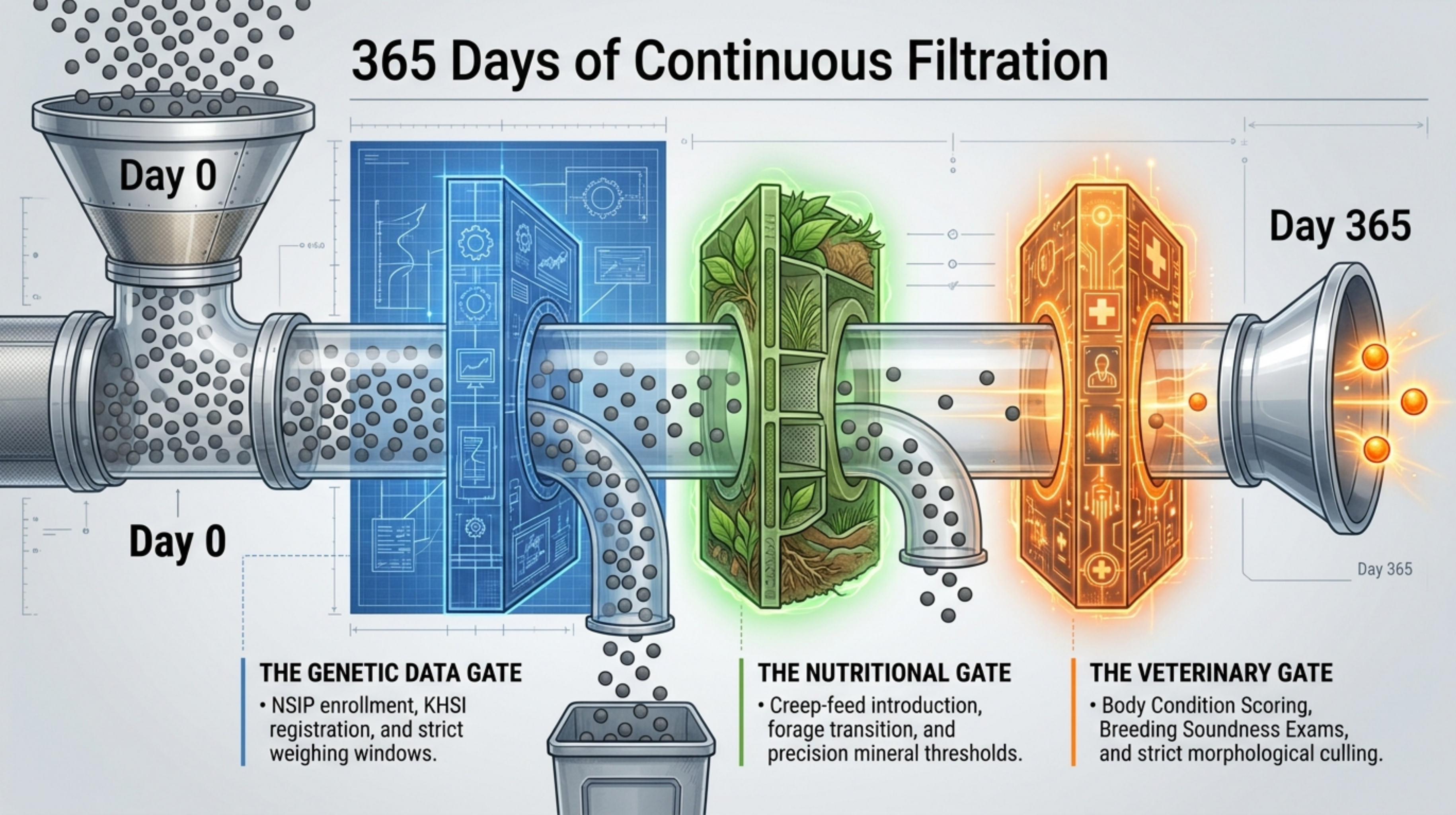


365 Days of Continuous Filtration



Day 0

Day 365

Day 0

Day 365

THE GENETIC DATA GATE

- NSIP enrollment, KHSI registration, and strict weighing windows.

