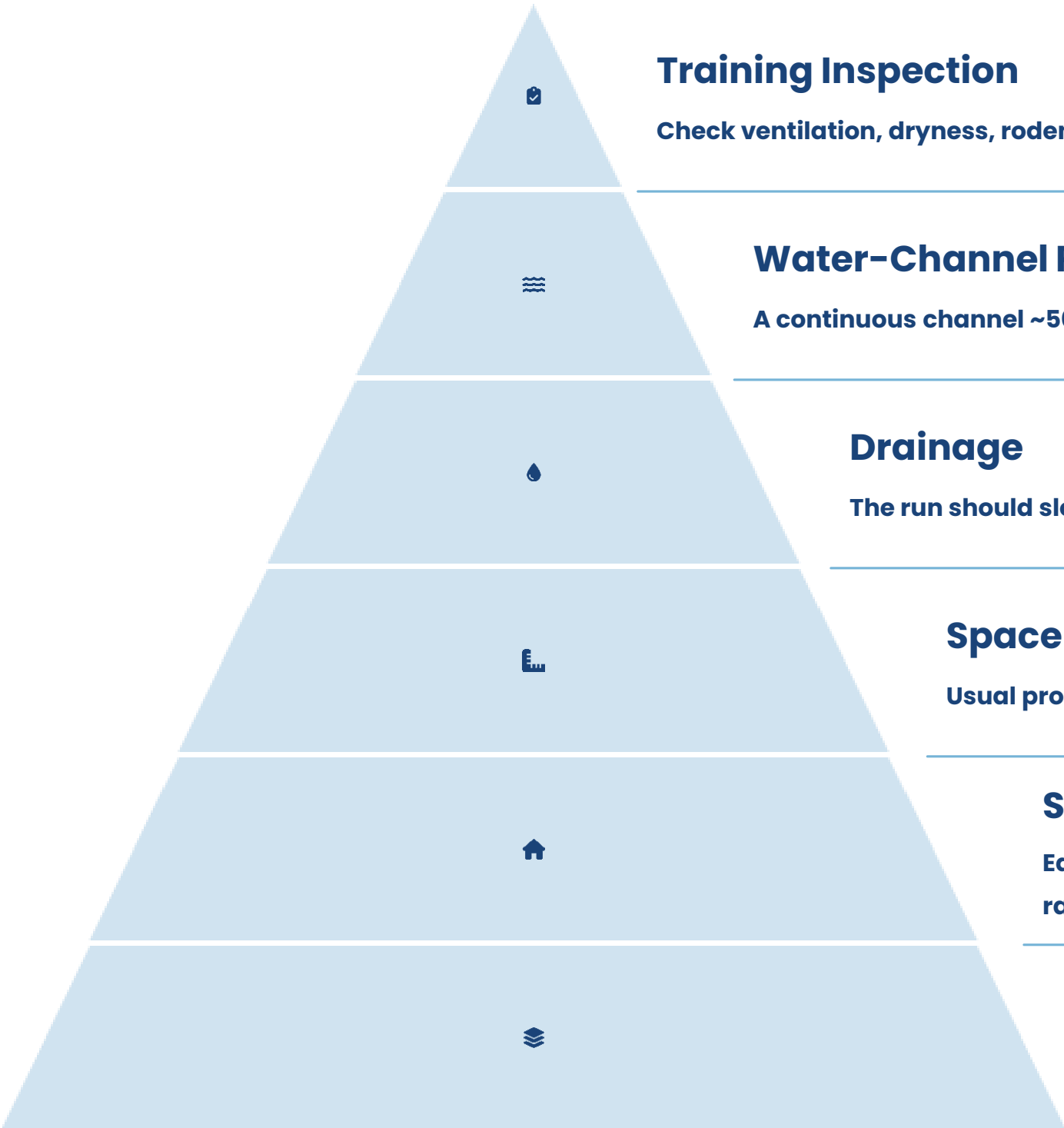
Use one drake for 6–7 ducks in laying breeds and one drake for 4–5 ducks in table breeds.

6

Photoperiod

Provide 14–16 hours of light per day for optimum production.

