OPERATING SYSTEM & USER MANUAL

HADDEN PREMIUM BEEF

Cattle Feedlot Integrated Management System

Official Operating Guide: Weight Brackets, Automated Pen Allocation, ADG Tracking, 8-Ingredient Feeding Tables & 430 kg Minimum Selling Weight Compliance

Core System Capabilities:

- **Automatic Induction Enrollment:** All newly registered stock are automatically placed on Day 1 of the 21-Day Induction List.
- **Predefined Weight Pen Allocation:** Automatic assignment to Pen A1, B1, C1, or D1 when transferring cattle.
- **Structured Editable Herd Table:** Rapid inline editing, instant multi-animal entries, and live calculation.
- **14-Day ADG Formula:** `ADG = (Current Weight - Previous Weight) ÷ 14 days` displayed in kg/day.
- **Automatic Movement of Sold Animals:** Sold animals immediately leave the active herd count and transfer to the historical Sold Archive.
- **430 kg Minimum Selling Weight Restriction:** Strict validation barring any sale registration under 430 kg.
- **Redesigned Feed Formulation Tables:** 11-column stage ration spreadsheet & Master 4-Stage Comparison Matrix.

Farm: **Hadden Premium Beef**
Application Version: **v3.0 Enterprise Edition**

Platform: **Web OS (Phone, Tablet & Desktop)**
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Chapter 1: System Overview & Stock Registration Protocol

The **Hadden Premium Beef Feedlot OS** is a custom, non-generic management system engineered for high-precision pen-fattening operations. It replaces loose spreadsheets with an interactive, reactive platform that manages animal biometrics, weight gain curves, daily feeding rations, veterinary interventions, and individual P&L tracking.

1.1 Registering and Adding New Stock (Animals)

Users can register new cattle into the system through two convenient methods:

1. **Intake Registration Modal:** Click **"Register Animal"** or **"Intake"** in the top header. Complete the registration form with Tag Number, Breed, Sex, Horn status, Arrival Date, Arrival Weight, and Purchase Price.
2. **Direct Table Ingestion (+ Quick Add Row / + Batch 5 Rows):** Click **"+ Quick Add Row"** directly on the Herd Table to insert a pre-filled row at the top of the table. To register multiple cattle arriving in a batch, click **"+ Batch 5 Rows"** to generate 5 rows simultaneously for rapid tabbing and inline typing.

> **Automatic Induction List Enrollment:** Whenever a new animal is registered or added through either method, the system *automatically* places that animal on the **21-Day Bio-Security Induction List** on Day 1. Its initial pen is set to `Induction Quarantine Bay`, and it is instantly reflected across all relevant counters, badges, and dashboard metrics.

Chapter 2: 21-Day Induction Bay & Automatic Pen Allocation

All new arrivals must complete the 21-Day Bio-Security Induction Protocol before joining the resident feedlot herd. The Induction List tracks quarantine timeline progress from Day 1 (Intake Dipping) through Day 21 (Final Protocol Weigh-In).

2.1 Automatic Pen Allocation Upon Herd Transfer

When an animal is transferred from the Induction Bay into the Traditional Herd, the system **automatically allocates it to the correct pen** based on its current scale weight and predefined weight ranges. Manual pen guesswork is completely eliminated:

Weight Range	Growth Stage	Predefined Pen Allocation	Nutritional Strategy
270 – 330 kg	Starter Group	**Pen A1 (Starter)**	High-fiber rumen adaptation & microbial establishment
331 – 390 kg	Grower Group	**Pen B1 (Grower)**	Protein-dense skeletal framing & muscle deposition
391 – 430 kg	Starter Finisher	**Pen C1 (Starter Finisher)**	Energy transition & intramuscular marbling initiation
Above 430 kg	Finisher Group	**Pen D1 (Finishing Bay)**	High-energy grain finishing; slaughter-ready stock

> **How Transferring Works:** On the Induction List, tap **"Transfer"** on any cleared animal. The Transfer Modal confirms the animal's scale weight and displays its automatically computed pen (e.g., a 355 kg steer automatically receives `Pen B1 (Grower)`). Upon confirmation, the animal is removed from quarantine and immediately appears under its allocated pen in the Traditional Herd.

Chapter 3: Structured Editable Herd Information Table

The Herd Information view is designed as a structured, spreadsheet-style interactive table. Farm managers can enter, edit, and update animal records directly inside the table cells without opening separate dialogs.

3.1 Key Table Features & Instant Reactivity

- **Direct In-Cell Editing:** Tag numbers, breeds, sexes, horn status, purchase dates, purchase prices, previous weights, and current scale weights are editable inputs.
- **Live Weight Triggers:** Changing an animal's **Current Weight** instantly triggers automatic re-allocation to its correct pen and growth stage, updates its 14-day ADG, and evaluates sale eligibility.
- **Visual Save Feedback:** Edited rows flash in emerald green (`.flash-saved`) to confirm that changes have been stored to the local database.
- **Batch Data Entry:** Using **"+ Batch 5 Rows"**, staff can log an entire delivery of 10 or 20 cattle in minutes by tabbing across fields.

Chapter 4: Average Daily Gain (ADG) Weight Tracking

Average Daily Gain is the primary operational benchmark of feedlot profitability. The system features an automated ADG engine integrated into weight management records, the editable table, animal passports, and dashboard KPIs.

4.1 Mandatory ADG Calculation Formula

The system strictly calculates average daily gain using the 14-day weighing interval formula:

```
ADG = (Current Weight - Previous Weight) ÷ 14 days
```

The calculation uses the difference between the current scale weight and the previous recorded weight over the standard 14-day weighing cycle. The result is displayed in **kilograms per day (kg/day)** with color-coded performance badges:

- **High Gain (≥ 1.50 kg/day):** Optimal feed conversion and rapid weight accumulation.
- **Moderate Gain (1.00 – 1.49 kg/day):** Standard growth trajectory.
- **Low Gain / Loss (< 1.00 kg/day):** Triggers veterinary review for sub-clinical acidosis, parasites, or bunk competition.

