



BUSINESS PLAN · INDIA

Cattle-Feed Manufacturing

Compound feed with the batch analysis published on the bag

DAIRY

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This document is confidential and prepared for planning purposes. All financial figures are illustrative model assumptions for an Indian MSME context and must be validated against live quotes, local rates and professional advice before any investment or borrowing decision.

1. Executive Summary

This plan sets out a **Cattle-Feed Manufacturing Business** in India — a compound-feed mill producing pelleted and mash cattle feed, calf starter, bypass-protein and bypass-fat supplements, and mineral mixtures, sold to dairy farms, cooperatives, milk unions and a village dealer network, with an in-house laboratory and its own raw-material intake gate.

The dairy vertical's conventions are set in the dairy-farm anchor and carried through the processing, products-brand, ice-cream and distribution plans: **where the party bearing the cost cannot report its own condition, the honest operator measures and publishes on its behalf; a gatekeeper that chooses its own detection scope must publish the scope; controls are locks rather than warnings; and a figure that will be published tomorrow is one nobody rounds today. What is specific to feed is that two parties in the transaction are unable to check anything, and one of them is not a person.**

□ **THE FARMER CANNOT ANALYSE THE FEED AND THE COW CANNOT REFUSE IT.** Compound feed is sold on a printed protein and energy claim that a smallholder has no means whatever to verify — no laboratory, no comparison, no second opinion — and under-formulation is invisible for months. When it finally shows, it shows as falling yield and poor body condition, and it is attributed to the cow, the season or the weather rather than to the sack in the shed. Feed is therefore the one input in Indian dairy where cheating is cheap, undetectable and blamed on somebody else. So this mill **PUBLISHES EVERY BATCH ANALYSIS AGAINST THE BAG'S BATCH CODE** — crude protein, true protein, energy, fibre, moisture and mineral content — so a farmer can look up the sack in his shed, and **RETAINS A SAMPLE OF EVERY BATCH** for the shelf life plus a margin so a disputed result can be re-tested rather than argued.

□ **AND THE STANDARD TEST CAN BE GAMED, WHICH IS WHY TWO NUMBERS ARE PUBLISHED.** Crude protein is measured from nitrogen content, so adding urea or other non-protein nitrogen raises the printed protein figure without supplying protein a cow can use — a cheap, lawful-looking manipulation that a farmer cannot detect and that a laboratory will confirm as compliant. This mill reports **TRUE PROTEIN AND NPN SEPARATELY** on every batch page, adds no NPN to inflate a crude-protein claim, and states the bypass-protein fraction as a number rather than as a marketing word. The general rule: **WHERE THE STANDARD TEST MEASURES A PROXY RATHER THAN THE THING ITSELF, PUBLISHING THE PROXY IS NOT DISCLOSURE — PUBLISH THE COMPONENT THE PROXY CONCEALS.**

□ **The third finding travels three steps downstream: AFLATOXIN IN THE FEED BECOMES AFLATOXIN M1 IN THE MILK.** Maize and groundnut cake routinely carry aflatoxin B1, a portion of which passes into milk as M1 — so a feed mill's incoming testing decides whether a child two districts away drinks a carcinogen, and neither the farmer nor the processor nor the consumer can trace it back. Every intake lot is tested, 412 lots were rejected in Year 3, and the rejections are reported.

This plan models an operator requiring **₹9.80 crore** (₹3.40 crore investor + ₹2.60 crore working-capital facility + ₹2.00 crore promoter + ₹1.80 crore term loan), moving from **₹28.00 crore revenue and an ₹84 lakh loss** to **₹86.00 crore revenue and ₹3.44 crore profit** by Year 3 — a 4.0% net margin, 29.8% return on capital, and capacity utilisation rising from 38% to 71%. (Cattle-feed manufacturing — figures illustrative.)

2. Business Description, Vision & Legal Structure

Concept: A feed mill whose sack carries a batch code that returns an analysis.

Vision: To be the mill a farmer can hold to a number instead of a promise.

Mission: Test every intake lot for aflatoxin and reject what fails; publish the batch analysis against the code on the bag; report true protein and NPN separately; add no urea to inflate a protein claim; keep a retained sample so a dispute can be tested; state the bypass fraction as a number; and never sell a growth promoter as a supplement.

Legal structure

- **Private Limited** — required in substance. Cooperative and milk-union supply contracts, BIS certification, dealer credit lines, term lending and outside capital all assume it.
- **Proprietorship or partnership** — the form of most small mills; **the consequence is that a printed protein claim sits behind an entity with no laboratory, no retained samples and nothing to pursue when a farmer's herd declines.**
- **Employed quality function holding intake and release authority**, reporting to the promoter — **because a rejected maize lot on a day the mill is short is precisely the decision a production manager should not be making.**

Regulatory anchor: a manufacturer whose product enters the human food chain one animal removed, and is regulated accordingly. **The first exposure is feed standards: BIS specifications for compound cattle feed set minimum crude protein, energy and maximum fibre, moisture and aflatoxin limits, and the Feed regulations under FSSAI's ambit reach feed intended for milk-producing animals precisely because contaminants transfer — so an aflatoxin limit in feed is a food-safety rule about milk rather than an animal-nutrition preference. The second is representation: the printed analysis on a feed bag is a specification a buyer relies on, and Legal Metrology governs net weight while consumer-protection and contract provisions reach the composition claim — a bag declaring 20% crude protein and containing 16% is a misdescribed good, whatever its nitrogen reads. The third is prohibited inputs: mammalian meat-and-bone meal in ruminant feed is banned, antibiotic growth promoters are restricted and moving toward prohibition, and hormone-type growth promoters have no lawful place in a dairy ration at all.** Then: state pollution-control consent for dust, boiler and effluent; factory, boiler and fire compliance for a dusty, explosive-risk milling environment; GST; storage and fumigation rules for grain; and EPF/ESI and POSH.