THE NUTRITIONAL GATE

- Creep-feed introduction, forage transition, and precision mineral thresholds.

THE VETERINARY GATE

- Body Condition Scoring, Breeding Soundness Exams, and strict morphological culling.

The KHSI & NSIP Registration Triad

CODON 171 SCRAPIE GENOTYPE

KHSI requires RR or QR lab results for event entry. QQ genotypes are strictly excluded.

MULTI-SIRE DNA PARENTAGE

LAMBPLAN requires DNA parentage for multi-sire breeding groups. Marking harnesses alone yield mismatching that destroys EBV accuracy.

16-DIGIT ID IMMUTABILITY

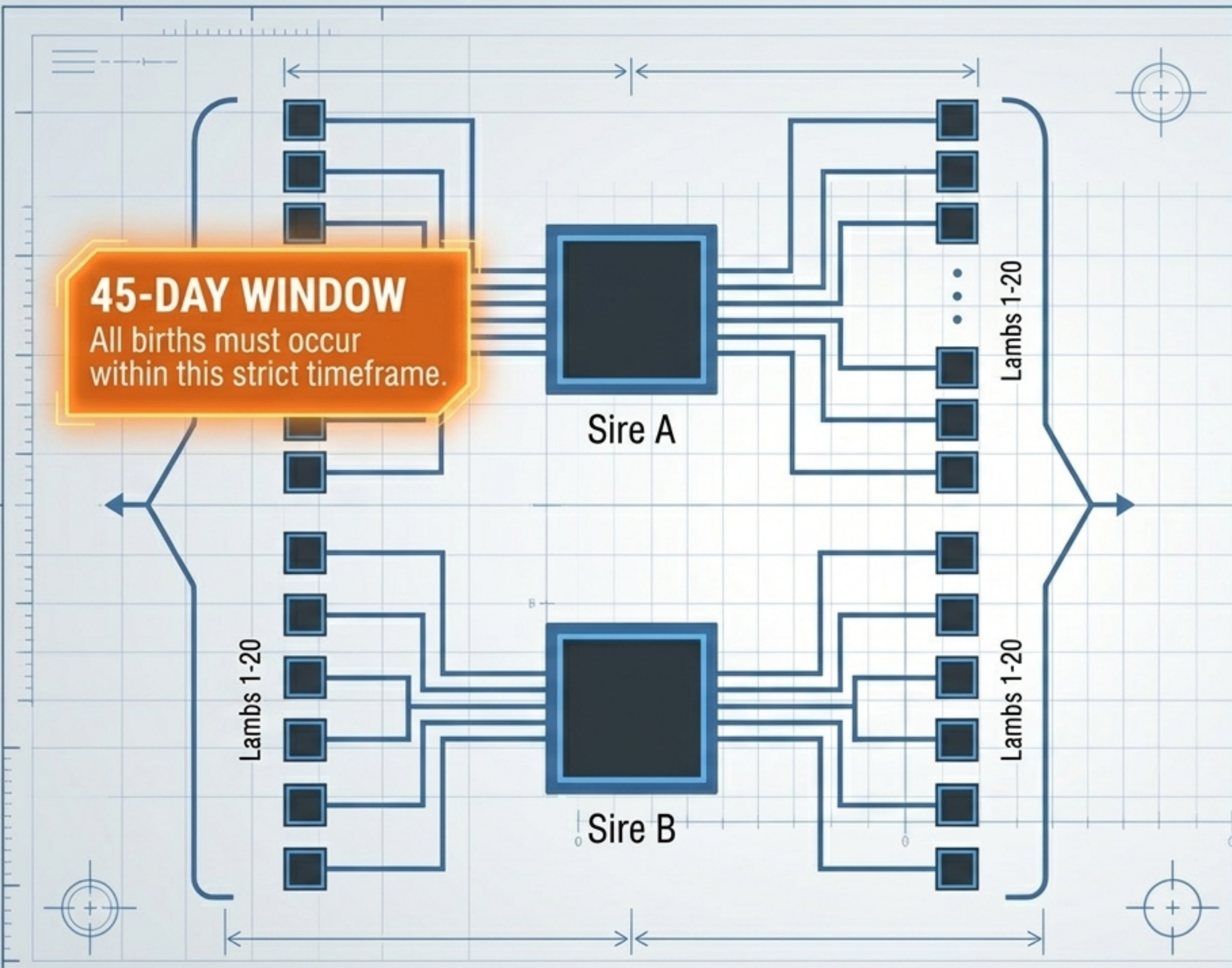
The assigned LAMBPLAN ID (Breed + Flock + Year + Animal ID) is permanent. Dead or sold animals are never deleted from Pedigree Wizard, only flagged via status change.



