



# DATA ANALYTICS FOR FORMULATION 4.0

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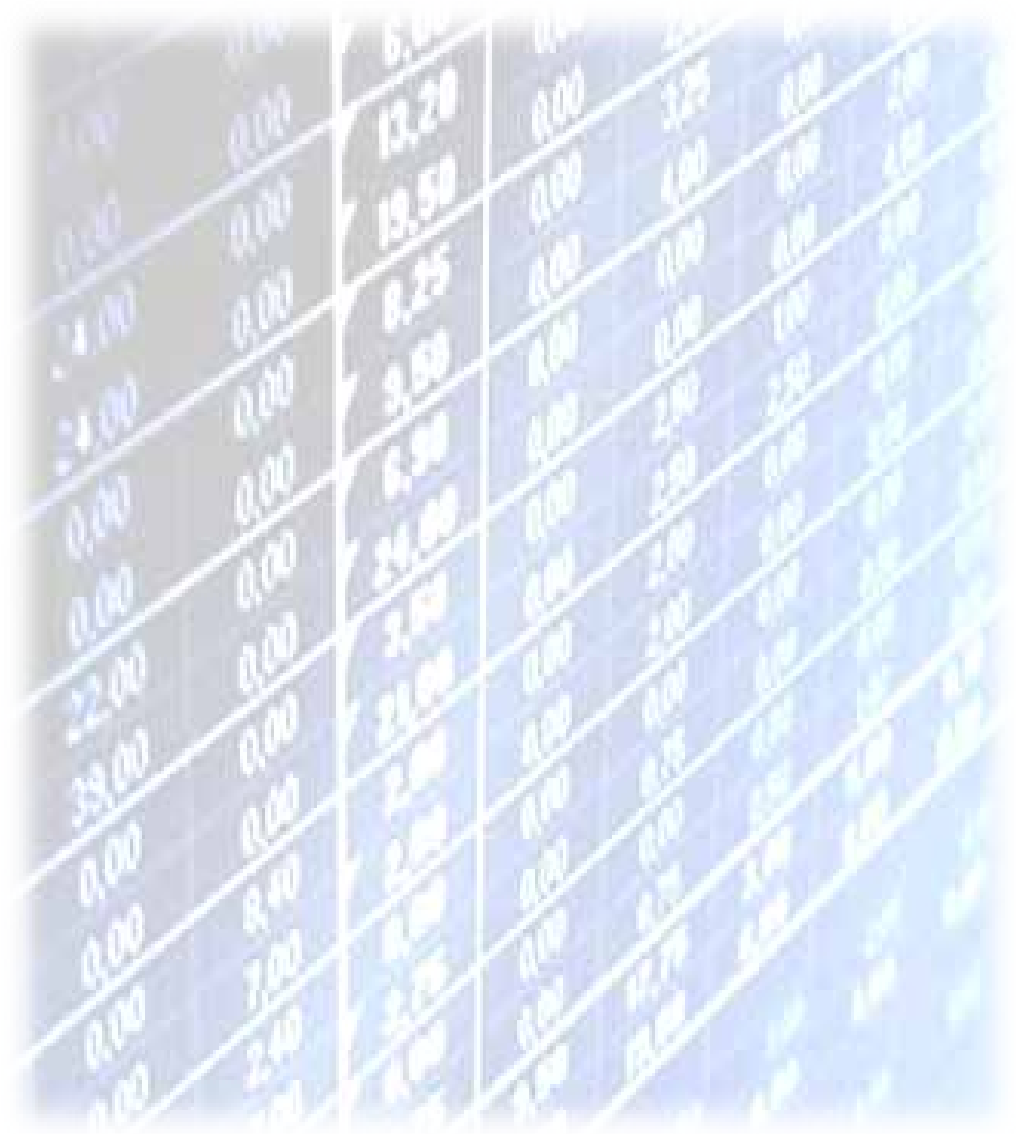
# FORMULATION 1.0, 2.0, 3.0