3. Promoter & Ownership

Led by a promoter with animal-nutrition, feed-milling or agri-processing background. Three competences decide outcomes. *Least-cost formulation*, because the mill's margin lives in substituting ingredients daily against volatile prices while holding the declared specification exactly — which is a discipline rather than a licence to drift. *Raw-material buying*, since maize, de-oiled cake, bran and molasses are commodity positions and a mill is a procurement business with a hammer mill attached. And *the willingness to reject a truck* — a maize lot testing above the aflatoxin limit on a morning the silo is low, from a supplier who has served the mill for years. Ownership, equity & investor terms are editable inputs; **intake rejection and batch release sit with the laboratory and the promoter, never with production or procurement, whose targets they defeat.**

4. Market Analysis — India

Indian compound-feed penetration is low, rising, and constrained less by price than by the farmer's entirely rational belief that he cannot trust what is in the bag.

Demand drivers

- **Rising milk yields and crossbred herds**, which cannot be sustained on crop residue and grazing alone.
- **Cooperative and milk-union feed programmes**, which distribute compound feed against milk payments and are the largest organised channel.
- **Shrinking grazing land and fodder scarcity**, pushing farmers toward purchased nutrition.
- **Bypass protein and bypass fat**, which raise yield measurably and are the fastest-growing premium segment.
- **Quality-linked milk pricing**, which gives a farmer a direct financial reason to care about fat and SNF, and therefore about ration quality.
- **Organised dairy farms** like the one in this vertical's anchor plan, which buy on specification and can actually verify it.

Market sizing (illustrative framing)

Layer	Definition	Indicative scale
TAM	Cattle nutrition demand across the served procurement region	Very large; compound-feed penetration still low
SAM	Farms and unions buying compound feed on a stated specification	Bounded by TRUST and DEALER REACH, not by need
SOM (Yr 1-3)	Tonnage sold across union, farm and dealer channels	₹28cr → ₹86cr; utilisation 38% → 71%

Why farmers do not buy more compound feed

Reason given	What is actually happening
"It is expensive"	True, but he cannot compute cost per litre of milk produced
"It did not work last time"	Often accurate — the bag was under-formulated and nobody could tell
"Home mix is cheaper"	Often unbalanced; the deficiency is invisible until yield falls
"All companies are the same"	A rational conclusion when none of them can be verified
"The dealer pushes whatever pays him"	Usually correct, and undisclosed

The second and fourth rows are the market opportunity and are worth stating plainly: the Indian dairy farmer's scepticism about compound feed is not ignorance, it is an accurate response to a product category he has repeatedly found unreliable and has never been able to check. A mill that makes its analysis verifiable is not overcoming a prejudice; it is answering a legitimate complaint that the industry has spent thirty years earning. That is also why the published batch page matters more than any amount of advertising — a farmer who has been disappointed twice will not believe a claim, and may believe a number he can look up.

Constraints

- **Raw-material price volatility** — maize and cake prices move violently and are the whole cost structure.
- **Dealer credit**, since feed moves on credit against the next milk payment and the mill funds it.

- **Capacity utilisation** against a fixed-cost mill and a seasonal demand pattern.
- **Aflatoxin availability risk** — in a bad monsoon year, a large share of the maize crop can fail the intake gate.

5. Competition & Position

Competitor type	Strength	Weakness this plan exploits
Cooperative and union-owned feed plants	Captive distribution, scale, farmer trust, subsidised reach	Batch analysis never published; farmer cannot check a specific bag
National feed companies	Brand, formulation science, dealer networks	Analysis printed as a range; NPN never separated from crude protein
Small local mills	Cheapest, local, flexible on credit	No laboratory; aflatoxin untested; specification aspirational
Home mixing by farmers	Lowest cash cost; ingredients visible	Unbalanced; deficiency invisible until yield falls
This plan	Every intake lot tested for aflatoxin, batch analysis published against the bag code, true protein and NPN separated, samples retained	Costs more per tonne; rejects raw material competitors will use

The positioning claim is the only verifiable one available in this category: read the code on the bag and see that batch's analysis, including the numbers the standard test would let a manufacturer hide. Organised dairy farms and milk unions respond first, because they can compute cost per litre and have been unable to compare suppliers on anything except price. The smallholder responds more slowly and more durably — he cannot read a laboratory report, but his neighbour with a smartphone can, and a village in which one person checks is a village where the claim has to be true.

The cost of the honest position is stated in rupees rather than implied. Rejecting 412 raw-material lots on aflatoxin and quality costs an estimated ₹1.86 crore a year in premium replacement buying and idle mill hours — and in a bad monsoon year it is materially worse. Declining to use NPN to reach a crude-protein number costs about ₹2.40 crore of Year-3 gross margin against competitors who do, since urea is by a wide margin the cheapest nitrogen available. Batch testing, publication and retained samples cost ₹78 lakh a year. The offsetting return is union and organised-farm business worth ₹34.40 crore of Year-3 revenue at better realisation and far better payment terms, and a dealer network that stops losing farmers after the second bag.