Contemporary Group Architecture

45-DAY WINDOW

All births must occur within this strict timeframe.



REQUIREMENT 1

2 distinct sires minimum.

REQUIREMENT 2

20 lambs per sire minimum.

THE LINKAGE IMPERATIVE

Small flocks (~20 ewes) must build linkage to the global LAMBPLAN database by leasing or buying proven sires from other NSIP participants.

Artificial rearing and wethers require distinct management codes to prevent data corruption.

NSIP Active-Enrollee Weighing Windows

< 24 HOURS

45-89 DAYS

91-150 DAYS

10-14 MONTHS

TOLERANCE TIMELINE BAR

Birth: Optional but strongly recommended. Capture Sire ID, Dam ID, Sex, Birth Type, Rear Type.

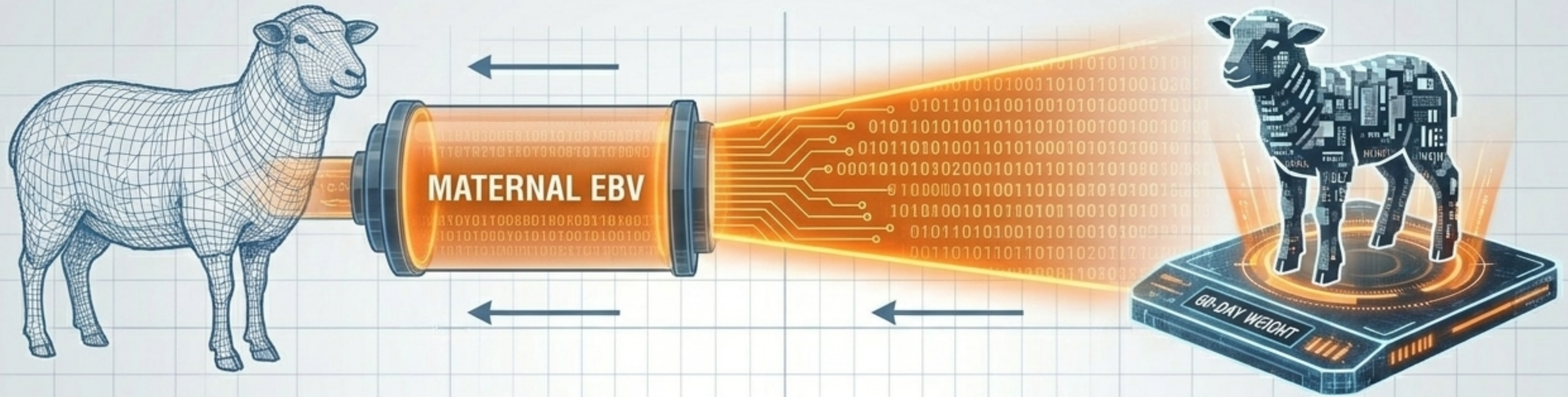
WWT - Weaning: Target 60 days. Required. Captures maternal milk production proxy.