<https://en.wikipedia.org/wiki/Apothecary>

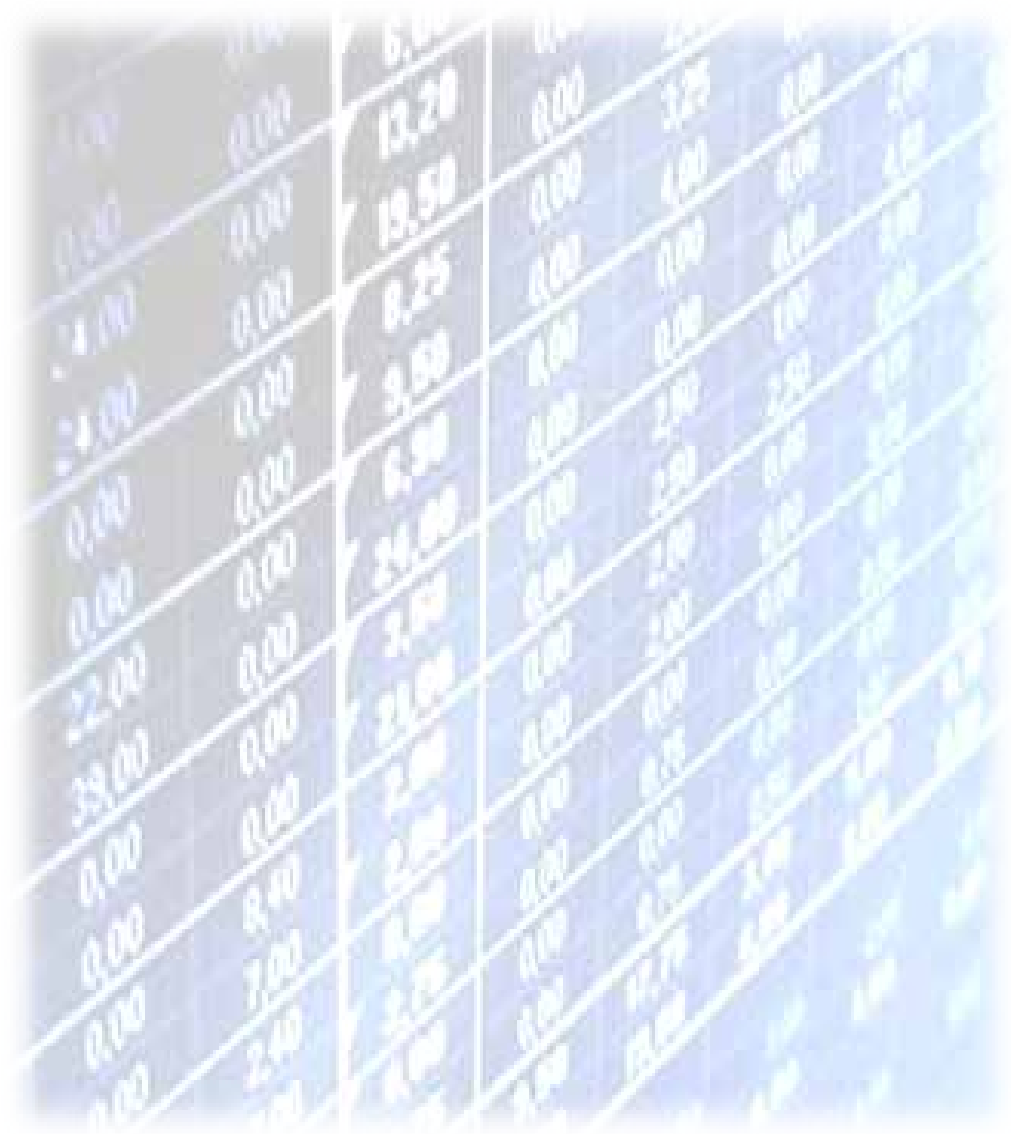
## FORMULATION 4.0

- More capability = better science?
- Formulation data trends:
  - § More diverse
  - § More complex
  - § More of it
  - § More often



# DO FORMULATION CHEMISTS NEED TO BECOME DATA SCIENTISTS?

- § Statistics
- § Data management
- § Programming
- § Visualisation
- § Soft skills
- § ...and formulation chemistry!



