Tomato Growth Model

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Equations

- Number of nodes on mainstem
  - dN/dt=Nm*fN(T)
  - Number of nodes per day
- LAI (leaf area index)
  - d(LAI)dt = ρ *δ*λ(Td)*(exp[beta*(N-Nb)])/(1+exp[beta*(N-Nb)])
  - Meters squared [leaf] per meter squared [ground] per day
- Number of fruit
  - dNF(i)/dt=rF(T)*F(C)*nF*NF(i-1)-rF(T)*F(C)*nF*NF(i)-PF(i)
  - Fruit per meter squared per day

Estimated Values

Parameter	Description	Value	Range of Estimation	Values Reported by Other Authors
N_b	Parameter in expolinear equation	13* (16)	8-25	16
δ	Maximum leaf area expansion	0.041* (0.038)	0.01-0.1	0.030
β	Parameter in expolinear equation	0.22* (0.169)	0.06-0.5	0.169

Timeline

- Phase 1:
  - 5 hours of research, presentation, and report
- Phase 2:
  - 15-20 hours of working on individual programming
- Phase 3:
  - 5 hours of final programming
  - 5 hours of integrated programming for team model and preparing for final presentation