Technical Update

MANAGING CREEPING, PILING, AND SMOTHERING BEHAVIOUR IN LAYING HENS

DEFINITION

Piling, a common precursor to smothering losses, occurs when hens crowd excessively, often in corners, nesting areas, or under equipment, leading to overheating, suffocation, and mortality. It may be triggered by environmental (light, temperature, ventilation), management (space, nest, or perch design), or behavioural factors (fear or social attraction) (1).

Creeping describes a gradual build-up of birds into dense clusters, often unnoticed until losses occur. Effective prevention relies on consistent light and ventilation, adequate space, and calm handling (2,3,4). Smothering is more commonly reported in brown birds, but it can occur just as readily in white varieties if environmental conditions are not properly managed.

TYPES OF PILING BEHAVIOUR

1. Nest Piling – Hens overcrowd preferred nesting or perch areas (often at the end of a pen). Incidents are closely related to laying patterns—consistent and location-specific.
2. Panic Piling – Triggered by sudden disturbance (e.g. predator, noise, movement), causing birds to rush into corners or walls; can result in severe mortality.
3. Recurring Piling – Repeated piling in the same or similar area, typically involving fewer birds. Contributing factors include temperature variation, drafts, litter condition, sunlight, or ongoing stress.

COMMON CAUSES

Piling & creeping occurs when normal gathering behaviours (resting, sleeping, fear response) intensify. Typical causes include:

- Panic from predators, wild birds, or rodents.
- Poor ventilation or heat accumulation.
- Direct sunlight or bright floor spots.
- Nest-seeking or resting behaviour.
- High or fluctuating light intensity; flicker.
- Human activity or noise in specific areas.
- Feed timing or access changes, feed restriction, or low intake.
- Crowding before or just after “lights off.”
- Cooler temperatures encouraging huddling.

Smothering events are often unpredictable and tend to occur during the lights-off period in rearing, as well as during early lay and peak production, when birds are particularly susceptible to stress. **Identifying the timing and location of these incidents can help determine the underlying causes.**

PREVENTION & MANAGEMENT

Early Detection and Monitoring

- Monitor floor temperature profiles; cooler areas often correlate with piling behaviour.
- Assign staff to observe birds for 10 to 15 minutes during the lights-off transition to identify early signs of crowding.

Optimise Lights-Off Management

- Extend the dimming period by 20 to 30 minutes for recurring piling incidents.
- Avoid sudden blackout; low-intensity guide lights will help support calm movement.

Nesting and Perching Adjustments

- Monitor nest occupancy for overcrowding. Addressing this early can help reduce the risk of piling and smothering.
- A 1- to 2-hour light period added during the middle of the dark phase may help adjust laying patterns and alleviate nest piling. This should be considered an advanced intervention and used only when standard management adjustments have not resolved the issue. Consultation with your local Hy-Line representative is essential before implementation.
- Ensure perches are comfortable, correctly positioned, and non-slip.

Feed and Activity Management

- Provide enrichment feed (such as alfalfa blocks) to encourage activity and even distribution.
- Avoid major feed changes during early lay, as abrupt alterations may increase stress and clustering.

Reduce Fear Triggers

- Seal entry points used by rats or wild birds.
- Install visual barriers to minimise sudden shadows near popholes or along walls.
- Maintain consistent equipment noise schedules to avoid unexpected disturbances.

Behavioural Conditioning During Rearing

- Expose pullets to controlled variations in background noise.
- Encourage regular human movement through the flock to reduce fear responses.
- Train birds to routine equipment sounds to promote calm behaviour in lay.

Litter Quality

- Maintain dry, friable litter and avoid excessive humidity, as damp areas can encourage birds to cluster and may contribute to piling behaviour.

Housing Design

- Round off corners to prevent congregation.
- Use wire-mesh rather than solid partitions for airflow.
- Install solid barriers near problem nest boxes to discourage piling.
- Minimise corners around feeders and equipment.

Environmental Control

- Ensure uniform ventilation and avoid drafts.
- Maintain even light distribution; use deflectors or traps to reduce bright spots.
- Prevent direct sunlight through popholes.
- Align lighting programs with natural day length; avoid lights-off before sunset.

Encouraging Even Bird Distribution

- Walk problem flocks immediately before or after the lights-off period to help disperse crowding birds.
- Provide feed one hour before lights-off to spread birds (consult your local Hy-Line representative before implementing).
- Offer an afternoon feed in colder conditions to reduce huddling (consult your local Hy-Line representative before implementing).
- Add an enrichment material (such as alfalfa, grain or grit) to occupy birds.
- Ensure sufficient perch space.

Reducing Stress and Panic

- Use background music (introduced in rearing) to desensitise birds to noise.
- Avoid sudden sounds or movements, handle birds calmly, especially in the evening.
- Avoid feed restriction during critical periods.

Managing Problem Areas

- Place clean pallets or similar objects in known piling zones to disperse birds and create airflow gaps.

REFERENCES

1. Barrett, J., Rayner, A. C., Gill, R., Willings, T. H., & Bright, A. (2014). Smothering in UK free-range flocks. Part 1: incidence, location, timing and management. Veterinary Record, 175(1), 19. https://doi.org/10.1136/vr.102327
2. Bright, A. (2009). Piling behaviour in laying hens. Veterinary Record, 165(20), 606–608.
3. Nicol, C. J., Caplen, G., Edgar, J., & Browne, W. J. (2017). Associations between welfare indicators and smothering in free-range laying hens. Applied Animal Behaviour Science, 188, 75–83.
4. Rodenburg, T. B., Tuyttens, F. A. M., et al. (2013). Welfare of laying hens in alternative housing systems. Poultry Science, 92(10), 2284–2295.