## SOLUTION

- Empower scientists to get maximum value from their data
- Power, Speed, Ease-of-Use, Confidence
- Actionable Insights



▶ SUCCESS STORY

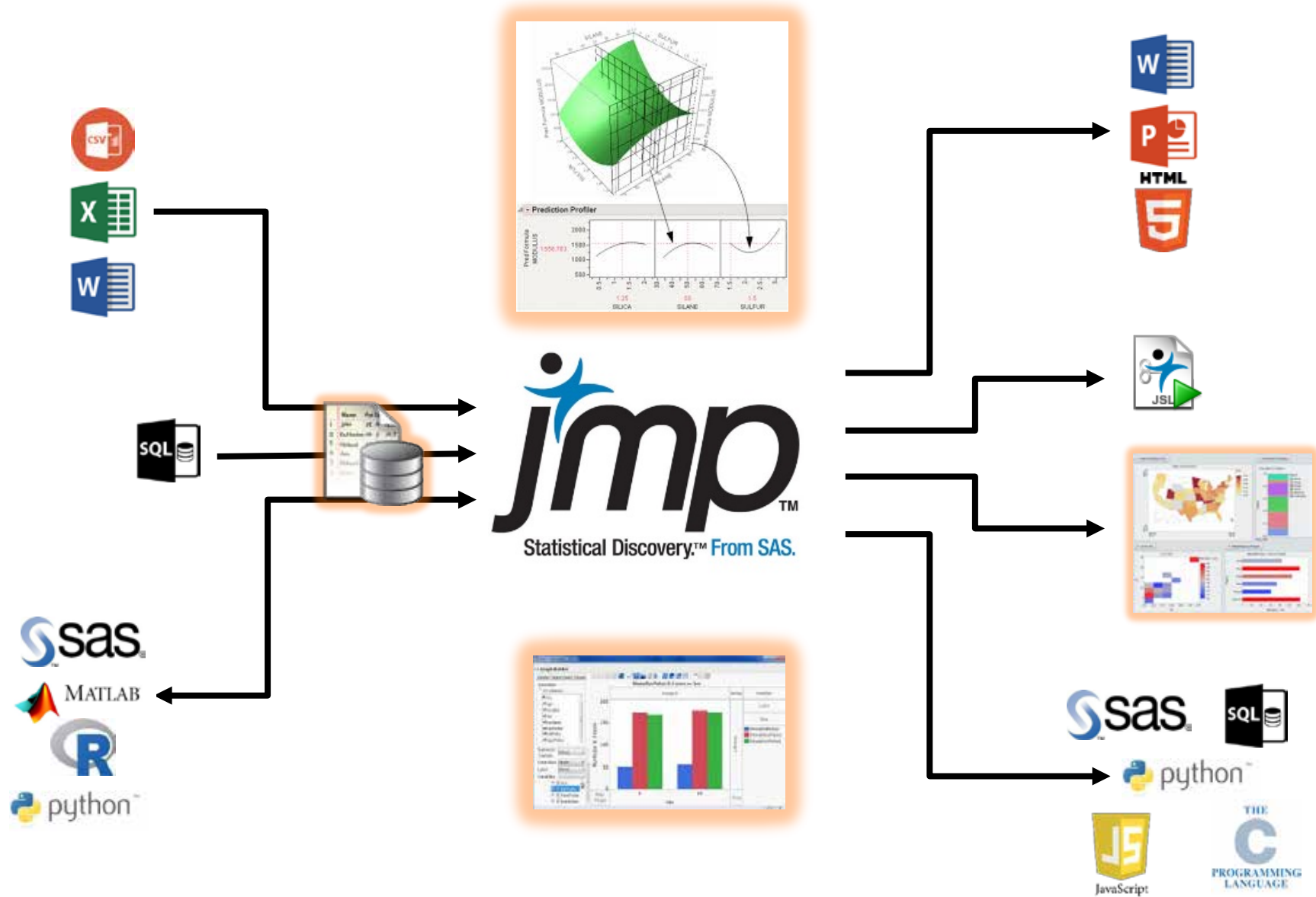
*jmp*

# Scientists use JMP<sup>®</sup> to harmonize advanced biotechnology and robotics with traditional approaches to agriculture

**SYNGENTA**

Scientists at Syngenta deploy analytical decision making strategies, from design of experiments to quality control and process reliability. They use JMP to build compelling models, thereby gaining buy-in from local managers formerly reliant on intuition-based reasoning.

