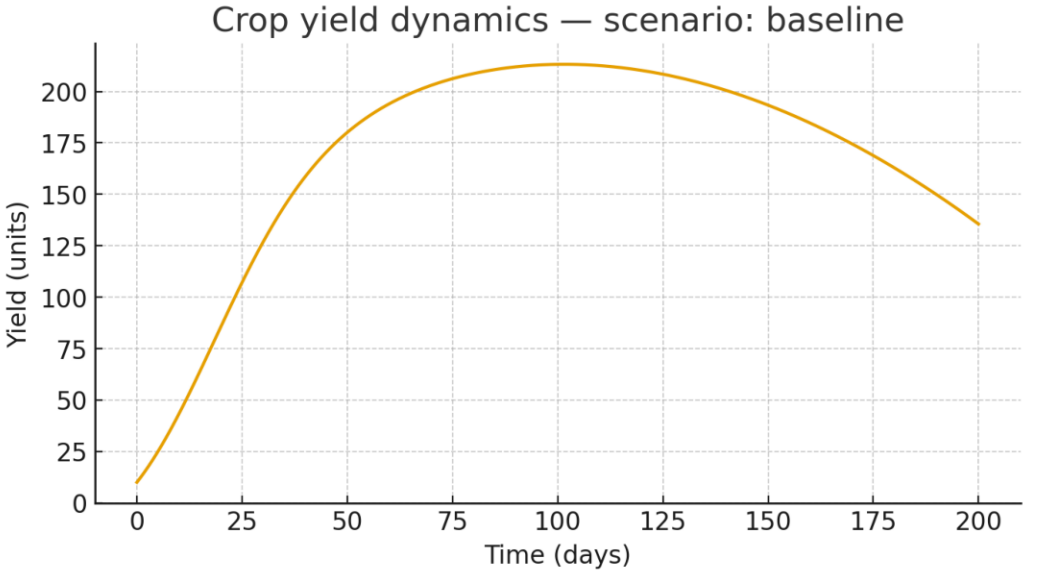
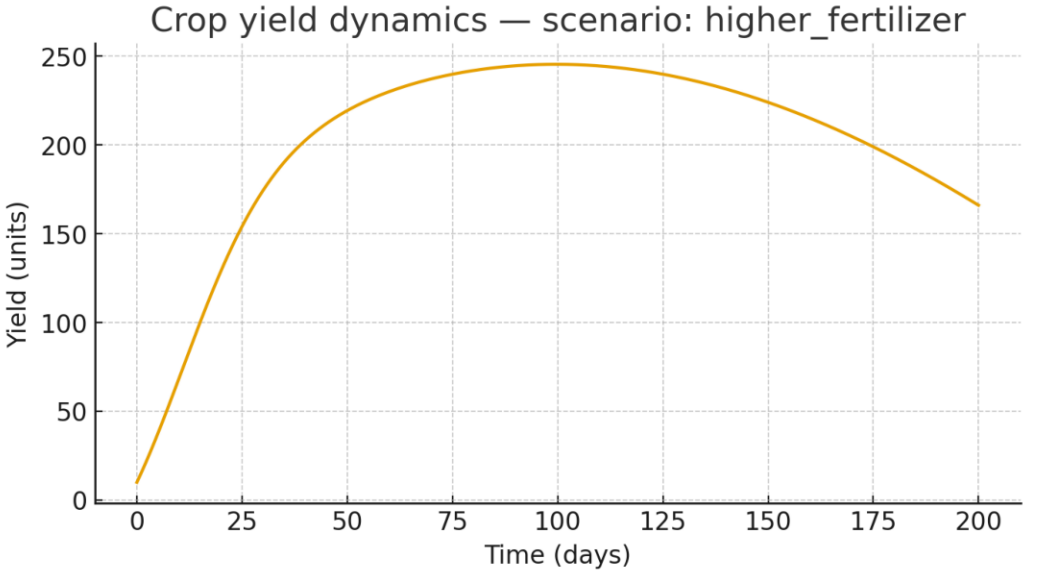
Modeling of Crop Yield Dynamics\nMATLAB/Simulink project