6. The Farmer Cannot Analyse the Feed and the Cow Cannot Refuse It

This is the dairy-farm anchor's finding one step upstream, and it is worse here, because two parties in the transaction are blind rather than one.

What can be wrong with a bag of feed	When it becomes visible	What it gets blamed on
Crude protein below the declaration	Six to ten weeks, as falling yield	The cow, the season, the weather
Protein present but not usable (NPN)	Similar, and even harder to attribute	The cow

Energy below declaration	Weight loss and poor conception	Management, or bad luck
Mineral mixture under-dosed	Months; reproductive failure	The bull, the inseminator, the cow
Aflatoxin above limit	Never, at the farm	Nothing — it leaves in the milk

Read the right-hand column: in every case the consequence lands somewhere other than on the mill, and in most cases it lands on the animal. The farmer has no laboratory, cannot run a nitrogen assay, and has no way to isolate feed as the variable in a herd where yield moves with season, health, stage of lactation and a dozen other things. The cow, per the anchor plan, cannot report her own condition at all. So a feed mill operates in the most permissive information environment in this entire library — cheating is cheap, effectively undetectable, and reliably attributed to somebody else. The only honest response is to remove the information asymmetry rather than to promise not to exploit it.

So **EVERY BATCH ANALYSIS IS PUBLISHED AGAINST THE BATCH CODE PRINTED ON THE BAG** — crude protein, true protein, NPN, metabolisable energy, crude fibre, moisture, calcium, phosphorus and the aflatoxin B1 result — **on a page a farmer, his son, his dealer or his union's technician can reach from the code in his hand. A SAMPLE OF EVERY BATCH IS RETAINED** for the shelf life plus a margin, so a farmer who believes a bag underperformed can have it re-tested rather than argued with — the milk-processing plan's retained-sample rule, applied where the weaker party is the buyer instead of the supplier. Batches outside specification are rejected and recorded, not blended down into a lower grade, because a rejected batch relabelled as an economy line is a relabelling rather than a rejection. And the laboratory holds release authority reporting to the promoter, since a marginal batch on a day the union order is due is exactly the decision production should not make.

7. Aflatoxin Travels into Milk, and the Test That Can Be Gamed

Two further problems concern people the mill will never meet.

☐ **AFLATOXIN B1 IN FEED BECOMES AFLATOXIN M1 IN MILK.** Maize, groundnut cake and cottonseed cake routinely carry aflatoxin produced by storage moulds, a portion of which passes through the cow into milk as M1 — a compound with limits in Indian and international food standards for good reason. The farmer cannot test for it, the cow shows nothing, the processor's panel may or may not include M1, and the person who eventually drinks it has no connection to this mill at all. It is the third-party pattern at its longest reach: three transactions removed, with every intermediate party unable to detect the problem. So **EVERY INTAKE LOT of maize and cake is tested before unloading, lots above the limit are REJECTED AND REPORTED — 186 in Year 1 rising to 412 in Year 3 — finished feed is tested again before release, and storage is managed for moisture because aflatoxin is created in the godown as readily as in the field.**

The commercial pressure here is seasonal and severe, and it is worth naming rather than glossing. In a wet harvest year a large share of the regional maize crop can fail the intake limit, so the mill faces a choice between buying at a substantial premium from further away, running below capacity, or relaxing a limit that nobody downstream will ever check. Every competitor faces the same choice in the same week, and the market price signal points the wrong way. The decision is therefore removed from the moment, per the drone and processing plans: the limit is a system parameter the laboratory applies, premium replacement buying is budgeted in advance at ₹1.86 crore, and no commercial authority in the business can vary an intake specification.

□ **AND THE PROTEIN TEST MEASURES NITROGEN, NOT PROTEIN.** Crude protein is calculated from nitrogen content, so adding urea or another non-protein nitrogen source raises the declared protein figure at a fraction of the cost of real protein — and a laboratory will confirm the bag as compliant, because the standard test cannot tell the difference. Small quantities of NPN have a legitimate place in ruminant nutrition and are not the objection; using NPN to reach a printed protein number that a farmer will read as usable protein is. So this mill **REPORTS TRUE PROTEIN AND NPN SEPARATELY** on every batch page, adds no NPN for the purpose of inflating a crude-protein claim, and states the **BYPASS PROTEIN FRACTION** as a number rather than as the word "bypass" on a sack. **WHERE THE STANDARD TEST MEASURES A PROXY RATHER THAN THE THING ITSELF, PUBLISHING THE PROXY IS NOT DISCLOSURE — PUBLISH THE COMPONENT THE PROXY CONCEALS.**

□ **AND TWO CATEGORIES OF INPUT ARE SIMPLY ABSENT FROM THIS MILL.** Mammalian meat-and-bone meal in ruminant feed is prohibited and its use anywhere on a site handling cattle feed is a cross-contamination risk that no procedure adequately manages, so it is not received at all. Antibiotic growth promoters — distinct from veterinary treatment under prescription — are not used in any formulation, because routine sub-therapeutic dosing of food animals drives resistance in a population that will never know it happened. Neither is a difficult decision on a good day; both are stated now because the difficult day is a price-competitive one, and this is where the option is foreclosed.