PWWT - Post-Weaning: Target 120 days. Required for accurate PWWT EBVs.

YWT - Yearling: Required for Yearling Weight EBVs.

WARNING: NO 30-DAY SUBMISSION POINT
Missing the 45-89 day weaning window blunts the accuracy of every downstream EBV.

The MWWT Proxy Mechanism



THE CONCEPT

NSIP does not calculate EBVs directly from subjective lambing-ease or mothering scores.

THE MATH

The maternal genetic component is captured indirectly. A lamb's 60-day weaning weight acts as a proxy for the dam's milk production.

THE APPLICATION

A heavy 60-day weight on a twin-born lamb definitively isolates the dam's mothering ability (**Maternal Weaning Weight - MWWT**) from the lamb's baseline growth genetics.

Early Nutrition & The Weaning Matrix

Rumen Activation (Days 10-21)

Introduce **creep feed** at **2-3 weeks**.

18-20% CP transitioning to **14-16%** by weaning.

Must maintain **$\geq 2:1$ Ca:P Ratio** plus **0.5% Ammonium Chloride** to prevent fatal urinary calculi in ram lambs.

Weaning Age Tradeoffs

THE HARD FLOOR

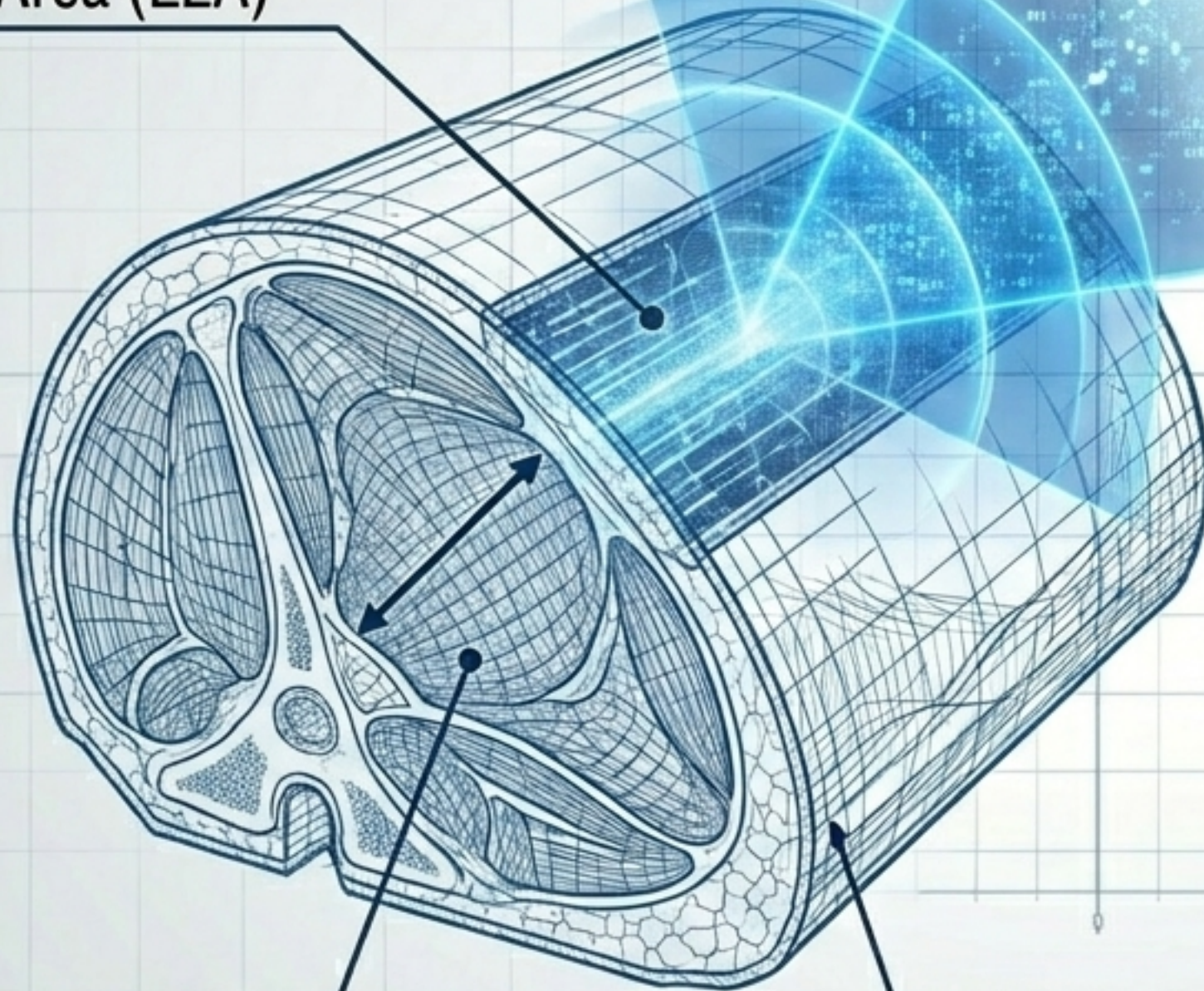
30 Days / 30 lbs for bottle lambs. Below this threshold, weaning produces an unrecoverable growth setback.