[jmp.com/syngenta](https://jmp.com/syngenta)



### Local Data Filter

Clear Favorites

24 matching rows

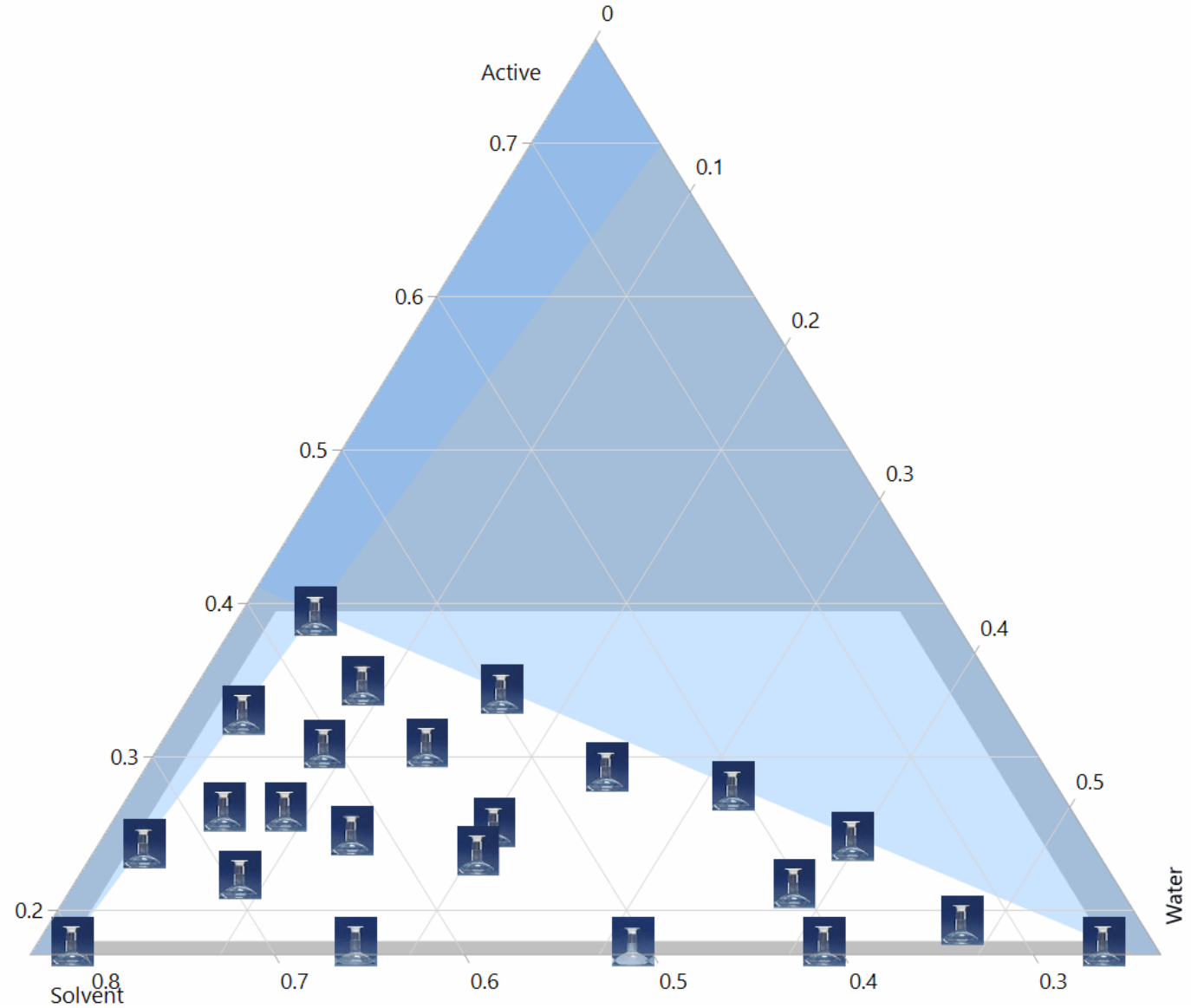
Inverse

T (6)