8. Operations Plan (buy, test, formulate, mill, publish, deliver)

Raw-material intake

- **Every lot sampled and tested before unloading** — moisture, protein, aflatoxin, adulterant screen — with the laboratory holding the accept decision.
- **Rejected lots recorded with supplier named and disposition documented**, never diverted quietly to a lower grade.
- **Supplier scoring on rejection history**, with repeat offenders removed rather than merely discounted.
- **Prohibited inputs not received at all** — no mammalian meat-and-bone meal on site, no antibiotic growth promoters in any store.

Storage

- **Moisture-controlled godowns with stack rotation**, since aflatoxin is created in storage as readily as in the field.
- **Periodic re-testing of stored grain**, because a lot that passed at intake can fail after a monsoon month.
- **Fumigation and pest control to schedule** with residue-aware chemistry and stated withholding.
- **Segregation by grade and by lot** so a formulation can be traced to the material that made it.

Formulation and milling

- **Least-cost formulation against the declared specification as a hard constraint**, never as a target to be approached.
- **NPN used only where nutritionally justified and always declared**, never to reach a crude-protein number.
- **Batch weighing verified and micro-ingredient dosing checked**, since mineral under-dosing is the least visible failure of all.
- **Grinding, mixing, conditioning and pelleting controlled**, with mixer uniformity validated rather than assumed.

Testing, publication and despatch

- **Every batch analysed before release** — crude protein, true protein, NPN, energy, fibre, moisture, minerals, aflatoxin.
- **Results published against the batch code printed on the bag**, within a stated period of despatch.
- **Retained sample stored for shelf life plus a margin**, indexed to the batch.
- **Bag weight verified against declaration** and dealer margin disclosed to the farmer on the price list.

The operational hinge is the morning a maize lot tests marginally over the aflatoxin limit with the union's monthly order due and the silo low. The supplier is a long relationship, the excess is small, the alternative is buying at a premium four hundred kilometres away, and — decisively — nobody downstream will ever detect it: not the farmer, not the cow, not the processor, not the consumer. So the limit is a system parameter applied by the laboratory rather than a judgement exercised by a manager, premium replacement buying is budgeted before the season starts, and no commercial authority in the business can vary an intake specification for a day.

9. BIS, Feed Safety & Operating Compliance (India)

- **Company & tax** — Private Limited, PAN/TAN, GST, factory licence, product-liability insurance.
- **Feed standards** — BIS specifications for compound cattle feed on minimum crude protein and energy, maximum fibre and moisture, and aflatoxin limits; **an aflatoxin limit in feed is a food-safety rule about milk rather than an animal-nutrition preference, because the contaminant transfers.**
- **Representation & weights** — the printed analysis is a specification a buyer relies on, and Legal Metrology governs net weight; **a bag declaring 20% crude protein and containing 16% is a misdescribed good, whatever its nitrogen reads.**
- **Prohibited inputs** — mammalian meat-and-bone meal banned in ruminant feed; antibiotic growth promoters restricted and moving toward prohibition; hormone-type promoters with no lawful place in a dairy ration.
- **Premises & safety** — factory, boiler and fire compliance in a dusty, explosion-risk milling environment; dust extraction and worker respiratory protection.
- **Environment** — state pollution-control consent for dust, boiler emissions and effluent; grain fumigation and storage rules.
- **Workforce** — EPF/ESI, POSH, confined-space and machinery-guarding discipline, and hearing protection.

10. Organisation & Manpower Plan

Function	Yr 1	Yr 3	Notes
Promoter / managing director	1	1	Owns the intake limits and the publication policy
Quality assurance & laboratory	7	15	Holds intake rejection and batch release; reports to the promoter
Animal nutritionist & formulation	2	4	Specification is a hard constraint, not a target
Production & milling operators	22	46	Two shifts; grinding, mixing, pelleting, bagging
Raw-material procurement	6	12	Cannot overrule a laboratory rejection
Warehousing, storage & logistics	10	22	Moisture control, rotation, re-testing
Sales, dealer network & field advisory	10	26	Field advisors help farmers compute cost per litre

Engineering, maintenance & admin	8	17	Boiler, dust extraction, machinery
Total	66	143	Employed; laboratory salaried without volume-linked pay

Fifteen people in quality and four in nutrition at Year 3 is unusually heavy for an Indian feed mill of this size, and the reporting line is the point rather than the number. A laboratory that reports to production will, within two seasons, find that a marginal aflatoxin result is acceptable on a busy day; one that reports to the promoter and is paid without a volume component will not. The field-advisory team is the other unusual line: twenty-six people whose job is partly to help a farmer calculate his own cost per litre of milk, which is the only calculation that makes compound feed look like value rather than expense — and it is a calculation no competitor helps him do, because for many of them the answer would be inconvenient.

11. Implementation Timeline & Milestones

Phase	Window	Milestones
Land, approvals & build	Month 0-9	Incorporation, factory licence, pollution consent, mill construction, boiler and dust extraction
Plant commissioning	Month 7-13	Grinding, mixing, conditioning, pelleting and bagging lines; mixer uniformity validated
Laboratory & publication	Month 8-13	Aflatoxin, protein and NPN capability; batch coding; publication page; retained-sample store
Channel build	Month 11-22	Union and organised-farm contracts; dealer network with disclosed margins
Premium range	Month 16-28	Bypass protein and fat, calf starter, mineral mixtures; field advisory scaled
Utilisation & scale	Month 24-36	Utilisation to 71%, second shift, storage capacity for seasonal buying

Training and competence

- **Laboratory method certification** with inter-analyst comparison, because a published result must not depend on who ran it.
- **Sampling discipline at intake** — a wrong sample makes every downstream number meaningless, and it is the step most often rushed.
- **Storage and moisture management**, since aflatoxin is created in the godown and the godown is nobody's priority.
- **Field advisory numeracy** — helping a farmer compute cost per litre rather than cost per bag, which is the entire selling argument.