Duck Housing Should Be Simple, Dry, Ventilated, and Easy to Drain



Training Inspection

Check ventilation, dryness, rodent control, outside access, slope, and drainage before stocking

Water-Channel Provision

A continuous channel ~50 cm wide and 15–20 cm deep at the far end on both sides, parallel to the house

Drainage

The run should slope gently away from the house

Space Relationship

Usual proportion of night shelter to outside run is 1/4 : 3/4

Semi-Intensive Layout

Easy access from the night shelter to an outside run, since ducks prefer outdoors even in winter or rain

Structure Options

Shed, gable, or half-round roof with solid or wire floors

Foundation: the house must be well ventilated, dry, and rat-proof; elaborate construction is not required.

Ducks Need Drinking Water for Health but Do Not Need Swimming Water

Essential Drinking Water

- Drinkers must be deep enough for ducks to immerse their heads but not their bodies
- Head immersion allows them to clean their bills
- Prevents eye problems from inadequate head immersion, including scaly or crusty eyes and, in extreme cases, blindness

Swimming Water Is Optional

- Swimming is not essential at any stage of duck rearing
- Farmers can operate without constructing a swimming pond

Meat Strains

- Swimming has been associated with only a slight body-weight advantage at seven weeks
- Approximately 0.3% compared with non-swimming ducks

Egg Strains

- Swimming is a disadvantage for egg-laying ducks

Practical Rule

- Prioritize clean, accessible drinking water
- Control water depth rather than invest in costly swimming facilities

System Implication

- Water provision should support drinking, bill cleaning, hygiene, and drainage
- Avoid creating unnecessary wetness in the house

Duck Feeding Should Combine Balanced Rations with Safe Foraging



3

Feeding Forms

Ducks may be raised on dry mash, a combination of dry and wet mash, or pellets; wet mash is preferred because dry mash is harder to swallow.

8 wk

Early Feeding Schedule

During the first eight weeks, provide feed continuously.

Pellets

Pellet Trade-off

Pellets may cost slightly more but reduce feed quantity and wastage, save labor, improve convenience, and improve sanitary conditions.

2×/day

Later Feeding Schedule

After eight weeks, feed twice daily — first in the morning and again in the late afternoon.

Forage

Foraging Benefit

Range, ponds, and supplementary green feed can lower the cost of purchased feed.

12.5 kg

Khaki Campbell — Up to 20 Weeks

Approximately 12.5 kg of feed consumed per bird up to 20 weeks of age.

Water

Water Rule

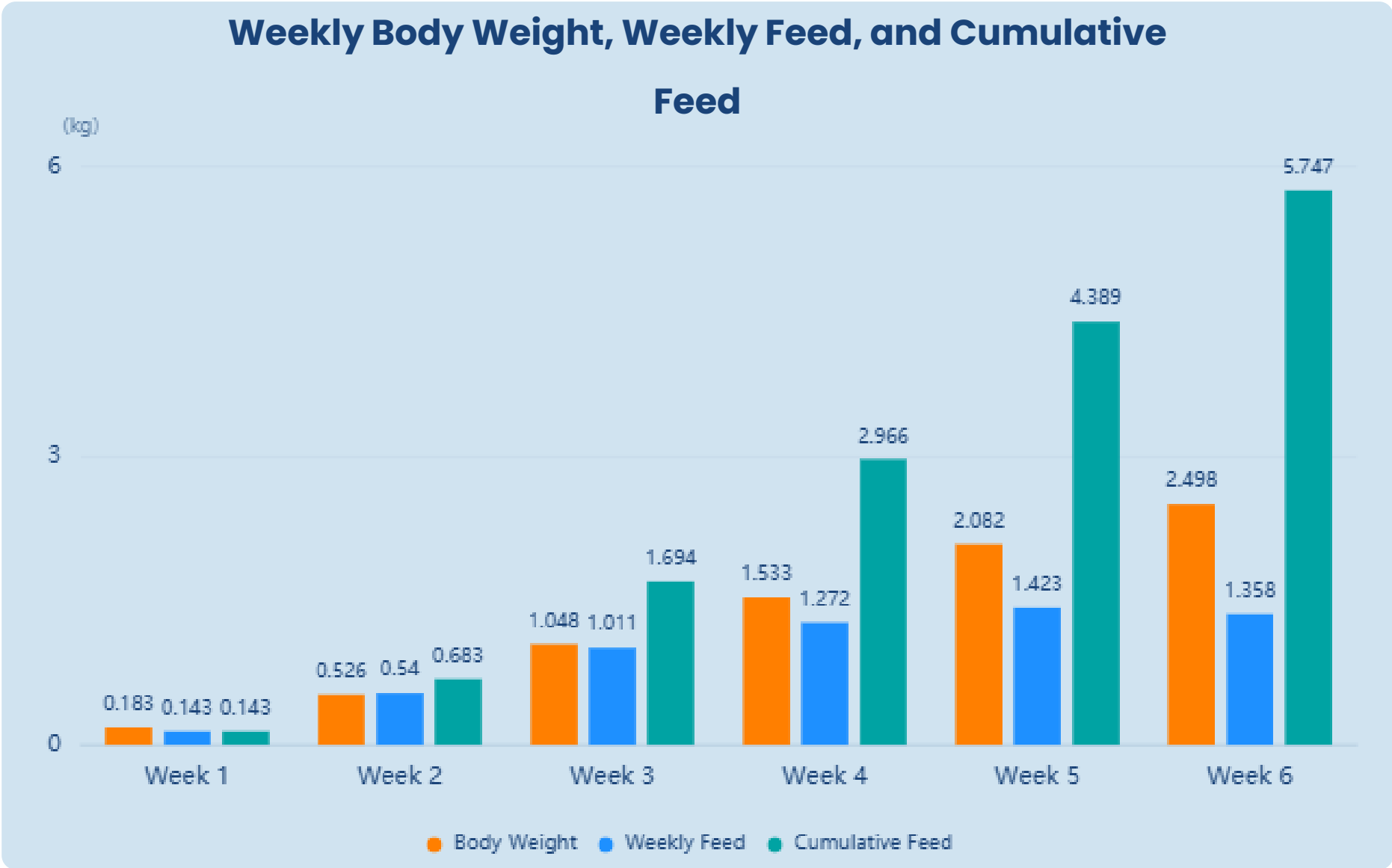
Ducks should never have access to feed without water.

