Strain Disease Tolerance Tracking

The problem

Every grower has opinions about which strains hold up under disease pressure and which don't. Most of those opinions live in someone's head, get passed around as folklore, and disappear when staff turns over. Meanwhile, the same susceptible strain keeps getting planted in the same problem room because no one has a clean record of how it has performed in the past.

Picking strains based on gut feel costs money. A strain that consistently picks up HLVd, Fusarium, or Pythium drags down yield, raises labor cost, and quietly seeds the next outbreak. The TUMI customer portal already collects the data needed to make this decision quantitatively. By recording the strain name on every report, the dashboard can be sorted by strain to surface which strains stay clean under pressure and which keep testing positive.

The workflow

Strain disease resistance tracking turns the customer portal into a running scorecard. Every test that gets tagged to a strain adds to that strain's history. Over time, the dashboard reveals which strains genuinely resist pressure from each pathogen and which ones don't.

1. When submitting each test, the test submitter enters the strain of the plant being sampled.
2. Run regular pathogen testing across rooms and growth stages so each strain is sampled under realistic conditions, not just when something looks wrong.
3. Open the dashboard tracker and sort by strain. The view shows positive rate and total tests, for each pathogen, per strain.
4. Compare strains side by side. Strains with consistently high yields despite disease pressure are genuine candidates for disease tolerance. One clean cycle is not enough — look for repeatable performance.
5. Rank plants to guide planting decisions. Put tolerant strains in higher-risk rooms, retire chronically susceptible strains, and protect tolerant genetics by cloning from clean mothers only.

The sample-size rule: A handful of tests is not a trend. It's tempting to condemn a strain after two positives, but low volume produces noise, not signal. Give each strain enough tests—across multiple growth cycles—before you retire it or promote it. A strain has to hold up across runs, not just a single lucky harvest.

Example scorecard

Strain	HLVd	Fusarium	Pythium	Total tests
Strain A	4%	2%	0%	120
Strain B	31%	18%	6%	115
Strain C	9%	5%	22%	98

Strain A is a clear tolerance candidate, low across the board with the volume to trust it. Strain B is a chronic underperformer worth retiring. Strain C stays clean of HLVd and Fusarium but struggles with Pythium, so it belongs anywhere except propagation-heavy or recirculating-water rooms.

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Pathogens this applies to

Pathogen	What strain-level data reveals	How to act on it
HLVd	Some strains tolerate latent HLVd infection with minimal yield impact; others collapse. Repeat testing across cycles separates true tolerance from one-off luck.	Prioritize tolerant strains for high-risk rooms. Drop strains that consistently show heavy symptom expression even at low pathogen load.
Fusarium	Strain genetics drive susceptibility to root and stem invasion. Positive rates by strain expose the most vulnerable cultivars in your lineup.	Move susceptible strains away from rooms with known fusarium history. Build a shortlist of tolerant strains for problem rooms.
Pythium	Susceptibility shows up early in the plant's life cycle. Infections early on predict downstream losses.	Choose tolerant strains for propagation-heavy operations or recirculating water systems where pythium pressure is highest.

What it gets you

- **Evidence-based strain selection.** Decisions stop relying on memory and start relying on data.
- **A leaner lineup.** Strains that consistently underperform under disease pressure get cut, freeing room and labor for genetics that hold up.
- **Better risk matching.** Susceptible strains stay out of problem rooms; tolerant strains get assigned where pressure is highest.
- **Selling point for genetics work.** A strain with a documented clean track record is more valuable to wholesale buyers and breeding programs.
- **No new tooling cost.** The dashboard tracker and strain tagging already exist. Value comes from how the data is sorted and reviewed.

What you need

- Strain field entered on every test submission.
- Enough sample volume per strain to draw meaningful conclusions — a handful of tests is not a trend.
- Multiple growth cycles of data before retiring a strain. Resistance has to hold up across runs, not just a single harvest.

Where to Start

Not ready to analyze your entire genetic library? Start by comparing just your top sellers against your worst performers. That one comparison alone can flag your biggest hidden risk, a chronically susceptible strain quietly seeding disease into the genetics you actually make money on, and only takes sorting the dashboard by strain. Once that pattern is clear, expand the analysis to the rest of your lineup and build out the full picture.

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