THE WELFARE IDEAL

90-100 Days for dam-raised lambs. Progressive separation over 4 weeks results in measurably lower cortisol secretion than abrupt weaning at 60 days.

Carcass Data & The Intact Ram Requirement

Loin Eye Area (LEA)



Loin Eye Depth (LED)

12th-rib Backfat

DAYS 90-180

THE ULTRASOUND WINDOW

90-180 DAYS. Must be performed by an NSIP-certified technician with same-day weights recorded.

THE CASTRATION RULE

Any ram lamb under NSIP selection consideration **MUST** remain intact through the 120-day post-weaning weight and the ultrasound scan. Banding removes the animal from individual genetic evaluation.

Mid-Atlantic Forage Cycle Intersections



SPRING FLUSH (MAR-MAY)

Cool-season grasses provide abundant energy. Weaned lambs hit maximum pasture-based ADG.

0007-3

SUMMER SLUMP (JUL-AUG)

Endophyte-infected tall fescue dominates. Ergovaline alkaloid causes reduced gain, heat stress, and fescue toxicosis.

REQUIRED ACTION: Establish summer annuals or feed quality-tested hay.

FALL FLUSH (SEP-OCT)

Regrowth provides the final high-quality grazing window before the breeding gate.

0007-3



Katahdin-Specific Mineral Management

SELENIUM TOXICITY RISK

Mid-Atlantic soils are deficient, but Katahdin flocks have documented fatal toxicosis from over-supplementation.
DO NOT STACK SOURCES.