120 g+

Daily Feed After 20 Weeks

120 g or more per bird per day, depending on production rate and availability of greens.

Duck Growth and Feed Records Make Production Efficiency Visible



Training Use

- Weigh representative birds and record weekly feed issued so farmers can compare actual growth and feed use with the reference values.

Interpretation

Body weight rises from 0.183 in week 1 to 2.498 in week 6, while cumulative feed rises from 0.143 to 5.747.

Week	Body Weight	Weekly Feed	Cumulative Feed
Week 1	0.183	0.143	0.143
Week 2	0.526	0.540	0.683
Week 3	1.048	1.011	1.694
Week 4	1.533	1.272	2.966
Week 5	2.082	1.423	4.389
Week 6	2.498	1.358	5.747

Quails Offer a Compact, Fast-Maturing Route to Eggs and Meat



Commercial Quail Farming

Quail farming means raising quails commercially for profitable egg and meat production. Japanese scientists first tamed wild quails and developed methods for raising them as domestic birds, after which commercial quail farming spread in Japan and later to countries including India.

Nutritional Advantages

Quail meat and eggs are described as tasty and nutritious, with quail eggs containing comparatively more protein, phosphorus, iron, vitamin A, B1, and B2 than other poultry eggs. According to the source, quail eggs contain 2.47% less fat than chicken eggs.

Compact Size, Quick Returns

Adult quails weigh approximately 150–200 g, while quail eggs weigh about 7–15 g. Female quails begin laying at 6–7 weeks and can produce about 300 eggs in the first year, followed by approximately 150–175 eggs in the second year as production declines.

Quail Farming Reduces Space, Capital, Feed, and Labor Barriers

Quail farming offers seven converging advantages that make it an accessible and resilient enterprise for small-scale and aspiring producers.



Space Efficiency

Six to seven quails can be raised in the space required for one chicken, and approximately 6–8 quails can be raised within 0.91 square meter.

Livelihood Value

Commercial quail farming can provide income and employment for unemployed educated people and can also be operated alongside an existing occupation.

Market Access

Smaller eggs cost less than eggs from larger birds, making them accessible to more consumers and supporting easier sales.

Quail Farming

Low Investment

Small birds, small housing requirements, low feed use, and low labor costs allow the enterprise to begin with little capital.

Growth and Maturity

Quails grow rapidly, mature faster than many poultry birds, begin laying at 6–7 weeks, and hatch eggs in approximately 16–18 days.

Health and Resilience

Quails are hardy, generally have fewer diseases than other poultry birds, and therefore present lower management risk when properly cared for.

