

Settle plates: six small mistakes that undermine your EM data

Settle plates look simple: expose, incubate, count. The method rarely fails. The way it's applied does, and the data won't tell you when.

Passive

Plates rely on gravity and room air movement, not a measured air volume.

Semi-quantitative

Counts are an estimate. Their value is in the pattern, not the single number.

Only as good as handling

Every step from media choice to incubation can change the result.

01 Using media that can't detect what's there

WHAT GOES WRONG

Non-neutralised plates used where disinfectant residues remain. Organisms land but can't grow, so the room looks cleaner than it is.

WHAT GOOD LOOKS LIKE

Neutralising media wherever residues could suppress recovery. Chosen by risk, not by cost, and justified in your CCS.

ASK YOURSELF *Can you show, for each sampling point, why that media was chosen and whether it neutralises the disinfectants you use?*

02 Labelling the lid

WHAT GOES WRONG

Lids are removed, swapped and misplaced. Once a plate loses its identity, the result is unusable and traceability can't be recovered.

WHAT GOOD LOOKS LIKE

Label the base, around the edge so colonies stay visible: location, exposure start and stop, media and operator.

ASK YOURSELF *Pick any plate in today's incubator. Could you trace it back to location, time and operator without opening the lid?*

03 Placing plates where it's convenient

WHAT GOES WRONG

Under a vent or LAF unit, beside a door, tucked against a wall, or moved between sessions. The data stops describing the room.

WHAT GOOD LOOKS LIKE

Work height, close to critical operations, away from direct airflow, and the same spot every time so trends mean something.

ASK YOURSELF *Is every settle plate location on a drawing, with a written reason it sits where it does?*

04 Over-exposing, then extrapolating

WHAT GOES WRONG

Plates left out beyond their validated window, or a 1-hour count multiplied up to 4 hours. Contamination is event-based, not linear.

WHAT GOOD LOOKS LIKE

Exposure times validated by recovery studies (typically up to 4 hours in Grade A/B), exact times recorded, actual counts only.

ASK YOURSELF *Do your records show actual start and stop times for every plate, and is your exposure time backed by a recovery study?*

05 Accepting dried-out plates

WHAT GOES WRONG

Shrinkage, cracking and a hardened, leathery surface. Particles bounce off, and a zero count no longer means a clean room.

WHAT GOOD LOOKS LIKE

Defined acceptance criteria. Invalidate severe desiccation, document every decision, and investigate when it repeats.

ASK YOURSELF *Is there a written rule for when a dried plate is rejected, and when did desiccation last trigger an investigation?*

06 Losing control after exposure

WHAT GOES WRONG

Plates waiting hours before incubation, stacked, tilted, or crammed into an incubator with a fixed fan.

WHAT GOOD LOOKS LIKE

A defined transit window, upright transport, inverted incubation, no overcrowding, and a mapped incubator.

ASK YOURSELF *How long do plates actually wait between exposure and incubation, and has your incubator been mapped loaded?*

The thread running through all six

Trending only works if every plate is handled the same way, every time. Small inconsistencies don't show up as failures. They show up as a cleanroom that looks cleaner than it is.

THE FULL GUIDE · COMING TO THE SUBCULTURE

The incubation sequence debate · grading desiccation severity · when to accept and when to invalidate · what invalidation does to your trending · transport and incubator protocol · technical glossary

Need help now? A Readiness Review covers your EM programme against Annex 1. hello@mozeka.co.uk



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21 years in pharmaceutical microbiology and quality. She has run QC microbiology for a global biologics CDMO, set up the QC laboratories for a new cell therapy manufacturing site, and teaches pharmaceutical microbiology to aspiring QPs. Her published research on agar desiccation is why mistake 05 is in this guide.

With Blessing Fubara. General guidance only: exposure times, media and acceptance criteria must be justified by your own risk assessment and validation.