Generated: 2025-10-28 07:36 UTC

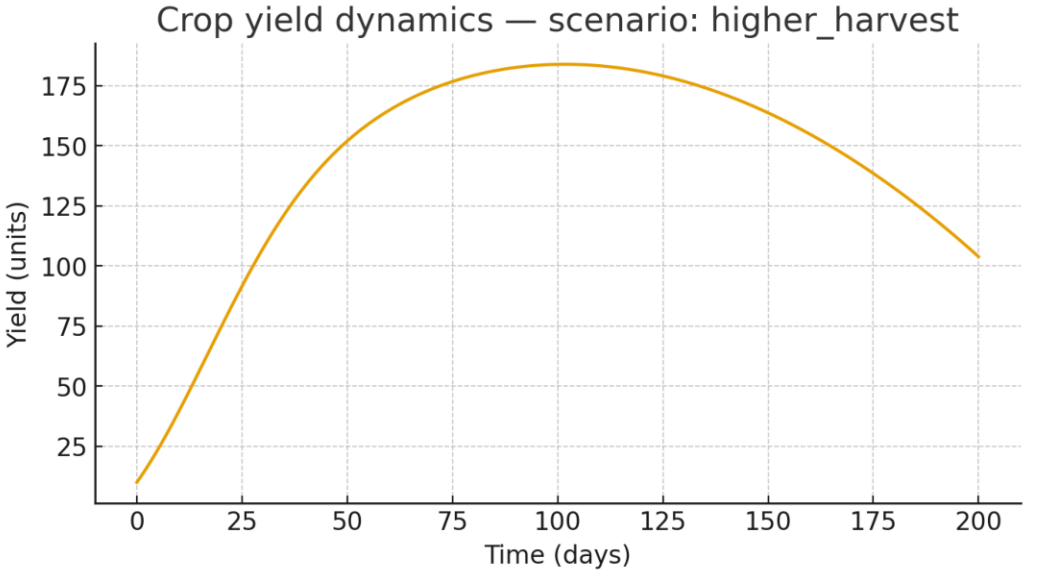
Scenario: baseline



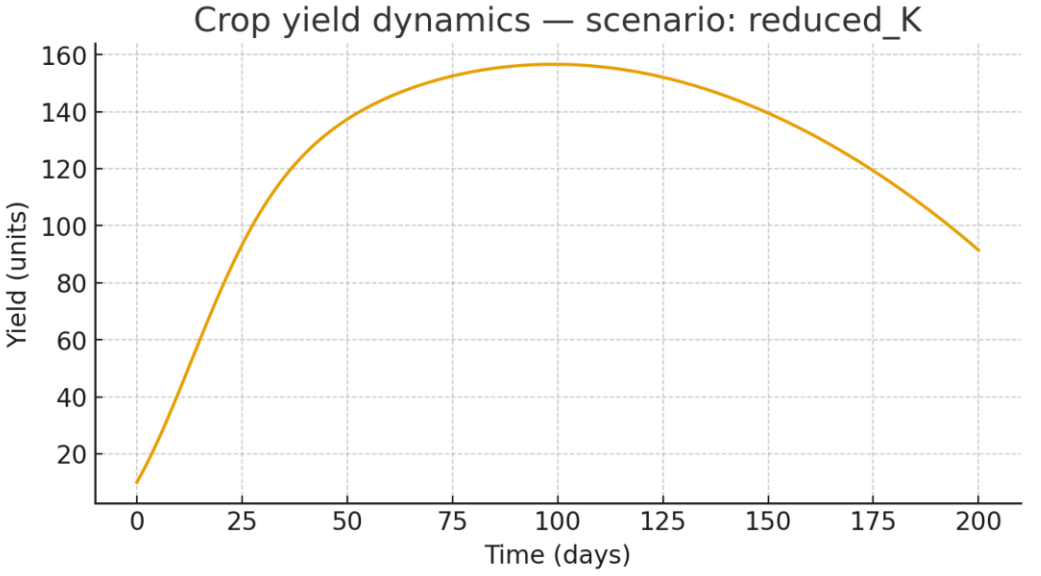
Scenario: higher_fertilizer



Scenario: higher_harvest



Scenario: reduced_K



Summary statistics (mean/max/min of simulated yield):\n\n- baseline: mean=167.32, max=213.20, min=10.00, final=135.55\n- higher_fertilizer: mean=197.53, max=245.35, min=10.00, final=165.99\n- higher_harvest: mean=136.86, max=183.86, min=10.00, final=103.86\n- reduced_K: mean=117.97, max=156.60, min=10.00, final=91.44\n\nInterpretation:\nThe logistic growth term stabilizes yield near carrying capacity K. Higher fertilizer increases mean and max yields. Higher harvesting rate lowers final yield and may cause lower equilibrium. Reduced K lowers achievable yields. Use parameter tuning to match field data.