Feed Efficiency

The source reports that quails can produce one kilogram of meat or eggs by consuming three kilograms of food.

Quail Breed Selection Separates Layer Performance from Broiler Growth

Category or Breed	Production Orientation	Reference Performance or Use
Layer breeds (Tuxedo, Pharaoh, British Range, English White, Manchurian Golden)	Egg production	Select according to local availability and market demand
Broiler breeds (Bobwhite American, White Breasted Indian)	Meat production	Select for meat-oriented systems
Cari Uttam	Meat production	Hatchability 60–76% of total eggs set; weight 150 g at 4 weeks and 170–190 g at 5 weeks; feed efficiency 2.51 at 4 weeks and 2.80 at 5 weeks; daily feed 25–28 g
Cari Ujjawal	Meat production	Hatchability 65%; weight 140 g at 4 weeks and 170–175 g at 5 weeks; feed efficiency 2.93 at 5 weeks; daily feed 25–28 g
Cari Sweta	Meat production	Hatchability 50–60%; weight 135 g at 4 weeks and 155–165 g at 5 weeks; feed efficiency 2.85 at 4 weeks and 2.90 at 5 weeks; daily feed 25 g
Cari Pearl	Egg production	Hatchability 65–70%; weight 120 g at 4 weeks; daily feed 25 g; age at 50% egg production 8–10 weeks; hen-day production 285–295 eggs
Selection rule	Align with farm output	Match breed and production line with the farm's intended output

Quail Housing Works Best When Cage Management Protects Air, Light, and Biosecurity



1

Housing systems

Quails can be raised on litter or in cages, but the cage system is more suitable because management is easier and disease or other problems are reduced.

2

Cage specification

House 50 quails in a cage measuring 120 cm long × 60 cm wide × 25 cm high.

3

Construction

Use wire netting, with 5 mm × 5 mm mesh for adult quails; plastic cages are described as convenient for commercial quail farming.

4

Environment

Provide proper ventilation and ensure the movement of air and light through the house.

5

Protection

Keep the house out of reach of wild animals and prevent predators from entering.

6

Training standard

Inspect cage density, mesh integrity, ventilation, light, predator protection, and cleanliness before placing birds.

Quail Feed Must Change by Age While Protein and Ingredient Balance Stay Controlled

Daily intake and protein: an adult quail consumes approximately 20–25 g of food daily; chick feed should contain 27% protein, while adult feed should contain 22–24% protein.

Ingredient	0–3 weeks	4–5 weeks	Adult
Broken wheat	48	50	50
Sesame cake	23	22	22
Kipper fish	20	16	14
Rice bran	6	8	9
Broken oyster shell	2.25	3.25	4.25
Salt	0.50	0.50	0.50
Mineral mix	0.25	0.25	0.25
Total percentage	100	100	100

Practical rule: provide balanced feed regularly, maintain clean fresh water, and adjust the ration to the bird's age and production stage rather than feeding one formulation throughout the life cycle.

Quail Productivity Depends on a Managed Life Cycle, Light, and Disease Prevention

Life Cycle

Quails generally survive 3–4 years; newly hatched chicks weigh approximately 6–7 g. Females begin laying at 6–7 weeks, eggs weigh 7–15 g, and quails lay more than 300 eggs per year.

Chick Management

Chicks remain sensitive for about two weeks. Hatch temperature and light schedule: week 1—37.7°C and 24 hours of light; week 2—35°C and 24 hours; week 3—32.2°C and 12 hours.

