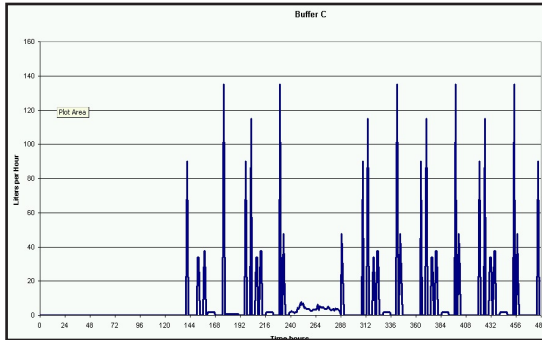
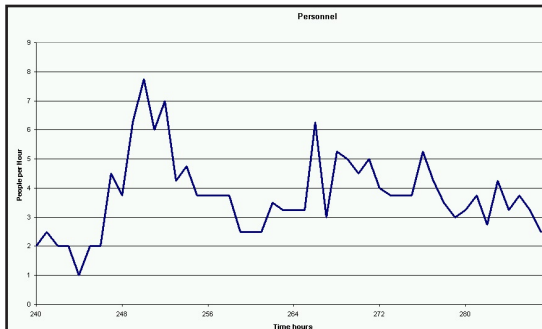


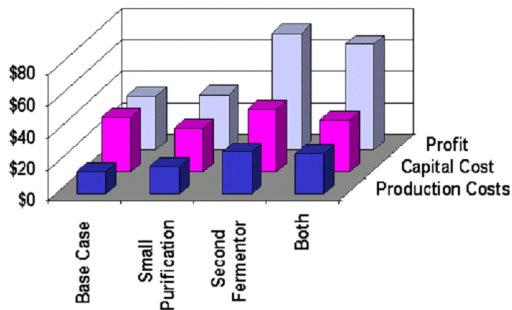
Utilities Histogram



Resource Histogram



Product Cost Scenario



K-TOPSTM Simulation Optimization

We have developed enhanced engineering tools and design/build methodologies that allow us to significantly increase our speed-to-market advantage

For further information or to schedule a demonstration, please contact us at:

bioKinetics

7 Penn Center
1635 Market Street
Philadelphia, PA 19103

1-888-246-5689

Ask for Joe Weiss
Manager of Plant Simulation

Please Visit Our Websites:

www.KTOPS.com
www.kineticsbiopharm.com

Simulation

Optimization



It's millions of dollars in client savings!

It's an integrated process knowledge base!

It's a systematic approach to problem solving!

How Can K-TOPS™ Plant Simulation Help Me?

- Maximize Capacity
- Balance Capital vs. Operating Cost
- Quickly Identify Savings
- Analyze Multiple “What If” Scenarios
- Determine the Impact on Critical Resources - Personnel, Equipment, Utilities, and Space

We have the answer to your questions...

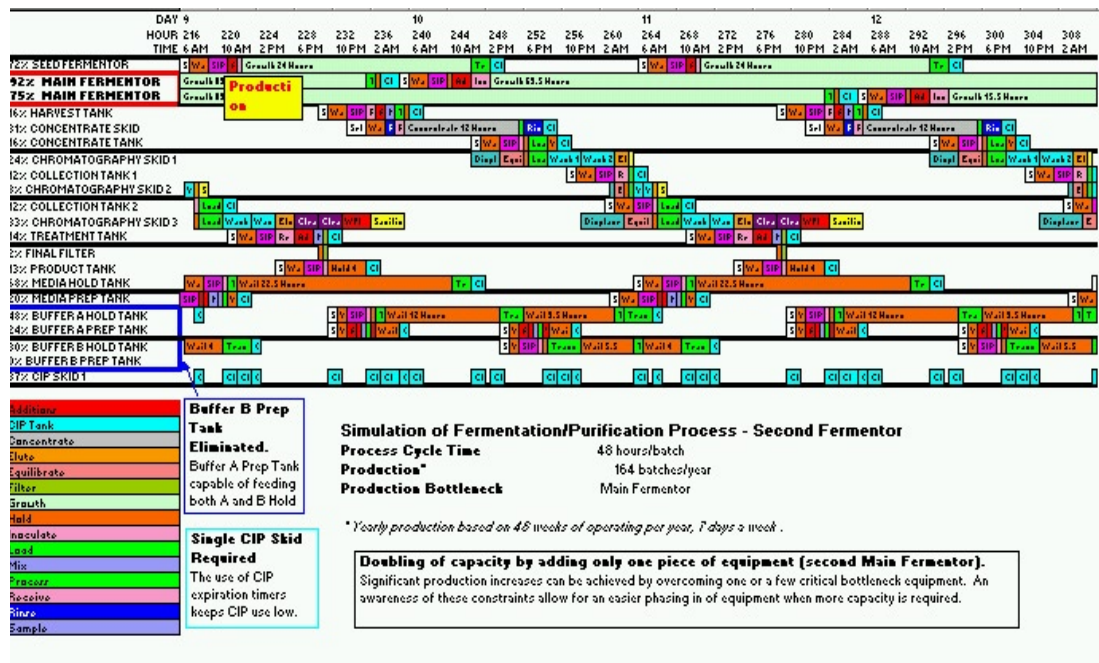
- How much equipment do I need?
- What will be the impact of the new product out of R&D?
- Do I have enough utilities?
- Do I have enough personnel?
- Where is my process bottleneck?
- How do I get the biggest value for my investment?
- Is my outsourcing approach the right one?

Advantages Over Traditional Simulation Programs

- Unlimited flexibility enables unique, effective, solutions
- Modular approach (build the detail where you need it)
- Rapid solutions provider

K-TOPS™ Comes With Industry Leading Biopharmaceutical Engineering Expertise

Manufacturing Timeline 2nd Fermentor / Small Purification Train



SIMULATION PROJECT ACCOMPLISHMENTS

- \$30 MM saved on an expansion via existing equipment optimization, TIC reduced over 60%
- 50% production increase for a 7% increase in Capital costs
- \$4 MM direct capital costs savings via process support equipment optimization