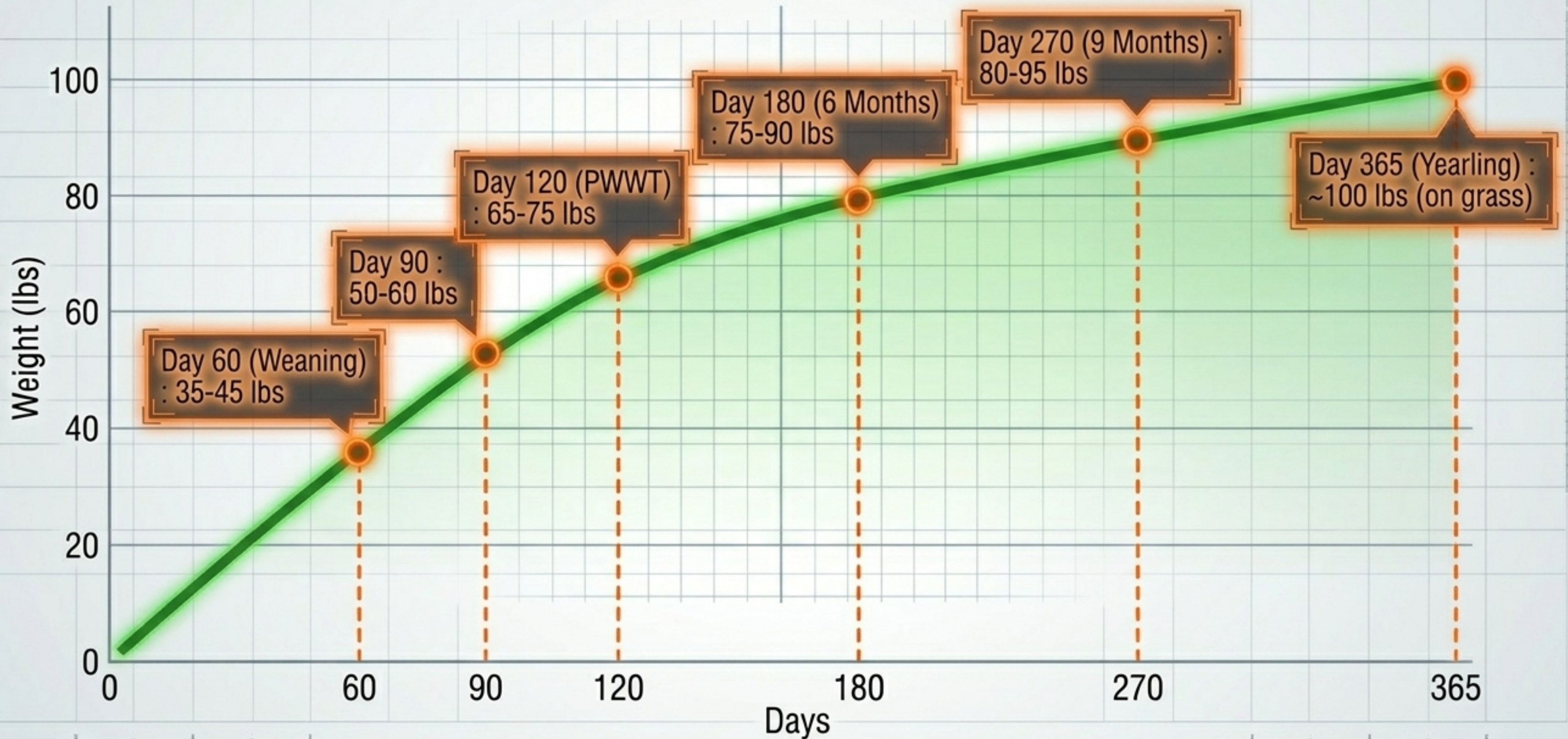
Providing free-choice mineral + injectables + drenches + boluses without a liver panel baseline invites toxicity.

THE COPPER NUANCE

Sheep require 4-6 ppm Cu minimum. Katahdins (hair sheep) tolerate slightly higher copper than wool breeds, but severe toxicity still occurs.