Egg Production & Disease Prevention

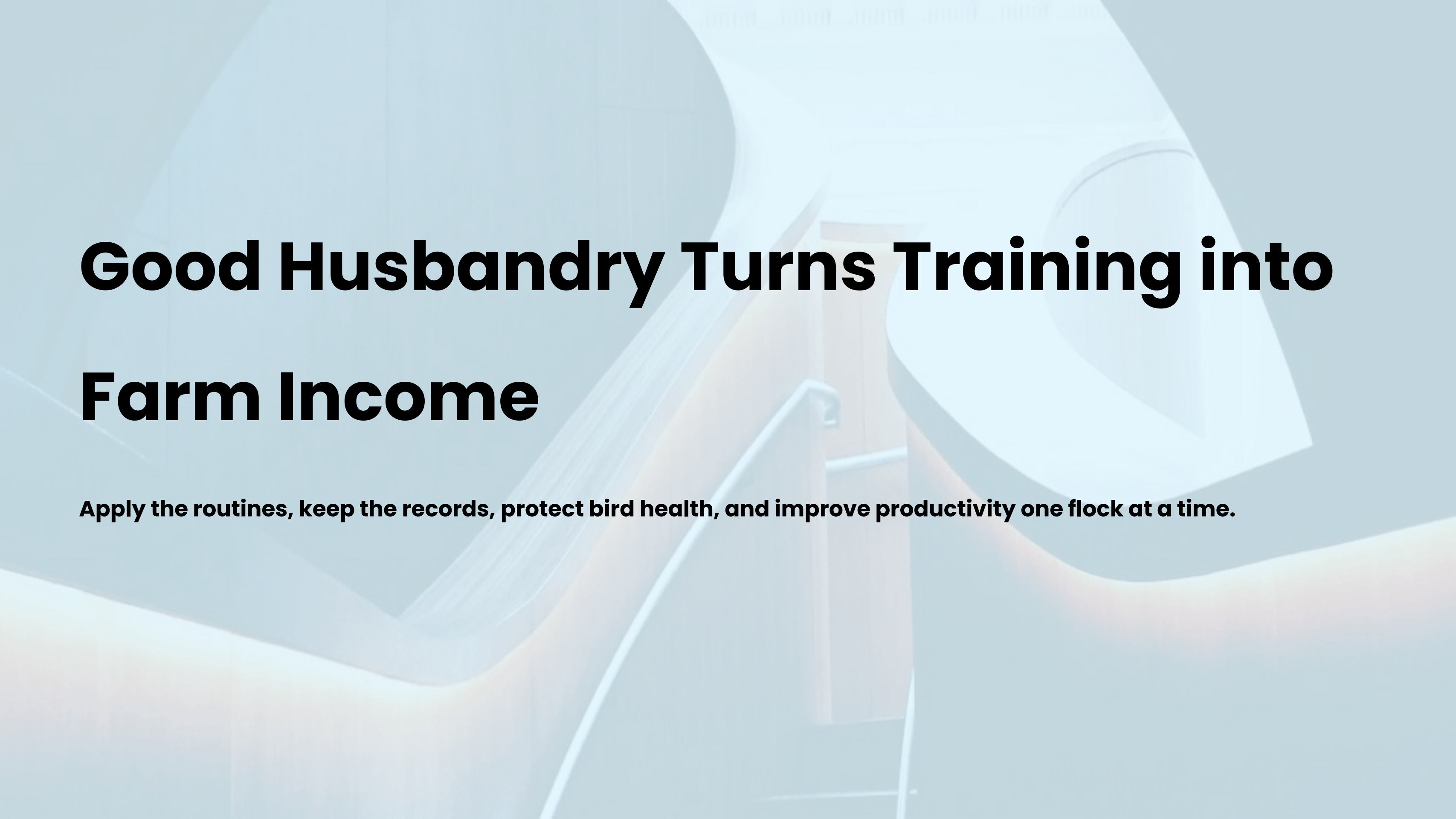
Adequate light, breed, temperature, feed, water, care, and clean dry housing all influence laying. Treat coccidiosis with coaxial 20 mixed at 2 g/L of water for three days; treat ulcerative enteritis with 1 g streptomycin per liter of water for three days—always follow veterinary guidance.

Breeding

Use one male for every five females; select smooth, hard-shelled eggs weighing 9–11 g for hatching. Quails do not incubate their eggs, so use an incubator or brooder chickens.

Laying-Quail Schedule

Week 1—35°C and 24 hours; week 2—30°C and 24 hours; week 3—25°C and 12 hours; week 4—21–22°C and 12 hours; week 5—21°C and 12 hours; week 6—21°C and 13 hours; week 7—21°C and 14 hours; week 8—21°C and 15 hours; week 9 and after—21°C and 16 hours.

The background of the slide features a faded, artistic photograph of a wooden chicken coop. A ramp leads up to a doorway, and a large white wheel, possibly a pulley or part of a wheelbarrow, is visible on the right side. The overall tone is light and airy, with a focus on farm infrastructure.

Good Husbandry Turns Training into Farm Income

Apply the routines, keep the records, protect bird health, and improve productivity one flock at a time.