20 30 40 50 60 70

AND OR

### Ternary Plot

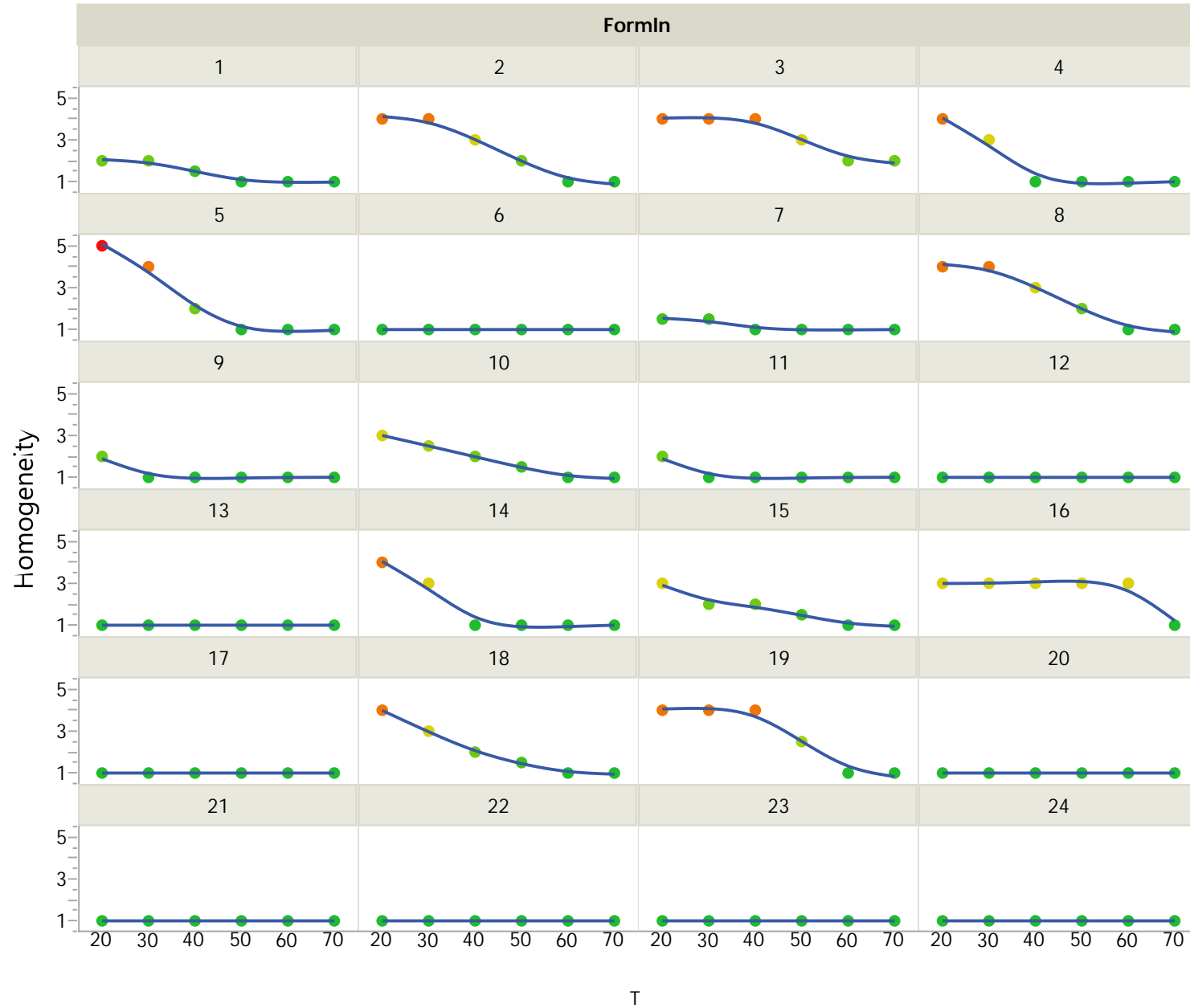


## CASE STUDY

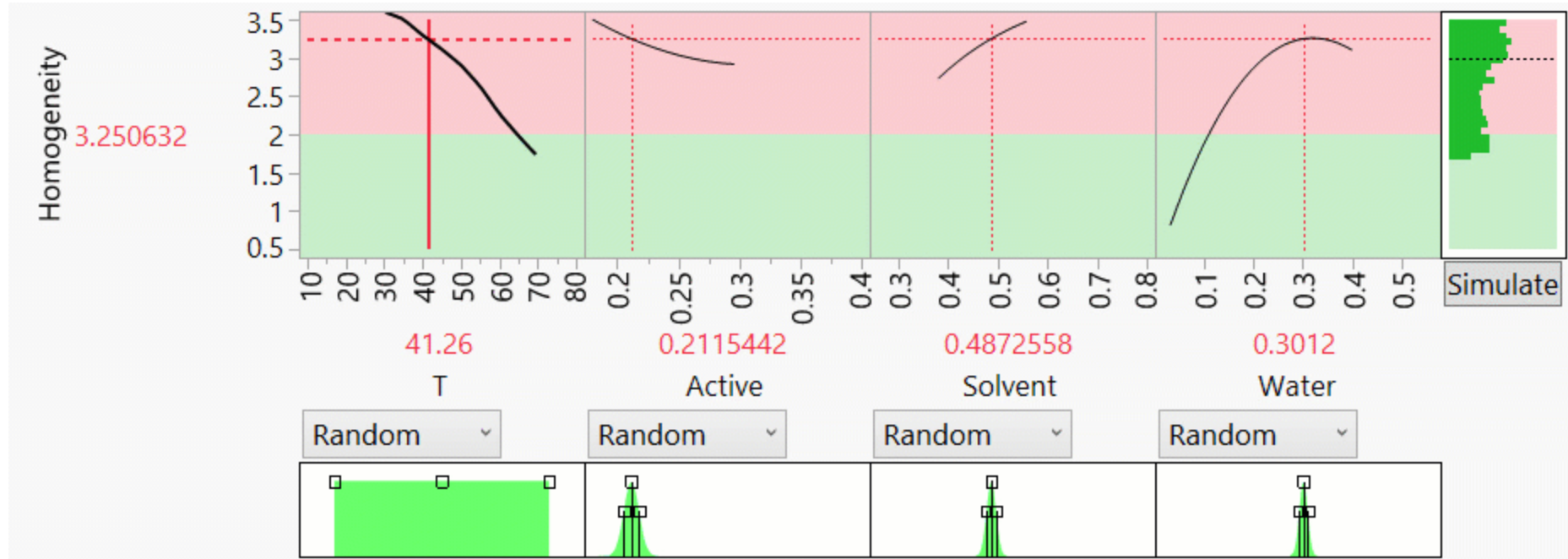


# CASE STUDY

## Functional Response for Each Formulation



# CASE STUDY



Data analytics for formulation can be complex

...It doesn't have to be difficult

# JMP HELPS YOU MAKE BETTER DECISIONS, FASTER

## Design of Experiments (DOE)



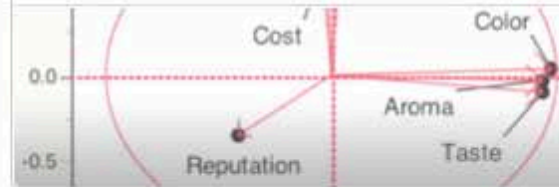
## Data Visualization and Exploratory Data Analysis



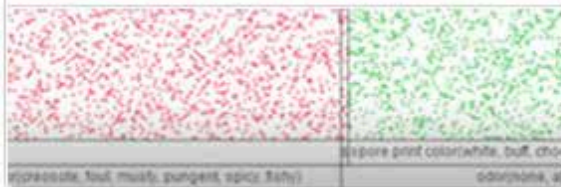
## Quality Engineering, Reliability and Six Sigma



## Consumer and Market Research



## Statistics, Predictive Modeling and Data Mining



## Analytical Application Development