12. Financial Plan (Illustrative)

All figures are illustrative model assumptions, not forecasts or guarantees. They exist to show the drivers of a compound-feed P&L and how the intake and publication controls move them. Every input is editable. **The defining feature of this model is that raw material is 78% of revenue and moves violently — so this is a procurement business with a mill attached, and utilisation and buying discipline decide the return rather than price.**

12.1 Project cost & funding

Item	₹ lakh	Notes
Land, civil works & mill building	180	Dust-managed, fire-compliant milling environment
Milling plant — grinding, mixing, conditioning, pelleting	340	Mixer uniformity is the quality foundation
Bagging, weighing & batch-coding lines	86	Batch code is what makes publication possible
Laboratory — aflatoxin, protein, NPN, minerals	92	Capability most Indian mills of this size do not hold
Raw-material storage — silos and moisture-controlled godowns	160	Seasonal buying capacity and aflatoxin prevention
Boiler, dust extraction, power & utilities	120	Certified pressure vessels; explosion-risk management
Retained-sample store, weighbridge & systems	42	Publication platform and traceability
Working capital & contingency	160	Seasonal grain buying and dealer credit
Total project cost	980	₹340L investor + ₹260L WC facility + ₹200L promoter + ₹180L term loan

12.2 Operating metrics

Metric	Yr 1	Yr 2	Yr 3
Intake lots tested for aflatoxin before unloading / lots REJECTED / rejected lots diverted to a lower grade	100% / 186 / NIL	100% / 298 / NIL	100% / 412 / NIL
Batch analysis published against the bag's batch code / retained sample held per batch / finished feed above aflatoxin limit	100% / 100% / NIL	100% / 100% / NIL	100% / 100% / NIL
True protein and NPN reported separately / NPN added to inflate a crude-protein claim / bypass fraction stated as a number	100% / NIL / 100%	100% / NIL / 100%	100% / NIL / 100%
Mammalian meat-and-bone meal received / antibiotic growth promoters used / hormone-type promoters used	NIL / NIL / NIL	NIL / NIL / NIL	NIL / NIL / NIL
Batches rejected on specification / blended down into an economy line / farmer re-test requests honoured	94 / NIL / 100%	148 / NIL / 100%	206 / NIL / 100%
Capacity utilisation / tonnes sold / dealer margin disclosed on price list / contribution per tonne	38% / 16,400 / 100% / ₹1,340	57% / 29,800 / 100% / ₹1,720	71% / 47,200 / 100% / ₹2,080

Row one is the gate this business is built on: 412 lots rejected in Year 3 against 186 in Year 1, rising with volume, with NIL diverted to a lower grade. A mill that rejects a maize lot for aflatoxin and then quietly uses it in an economy feed has not rejected anything — it has re-priced a contaminant, and the cow eating the economy feed produces the same milk. Row five carries the same logic for finished batches: 206 rejected on specification with none blended down. And "farmer re-test requests honoured: 100%" is the line that gives the retained sample its meaning, since a retained sample nobody may draw on is a storage cost rather than a control.

12.3 Revenue build

Stream	Yr 1 (₹L)	Yr 2 (₹L)	Yr 3 (₹L)	Driver
Compound cattle feed — union & cooperative supply	1,180	2,180	3,440	Volume anchor; specification-driven buying
Compound cattle feed — dealer network	840	1,520	2,520	Smallholder reach; credit-intensive
Bypass protein & bypass fat supplements	340	720	1,320	Premium; fastest growth; fraction stated as a number
Mineral mixtures & specialty additives	220	420	720	Best margin; under-dosing is the least visible failure
Calf starter & heifer feed	140	260	440	Long-cycle sale; builds herd relationships
Custom formulation for organised farms	80	100	160	Toll milling; utilisation filler
Total revenue	2,800	5,200	8,600	Illustrative

12.4 P&L summary

Line	Yr 1 (₹L)	Yr 2 (₹L)	Yr 3 (₹L)
Revenue	2,800	5,200	8,600
Raw material — grain, cake, bran, molasses, minerals	(2,244)	(4,108)	(6,708)
Packaging & bagging material	(112)	(198)	(318)
Gross profit	444	894	1,574
Production & engineering employee cost	(138)	(212)	(322)
Quality, laboratory, publication & retained samples	(52)	(64)	(78)
Intake rejection cost — premium replacement buying & idle hours	(84)	(132)	(186)
Power, fuel, steam & utilities	(146)	(238)	(372)
Warehousing, storage & freight	(118)	(196)	(312)
Sales, dealer support & field advisory	(96)	(164)	(268)
Admin, insurance, professional & other	(72)	(112)	(174)
EBITDA	(262)	(224)	(138)
Depreciation & amortisation	(88)	(96)	(104)
Finance cost	(74)	(98)	(126)
Other income — toll milling, by-product and screening sales, grain trading, storage hire (disclosed)	318	508	827
PBT	(106)	90	459
Tax	22	(22)	(115)

PAT	(84)	68	344
Net margin	(3.0%)	1.3%	4.0%
ROCE	(10.6%)	13.4%	29.8%

Three lines need reading together and honestly. Raw material at ₹67.08 crore is 78% of revenue and moves with the monsoon, which is why net margin is 4.0% and ROCE rather than margin is the right measure. INTAKE REJECTION COST at ₹1.86 crore is the price of the aflatoxin gate being real and RISES with volume, as it must — a mill whose rejection cost is nil has a limit nobody applies. And operating EBITDA is negative at Year 3, with ₹8.27 crore of toll milling, by-product sales, grain trading and storage hire carrying the result: disclosed separately per the library's rule because a feed mill that is really a grain-trading business with a pelleting line should say so, and because those lines are the ones a lender will discover in year four if nobody names them now.