Chapter 5: Automatic Movement of Sold Animals

Whenever an animal is marked as **Sold** (via the status dropdown in the table or the Sell modal):

1. The system verifies that the animal meets the mandatory **430 kg minimum selling weight**.
2. The animal is **automatically moved from active herd records to the dedicated Sold section**.
3. **Active Herd Count Exclusion:** Sold animals no longer appear in the active herd count or stage pens.
4. **Permanent Historical Archive:** Full historical records (purchase price, intake weight, final sale weight, days in pen, total feed cost, vet cost, sale price, and net realized profit) remain permanently accessible in the **Sold Archive** tab for auditing and performance reporting.

Chapter 6: Minimum Selling Weight Restriction (430 kg Rule)

Feedlot quality standards enforce a strict minimum slaughter selling weight of **430 kg**. Underweight cattle produce lower carcass yields and do not satisfy premium abattoir grading.

> **Enforced Selling Validation Rule:**
> - Animals weighing below **430 kg** are strictly **ineligible for sale registration**.
> - If a user attempts to select "Sold" for an animal weighing under 430 kg, the system blocks the action, resets the status, and displays an explicit notification: *"⛔ Sale Registration Restricted: Animal weighs [X] kg. Minimum selling weight of 430 kg is strictly required. Requires +[Y] kg more to qualify."*
> - In the status modal, the "Sold" option is disabled and locked for animals under 430 kg.
> - Only animals weighing **430 kg or above** qualify for sale registration.

Chapter 7: Redesigned Feed Formulation Tables

The Feed Formulations module has been redesigned into a structured table format to allow farm managers to enter, view, edit, and manage nutritional rations with complete precision. Rations utilize strictly the **8 core ingredients**.

7.1 11-Column Stage Formulation Spreadsheet

#	Ingredient Name	Nutritional Function	Morning (kg)	Afternoon (kg)	Daily (kg)	Inclusion %	Unit Cost ($)	Daily Cost	Pen Batch	Batch Cost
1	**Hay (Rhodes/Velvety)**	Roughage / Rumen Fiber	1.80	1.80	3.60 kg	39.1%	$0.12/kg	$0.43	21.6 kg	$2.58
2	**Molasses (Liquid)**	Soluble Carbohydrates	0.70	0.70	1.40 kg	15.2%	$0.22/kg	$0.31	8.4 kg	$1.86
3	**Maize Bran (Energy)**	Digestible Energy Matrix	1.40	1.40	2.80 kg	30.4%	$0.28/kg	$0.78	16.8 kg	$4.68
4	**Chicken Litter (NPN)**	Non-Protein Nitrogen	0.90	0.90	1.80 kg	19.6%	$0.08/kg	$0.14	10.8 kg	$0.86
5	**Sunflower Cake**	Bypass Vegetable Protein	0.60	0.60	1.20 kg	13.0%	$0.38/kg	$0.46	7.2 kg	$2.76
6	**Feedlot Premix**	Vitamins & Trace Minerals	0.05	0.05	0.10 kg	1.1%	$1.45/kg	$0.15	0.6 kg	$0.90
7	**Coarse Salt**	Electrolytes & Salivary Buffer	0.04	0.04	0.08 kg	0.9%	$0.18/kg	$0.01	0.48 kg	$0.06
8	**Brewer's Grains (Masese)**	Moist Bypass Draff Protein	1.50	1.50	3.00 kg	32.6%	$0.15/kg	$0.45	18.0 kg	$2.70
Total Ration per Head:			**4.60 kg**	**4.60 kg**	**9.20 kg**	**100.0%**	-	**$1.78/d**	**55.2 kg**	**$10.68**

7.2 Master 4-Stage Comparison Matrix

Tap **"Master 4-Stage Matrix"** to view a side-by-side comparison across all four stages (Starter, Grower, Starter Finisher, Finisher) displaying morning, afternoon, total kilograms, and daily feed cost per animal.

Chapter 8: Feed Silo Inventory & Auto-Deductions

The **Stock & Silos** register tracks raw material opening stock, incoming shipments, and current silo balances. Clicking **"Deduct Day Feed"** automatically calculates the total feed consumed across all pens for the day and subtracts it from each silo's balance. Low stock alerts warn managers before supplies are exhausted.

Chapter 9: Veterinary Clinic & Dipping Calendar

The health module safeguards herd biosecurity through two core sections:

- **Clinical Treatment Register:** Logs sick cattle, diagnosis, medicine, administration route (IM, SC, Oral, Topical, IV), recovery rate (0–100%), and veterinarian notes. Vet expenses are added directly to the animal's cost ledger.
- **Health & Dipping Calendar:** Tracks compulsory acaricide plunge dipping cycles (Amitraz 12.5%), Clostridial multi-strain vaccinations, Anthrax runs, and oral deworming drenches.
- **Pharmacy & Equipment Inventories:** Tracks medication expiry dates and maintenance schedules for scales, drenching guns, and feed mixers.

Chapter 10: Financial Intelligence & Animal Profitability

Profitability is computed continuously in real time for every individual animal in the herd:

```
Net Profit = Current Value (or Sale Price) - [Purchase Cost + Total Feed Cost + Vet Cost]
```

Where:

- `Total Feed Cost = Days in Pen × Daily Ration Cost for Animal's Stage`
- `Current Live Value = Scale Weight × Benchmark Price ($2.45/kg)`
- `Sale Price = Actual realized revenue when sold (≥430 kg)`