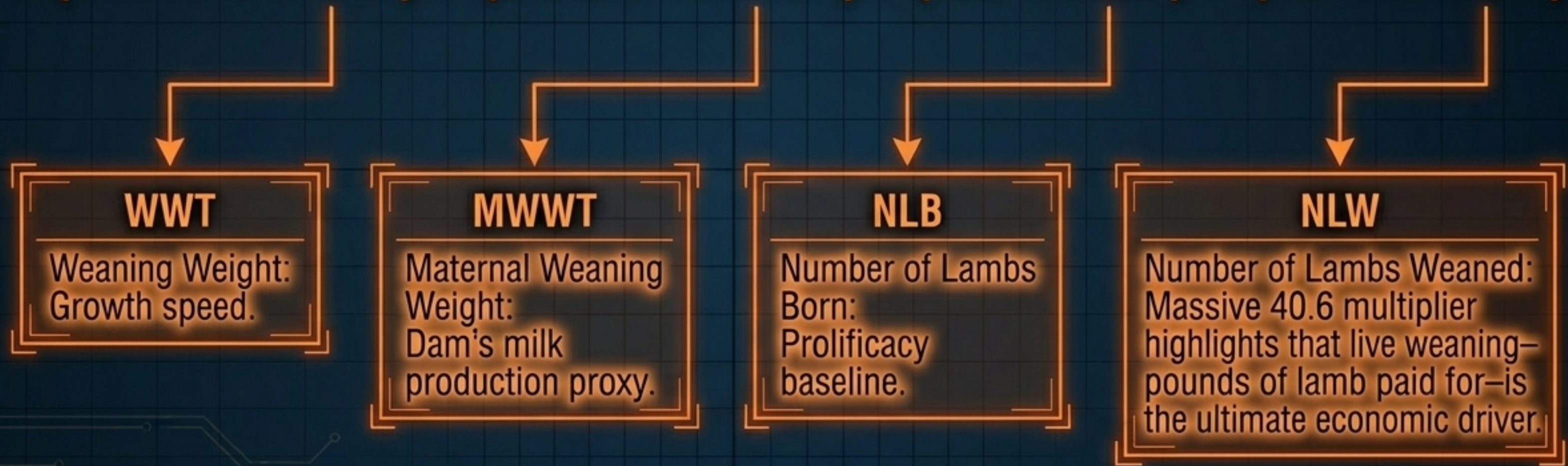
ACTION PROTOCOL: Use sheep-specific loose mineral only. Never feed all-stock or goat mineral. Confirm flock status via liver biopsy before any distinct Cu supplementation.

The Katahdin Pasture-Based Growth Curve



The USA Hair Index

$$100 + (0.246 \times \text{WWT}) + (2.26 \times \text{MWWT}) - (3.5 \times \text{NLB}) + (40.6 \times \text{NLW})$$



RULE: Rank all retention candidates by this index before applying physical exams.

The Replacement Ewe-Lamb Breeding Gate

7-9 MONTHS

SIZE

Reaches 70% of Mature Weight (Target: 90-100 lbs for Katahdins).

CONDITION

Body Condition Score (BCS) evaluates to 3.0 - 3.5.

TRAJECTORY

Pre-breeding rate of gain tracks at 0.4 - 0.5 lbs/day.