12.5 Contribution per tonne, by formulation

Product (Yr 3)	Tonnes	Realisation / tonne	Contribution / tonne	Note
Compound feed — union supply	21,500	₹16,000	₹1,480	Volume anchor; thinnest margin
Compound feed — dealer	15,200	₹16,580	₹1,760	Higher realisation, credit cost attached
Bypass protein & fat	5,400	₹24,440	₹4,120	Premium; the fraction is the claim
Mineral mixtures	2,600	₹27,690	₹5,840	Best margin; under-dosing least visible
Calf starter & heifer feed	2,500	₹17,600	₹2,240	Long-cycle; relationship builder
Blended	47,200	₹18,220	₹2,080	Describes none of the rows above it

The mineral-mixture row deserves particular attention because it combines the best margin in the mill with the least detectable failure in the category. A mineral mixture under-dosed by a third costs the manufacturer far less, is invisible to every test a farmer could conceive of, and produces reproductive failure months later that will be blamed on the bull or the inseminator. High margin plus zero detectability is precisely the combination this library flags wherever it appears — so mineral dosing is verified by assay on every batch and published like everything else, and the fact that it is also the most profitable line is exactly why.

12.6 Break-even & sensitivity

Scenario	Yr 3 revenue	Yr 3 PAT	Comment
Base	₹86.0cr	₹3.44cr	As modelled
Raw-material cost up 8% unrecovered	₹86.0cr	₹90L	78% of revenue; the dominant sensitivity
Other income down 30%	₹86.0cr	₹1.58cr	Why it is disclosed separately
Utilisation 71% → 56%	₹67.8cr	₹1.12cr	Fixed-cost mill; the second sensitivity
Bad monsoon — rejection cost doubles	₹84.2cr	₹1.86cr	The aflatoxin gate's worst year, budgeted for

Premium mix down 5 points	₹82.4cr	₹2.31cr	Bypass and minerals carry the contribution
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13. Funding Requirement & Bankability

Source	₹ lakh	Terms (indicative)
Investor equity	340	Growth capital; utilisation and quality covenants
Working-capital facility	260	Seasonal grain buying and dealer credit
Promoter contribution	200	Cash and land
Term loan	180	Mill, storage and laboratory; 7-8 years
Total	980	Illustrative structure

The bankability case rests on union contracts and on inventory that is genuinely realisable, and a lender should test the seasonal working-capital cycle hardest. A feed mill's grain position is both its largest asset and its largest risk — bought in a three-month window, held for a year, and capable of failing an aflatoxin test while sitting in the godown. Which is why the moisture-controlled storage and the re-testing regime are collateral protection as much as food safety: a lender's security in this business is grain that can still be used, and stock that has deteriorated in storage is worth its scrap value. The same records that protect the cow protect the security, which is the durability test in its most literal form.

- **Use of funds** — 35% milling plant, 18% land and building, 16% raw-material storage, 16% working capital, 12% utilities and dust extraction, balance laboratory, bagging and systems.
- **Repayment** — term loan from Year 3 cash flow with a moratorium through commissioning and ramp; working-capital facility drawn for the seasonal grain build and cleared through the year.
- **Investor exit** — strategic sale to a national feed or agri-inputs group, a dairy processor seeking captive nutrition supply, or a promoter buyback once utilisation matures.

14. Risk Analysis & Mitigation

Risk	Impact	Mitigation
Under-formulation against the printed declaration	Invisible for six to ten weeks, then visible as falling yield and poor body condition — and attributed to the cow, the season or the weather rather than to the sack, because the farmer has no laboratory and cannot isolate feed as the variable	EVERY BATCH ANALYSIS PUBLISHED AGAINST THE BATCH CODE PRINTED ON THE BAG — crude protein, true protein, NPN, energy, fibre, moisture, minerals and aflatoxin — reachable by a farmer, his son, his dealer or his union technician; A RETAINED SAMPLE of every batch held for shelf life plus a margin with re-test requests honoured at 100%, since a retained sample nobody may draw on is a storage cost rather than a control; specification treated as a HARD CONSTRAINT in least-cost formulation rather than a target; and the laboratory holding release authority reporting to the promoter

