



From Data to Impact

Yield Optimization in Biologics Manufacturing

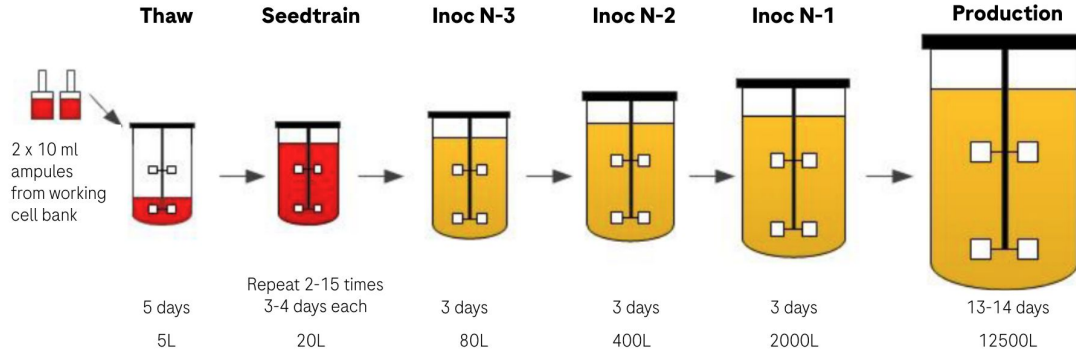
Alexandre Mösching, Statistician at Roche

Contributors:

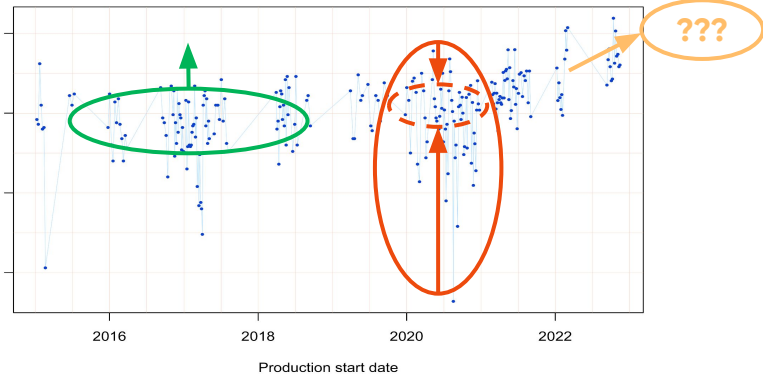
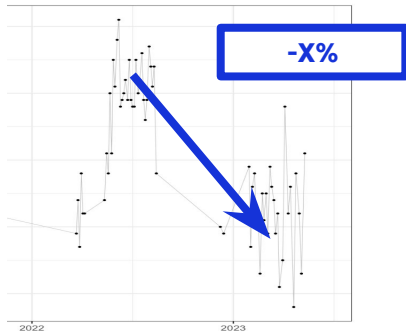
Ilmari Ahonen, Yiming Peng, Christian Schmid, Yang Tang

Monoclonal antibody drug substance manufacturing

A complex process which requires close monitoring and data-driven decision making



Optimize the yield



Ensure sustained drug access for patients

PCV and titer prediction models on

For process optimization

Select batch to view recommendation detail. [Select Batch](#)

Batch ID

Select Model Initial Model Later Model Both Models

	Recommended Sample Time	Sample Region Start	Sample Region End	Max Sample Time
Initial Prediction	August 31, 2024, 06:45 Duration: 71 hours	August 31, 2024, 03:45 Duration: 68 hours	August 31, 2024, 10:45 Duration: 75 hours	September 1, 2024, 02:52 Duration: 91 hours
Final Prediction	August 31, 2024, 04:45 Duration: 69 hours	August 31, 2024, 00:45 Duration: 65 hours	August 31, 2024, 07:45 Duration: 72 hours	September 1, 2024, 02:52 Duration: 91 hours

Predicted PCV for Both Models

Legend:

- PCV prediction for Initial Model
- 95% Prediction Band
- 75% Prediction Band
- PCV prediction for Later Model
- 95% Prediction Band
- 75% Prediction Band
- Max Sample Time
- Recommended PCV
- Now: September 10, 2024, 10:09

Recommendations

Batch ID

Passage ID	Started at	Number of batches	Last transfer time	Maximum cultivation duration / cell age
Batch ID	Date	N	Date	X days
Batch ID	Date	N	Date	X days

1m 6m YTD 1y all

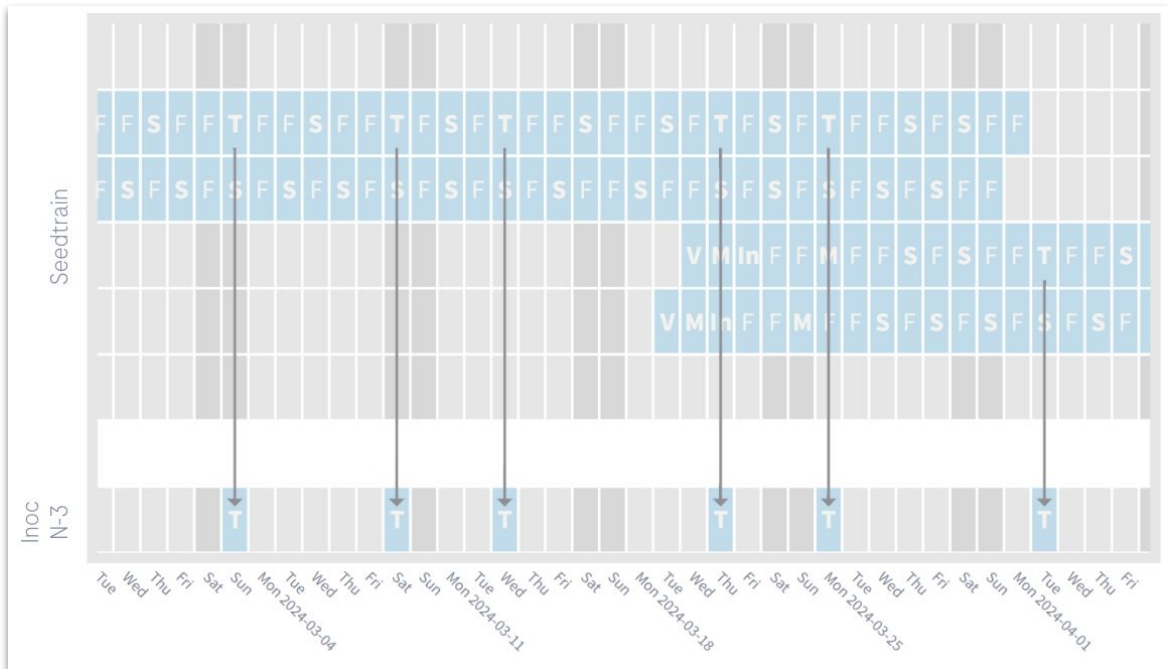
Legend:

- Titer Prediction:Batch ID
- 95% Prediction Band
- 75% Prediction Band
- Titer Prediction:Batch ID
- 95% Prediction Band
- 75% Prediction Band
- Threshold: X
- Today (September 10, 2024, 10:34)

Production plan scheduling tool on



For process optimization



Doing now what patients need next