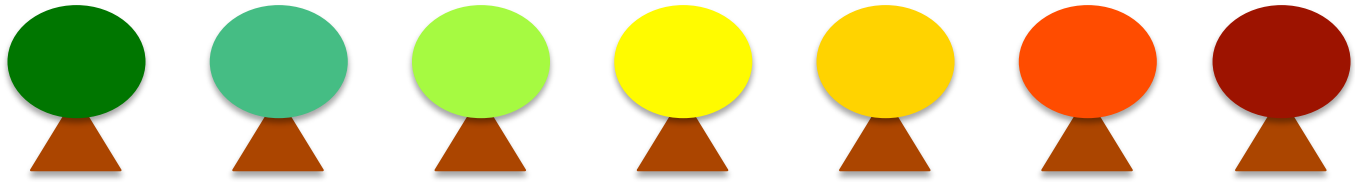
7.4 Modeling the impact of RNAi treatments on the spread of HLB among asymptomatic trees

- Recent experiments show that the time to infectiousness in flush shoots is as short as 22 days
- We incorporate this in a mathematical model that predicts the rapid asymptomatic spread of HLB through a grove
- We use this model to analyze the effectiveness of potential psyllid control strategies, most notably, a new biological control in the form of RNAi constructs.

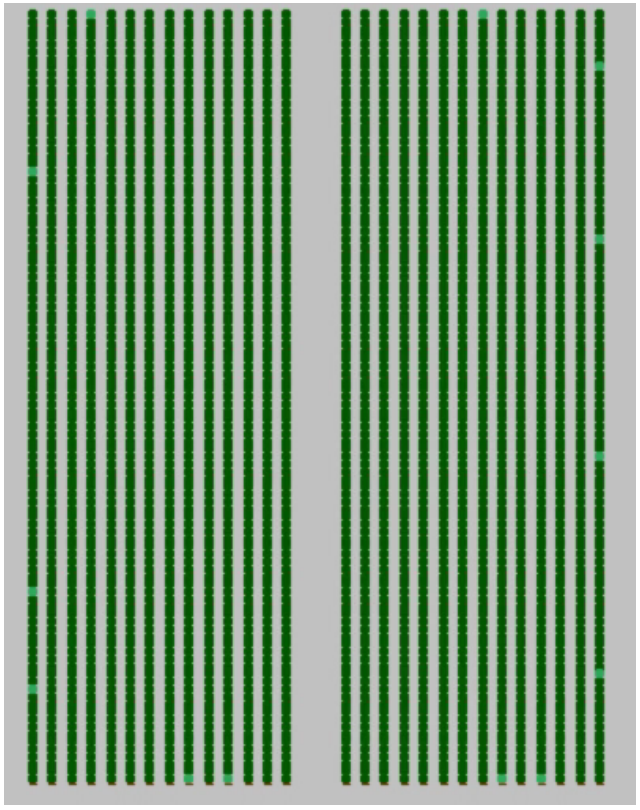


Healthy → Low → Med → High

Cumulative # of infected flush shoots

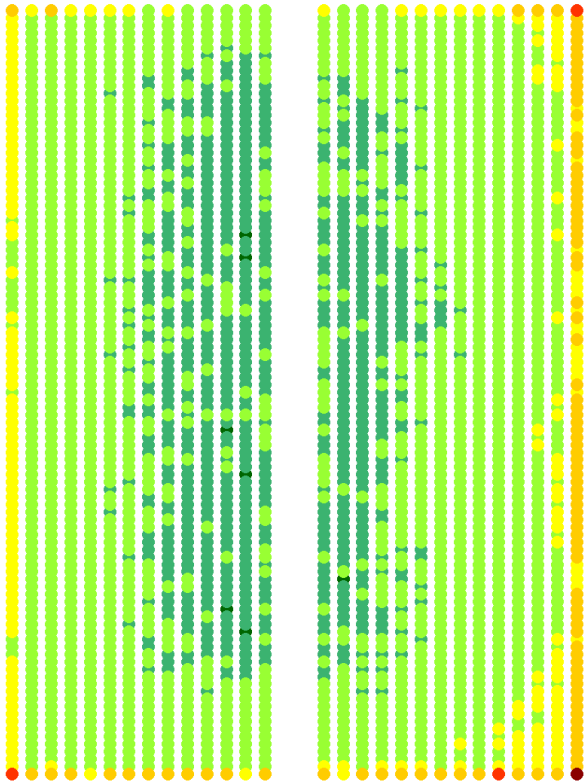
0	1-10	11-100	101-200	201-400	401-600	>600

Movie ending at
1 year and 4 months



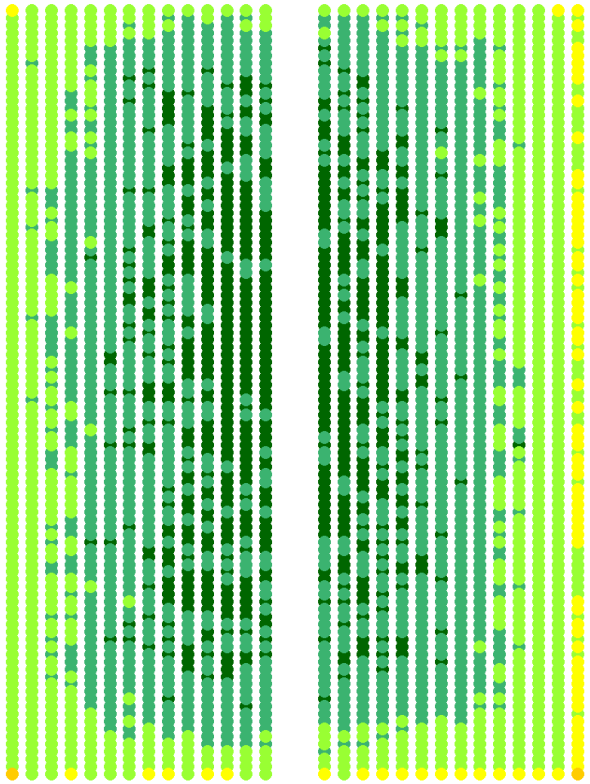
No control

End of 10 years



Weak RNAi constructs:
40% nymphs that normally live will die
33% of adults die over a 15 day period

End of 10 years



Strong RNAi constructs:
80% nymphs that normally live will die
66% of adults die over a 15 day period