Aflatoxin passing through into milk as M1	Maize and cake carry aflatoxin B1, a portion of which transfers to milk — so this mill's intake gate decides whether a child two districts away drinks a carcinogen, with the farmer, the cow, the processor and the consumer all unable to detect it	EVERY intake lot tested before unloading with the laboratory holding the accept decision; 412 lots rejected in Year 3, rising with volume, with NIL diverted to a lower grade — because a rejected lot used in an economy feed has not been rejected, it has been re-priced, and the cow eating the economy feed produces the same milk; finished feed re-tested before release; moisture-controlled storage with periodic re-testing, since aflatoxin is created in the godown as readily as in the field
The wet-harvest morning when the limit is inconvenient	A large share of the regional crop can fail in a bad year, the supplier is a long relationship, the excess is small, and decisively NOBODY DOWNSTREAM WILL EVER DETECT IT — while every competitor faces the same choice in the same week	The decision is removed from the moment: the limit is a SYSTEM PARAMETER applied by the laboratory rather than a judgement exercised by a manager; premium replacement buying BUDGETED IN ADVANCE at ₹1.86 crore and modelled at double in a bad monsoon; no commercial authority in the business can vary an intake specification for a day; and supplier scoring removes repeat offenders rather than discounting them
NPN used to game the crude-protein test	Crude protein is calculated from nitrogen, so urea raises the declared figure at a fraction of the cost of real protein — and a laboratory will confirm the bag as compliant because the standard test cannot tell the difference	TRUE PROTEIN AND NPN REPORTED SEPARATELY on every batch page; no NPN added for the purpose of inflating a crude-protein claim; bypass protein stated as a NUMBER rather than as the word "bypass" on a sack. Small quantities of NPN have a legitimate nutritional place and are not the objection — using NPN to reach a printed number a farmer will read as usable protein is. Costs ₹2.40 crore of Year-3 gross margin against competitors who do it
Mineral under-dosing	Best margin in the mill and the least detectable failure in the category — invisible to any test a farmer could conceive of, producing reproductive failure months later blamed on the bull or the inseminator	Micro-ingredient dosing verified by assay on every batch and published like everything else; mixer uniformity validated rather than assumed; and the combination of high margin with zero detectability treated as a standing warning flag rather than as an opportunity
Raw-material price volatility	78% of revenue; an 8% unrecovered rise removes three-quarters of Year-3 profit	Seasonal buying into moisture-controlled storage sized for it; least-cost formulation reformulated weekly against the declared specification as a hard constraint; forward positions on core ingredients; premium mix grown so contribution is less exposed to commodity feed; and pricing reviewed on a stated cycle so pass-through lag is bounded
Dealer credit and channel risk	Feed moves on credit against the next milk payment and the mill funds it; a dealer failure takes both the receivable and the village	Credit limits set and released by finance rather than by sales; dealer margins disclosed on the price list so a farmer knows what his advisor earns, per the library's commission rule; union and organised-farm channels grown to 40% of revenue where payment is contractual; and receivable ageing reviewed weekly rather than monthly
Dust explosion, boiler and machinery injury	A grain mill is a genuinely hazardous workplace and the risks are chronic rather than dramatic	Dust extraction designed in rather than retrofitted, with explosion venting and ignition-source control; boiler and pressure-vessel certification current; machinery guarding, lockout discipline and confined-space procedure; hearing and respiratory protection issued and enforced; and incidents recorded and investigated rather than absorbed

15. SWOT Analysis

Strengths • Every intake lot tested for aflatoxin; 412 rejected, none downgraded • Batch analysis published against the code on the bag • True protein and NPN reported separately • Retained samples with re-test requests honoured • No meat-and-bone meal, no growth promoters, ever	Weaknesses • Costs more per tonne than mills that use NPN and skip testing • Rejects raw material competitors will happily use • Operating EBITDA negative; ancillary income carries the result • Raw material is 78% of revenue and volatile
Opportunities • Low compound-feed penetration with rising yields • Union and organised-farm buyers who can verify a specification • Bypass protein and minerals at four to six times commodity contribution • Field advisory converting cost-per-bag thinking to cost-per-litre • Toll milling and storage hire monetising capacity	Threats • A bad monsoon failing a large share of the regional crop • Commodity price spikes with pass-through lag • Price competition from mills that game the protein test • Dealer or union channel concentration

16. Recommended AiSevak Tools for This Business

- **Intake test & rejection register** — lot results, accept decision held by the laboratory, rejections with supplier named and disposition documented.
- **Batch analysis & publication system** — results tied to the bag's batch code and published where a farmer can reach them.
- **Retained-sample register** — sample per batch, storage location, re-test requests and outcomes.
- **Formulation & specification guard** — least-cost formulation with the declared specification as a hard constraint.
- **Contribution-per-tonne dashboard** — by formulation, never blended.
- **Dealer credit & margin register** — limits, ageing, and disclosed margins on the price list.
- **Compliance calendar** — BIS, pollution consent, boiler certification, fumigation records and storage re-testing.

17. Key Assumptions & Notes

- **All financials are illustrative model assumptions, not forecasts, projections or guarantees.** Revenue, tonnage, utilisation, raw-material cost and headcount are editable inputs; actual outcomes depend on procurement region, monsoon, channel mix and commodity prices. Figures are in Indian rupees.
- **The central integrity finding is that the farmer cannot analyse the feed and the cow cannot refuse it.** Compound feed is sold on a printed protein and energy claim a smallholder has no means to verify, under-formulation is invisible for six to ten weeks, and when it shows as falling yield it is attributed to the cow, the season or the weather.
Mineral under-dosing takes months and gets blamed on the bull. Aflatoxin is never detected at the farm at all — it simply leaves in the milk. In every case the consequence lands somewhere other than on the mill, and in most cases it lands on the animal, so a feed mill operates in the most permissive information environment in this library: cheating is cheap, effectively undetectable, and reliably attributed to

somebody else. The only honest response is to remove the information asymmetry rather than to promise not to exploit it.

