Yield Loss Forecasting

The advanced play. This is the most sophisticated use case in the series. It builds on the data habits from the others and rewards operations that have been testing consistently for several cycles. If you're just getting started, Floor Map and Strain Tracking pay off immediately—come back to this one once you have a few cycles of history behind you.

The problem

Most yield forecasts are built from last season's numbers, a per-plant assumption, plus some modifications based on the experiences of the person preparing it. They don't reflect what's actually happening in the rooms right now. If HLVd positivity has quietly climbed in two flower rooms since last month, the forecast should already show the hit — not surprise everyone at harvest.

The cost of a bad forecast lands in two places. Commercial gets caught overselling batches the facility can't deliver. Finance builds cashflow projections that miss by a wide enough margin to matter. Meanwhile, the operations team has no ranked list telling them which rooms need intervention this week versus which can ride out the cycle. Every room feels equally urgent, so nothing gets the focused response it needs.

The workflow

Yield loss forecasting layers current pathogen data onto historical yield outcomes to produce a forward-looking view. The TUMI customer portal has the data for strain, room, growth stage, and plant ID for every cycle. The forecast is what you get when you connect those tags to actual harvest weights.

One honest note up front: harvest weight is the one input the portal doesn't collect for you—it has to come from your own post-harvest record. Everything else is already in your dashboard.

1. **Log final harvest weight** per room and per strain at the end of every cycle. This is the one data point the portal doesn't collect automatically — it has to come from the post-harvest record.
2. **Establish a clean-baseline** yield for each strain in each room type. Use cycles with low pathogen positivity as the reference point.
3. **Calculate the loss factor** for each pathogen: the historical yield impact per point of positivity. Example: HLVd at 20% positivity in a flower room correlates with a 12% weight reduction versus the clean baseline—that's your loss factor.
4. **Pull current positivity** rates by room, strain, and growth stage from the dashboard for the active cycle.
5. **Apply the loss factors** to the clean baseline to produce a room-by-room, strain-by-strain forecast for the current cycle.
6. **Rank rooms by projected loss.** The top of the list is where intervention money and labor pay back fastest.
7. **Refresh every testing cycle.** As positivity moves, the projection moves with it and the priority list re-sorts.

Forecast example

Step	Value
Clean baseline (Strain A, Flower Room 2)	1,000 g/plant equivalent
Current HLVd positivity	20%
HLVd loss factor	0.6% weight loss per point of positivity
Projected loss	20 × 0.6% = **12%**
Forecasted yield	1,000 g × (1 − 0.12) = **880 g**

Run that same math across every room and strain, then sort by total projected loss. Rooms with the highest loss should be where your next intervention dollar should go.

Treat early forecasts as directional, not precise. A model built on three or four cycles points you in the right direction; it doesn't hit the gram. Accuracy sharpens every cycle as the dataset grows. Use it to rank and prioritize long before you use it to make firm batch commitments.

Pathogens this applies to

Pathogen	How it drives yield loss	What to model
HLVd	Reduces flower weight and cannabinoid potency without killing the plant. Loss compounds over a full cycle in silence.	Percent yield reduction per infected plant, by strain. Plug into the forecast whenever positivity rises above baseline.
Fusarium	Kills plants outright at veg and early flower. Yield drops close to linearly with positive rate.	ull-plant loss factor. If 15% of a room is positive, model the room's harvest at roughly 85% of clean baseline.
Pythium	Damages roots in propagation and veg, capping final weight even on plants that survive to harvest.	Weight cap per surviving infected plant. Combine with loss rate for a two-factor room forecast.
Aspergillus	Regulatory loss risk. A positive at state-mandated testing can destroy an entire batch even if plants looked fine at harvest.	Binary risk overlay. Flag any room trending upward pre-harvest as a full-batch loss candidate in the forecast.

What it gets you

- **Forecasts that survive contact with reality.** Commercial and finance get numbers that reflect what's actually growing, not what happened last year.
- **A ranked intervention list.** Instead of every room feeling equally urgent, you know which rooms are quietly costing the most and which can wait.
- **Defensible testing spend**. When leadership asks what the pathogen testing program returns, a documented yield forecast is the answer — dollars saved by catching drops before harvest.
- **Better resource planning.** Drying capacity, labor scheduling, and cure space can be sized to the projected harvest instead of the assumed one.
- **Sharper buyer conversations.** Batch commitments made from a real forecast build trust; missed commitments made from a fake one destroy it.

What you need

- Post-harvest yield data logged consistently, by room and by strain. Without harvest weights to anchor the model, there's nothing to correlate pathogen data against.
- At least three to four cycles of paired testing and yield data before the loss factors are reliable. One cycle is a data point; four is a pattern.
- Stable SOPs across cycles being used to build the baseline. Big process changes in the middle of the reference period will distort the model.

Where to Start

Not ready to forecast yield across the entire facility? Start by picking one high-value strain in one flower room and logging its harvest weight against its pathogen history for a few cycles. That one pairing alone gives you the piece every gut-feel forecast is missing, a real loss factor tied to your own data, and only takes recording a weight at harvest. Once that loss factor is proven, expand the tracking to the rest of your lineup and build out the full forecast.

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