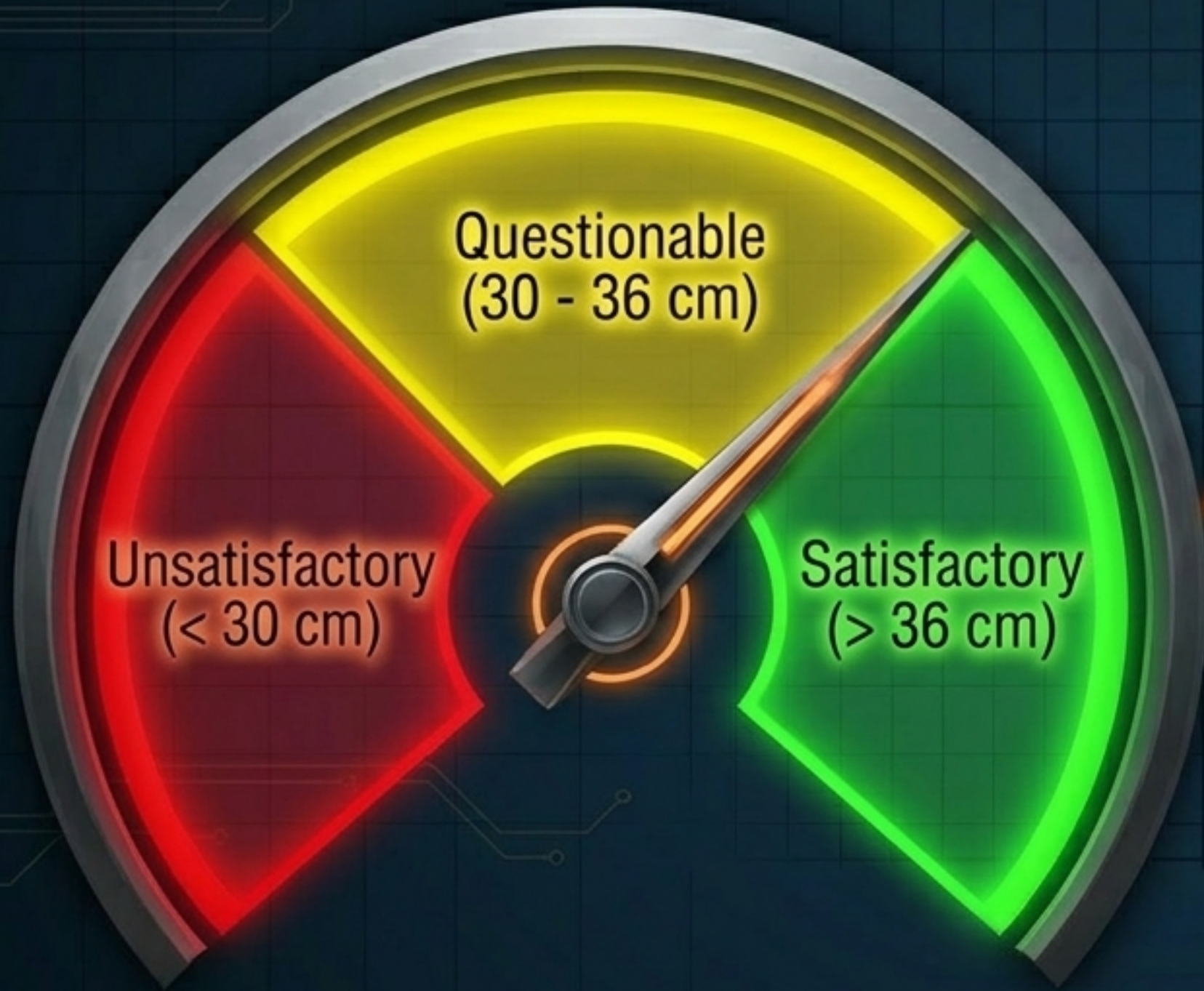
AND

AUTHORIZE BREEDING

Early-maturing ewe lambs bred at 7-9 months yield higher lifetime prolificacy.

Failure to meet all three conditions requires deferring breeding to the second fall.

The Ram-Lamb BSE Thresholds



TIMING

Breeding Soundness Exam (BSE) must occur 60 DAYS prior to exposure (spermatogenesis cycle duration).

SCROTAL CIRCUMFERENCE (8-14 MONTHS)

< 30 cm : Unsatisfactory
30 - 36 cm : Questionable (Retest in 30 days)
> 36 cm : Satisfactory

DEPLOYMENT RATIO

Restrict ram-lamb to ewe ratio to 1:15 - 1:20 (Standard mature ratio is 1:25 - 1:35).
Target BCS 3.5 - 4.0.

The Yearling Retention Matrix

GENETIC DATA INTEGRITY

Survived the tight NSIP weighing windows, Codon 171 screening, and ranks in the upper percentiles of the USA Hair Index.



NUTRITIONAL GROWTH

Navigated the Mid-Atlantic forage slump and hit the rigid 70% mature weight (90-100 lb) threshold.

PHYSICAL SOUNDNESS

Cleared the Breeding Soundness Exam, Scrotal Circumference limits, and strict BCS gates.

SYNTHESIS: A replacement breeding animal must thread the needle through all three dimensions. Missing one protocol in the first 365 days breaks the pipeline. Data without physical soundness is useless; physical size without genetic data is a gamble.