- **So every batch analysis is published against the batch code printed on the bag** — crude protein, true protein, NPN, metabolisable energy, crude fibre, moisture, calcium, phosphorus and aflatoxin — reachable by a farmer, his son, his dealer or his union's technician; and a sample of every batch is retained for shelf life plus a margin so a disputed bag can be re-tested rather than argued with, **with re-test requests honoured at 100%, because a retained sample nobody may draw on is a storage cost rather than a control.** Batches outside specification are rejected and recorded, never blended down into an economy line, since a rejected batch relabelled is a relabelling rather than a rejection.
- **Aflatoxin B1 in feed becomes aflatoxin M1 in milk, three transactions away.** Maize, groundnut cake and cottonseed cake routinely carry it; the farmer cannot test, the cow shows nothing, the processor's panel may not include M1, and the person who drinks it has no connection to this mill. **It is the third-party pattern at its longest reach, with every intermediate party unable to detect the problem. Every intake lot is tested before unloading, 412 lots were rejected in Year 3 with NIL diverted to a lower grade — because a rejected lot used in an economy feed has not been rejected, it has been re-priced, and the cow eating the economy feed produces the same milk.**
- **The pressure is seasonal, severe, and named rather than glossed.** In a wet harvest a large share of the regional maize crop can fail the limit, so the mill chooses between premium buying from four hundred kilometres away, running below capacity, or relaxing a limit nobody downstream will ever check — and every competitor faces the same choice in the same week, with the price signal pointing the wrong way. **So the decision is removed from the moment: the limit is a system parameter the laboratory applies, premium replacement buying is budgeted in advance at ₹1.86 crore and modelled at double in a bad monsoon, and no commercial authority in the business can vary an intake specification for a day.**
- **The standard test measures nitrogen, not protein, which is why two numbers are published.** Crude protein is calculated from nitrogen content, so urea or other NPN raises the declared figure at a fraction of the cost of real protein — and a laboratory will certify the bag compliant, because the test cannot tell the difference. **Small quantities of NPN have a legitimate place in ruminant nutrition and are not the objection; using NPN to reach a printed number a farmer will read as usable protein is. TRUE PROTEIN AND NPN ARE REPORTED SEPARATELY on every batch page and the bypass fraction is stated as a number. The general rule: WHERE THE STANDARD TEST MEASURES A PROXY RATHER THAN THE THING ITSELF, PUBLISHING THE PROXY IS NOT DISCLOSURE — PUBLISH THE COMPONENT THE PROXY CONCEALS.**
- **Two categories of input are simply absent from the site.** Mammalian meat-and-bone meal is prohibited in ruminant feed and its presence anywhere on a cattle-feed site is a cross-contamination risk no procedure adequately manages, so it is not received at all; and antibiotic growth promoters — distinct from veterinary treatment under prescription — are used in no formulation, because routine sub-therapeutic dosing drives resistance in a population that will never know it happened. **Neither is a difficult decision on a good day; both are stated now because the difficult day is a price-competitive one, and this is where the option is foreclosed.**
- **The mineral mixture combines the best margin in the mill with the least detectable failure in the category** — under-dosed by a third it costs far less, is invisible to any test a farmer could conceive of, and produces reproductive failure months later blamed on the bull or the inseminator. **High margin plus zero detectability is precisely the combination this library flags wherever it appears, so mineral dosing is assayed on every batch and published like everything else — and the fact that it is also the most profitable line is exactly why.** Contribution is reported per tonne BY FORMULATION and never blended: ₹1,480 on union commodity feed against ₹5,840 on minerals, reaching a blended ₹2,080 that describes neither.
- **The scepticism this mill is selling against is earned rather than ignorant.** "It did not work last time" is often accurate — the bag was under-formulated and nobody could tell — and "all companies are the same" is a rational

conclusion when none of them can be verified. **A mill that makes its analysis checkable is not overcoming a prejudice; it is answering a legitimate complaint the industry has spent thirty years earning. The cost of doing so is stated: ₹1.86 crore of rejection cost, ₹2.40 crore of gross margin forgone by declining NPN, ₹78 lakh of testing and publication — against ₹34.40 crore of union and organised-farm revenue at better realisation and better terms. An investor should also be told plainly that operating EBITDA is negative at Year 3 and ₹8.27 crore of toll milling, by-product sales, grain trading and storage hire carries the result, because a feed mill that is really a grain-trading business with a pelleting line should say so.**

- **Compliance runs through feed standards, representation and a hazardous workplace.** BIS specifications for compound cattle feed on minimum crude protein and energy, maximum fibre and moisture and aflatoxin limits, where a feed aflatoxin limit is a food-safety rule about milk rather than a nutrition preference because the contaminant transfers; the printed analysis as a specification a buyer relies on, with Legal Metrology on net weight and consumer-protection provisions on composition, since a bag declaring 20% crude protein and containing 16% is a misdescribed good whatever its nitrogen reads; the prohibition on mammalian meat-and-bone meal in ruminant feed and restrictions on antibiotic growth promoters; factory, boiler and fire compliance in a dusty explosion-risk environment with dust extraction and respiratory protection; state pollution-control consent; grain storage and fumigation rules; GST; and EPF/ESI and POSH. Professional advice should be taken on the specific standards, label declarations and channel agreements.

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