

THE JOINT FORCES OF CSIRO & SCION

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Forest Biosecurity and Protection

## *Nectria* ecology summary March 2007



CSIRO

SCION

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- *Nectria fuckeliana* is thought to cause cankers in *Pinus radiata*
- Little known about the biology and ecology



1. How does the fungus spread and infect the host?
2. How does the host respond to the fungus?

# 1. Spread and infection: Spore Trapping



- ▶ Is there a correlation between spore release and environmental conditions?

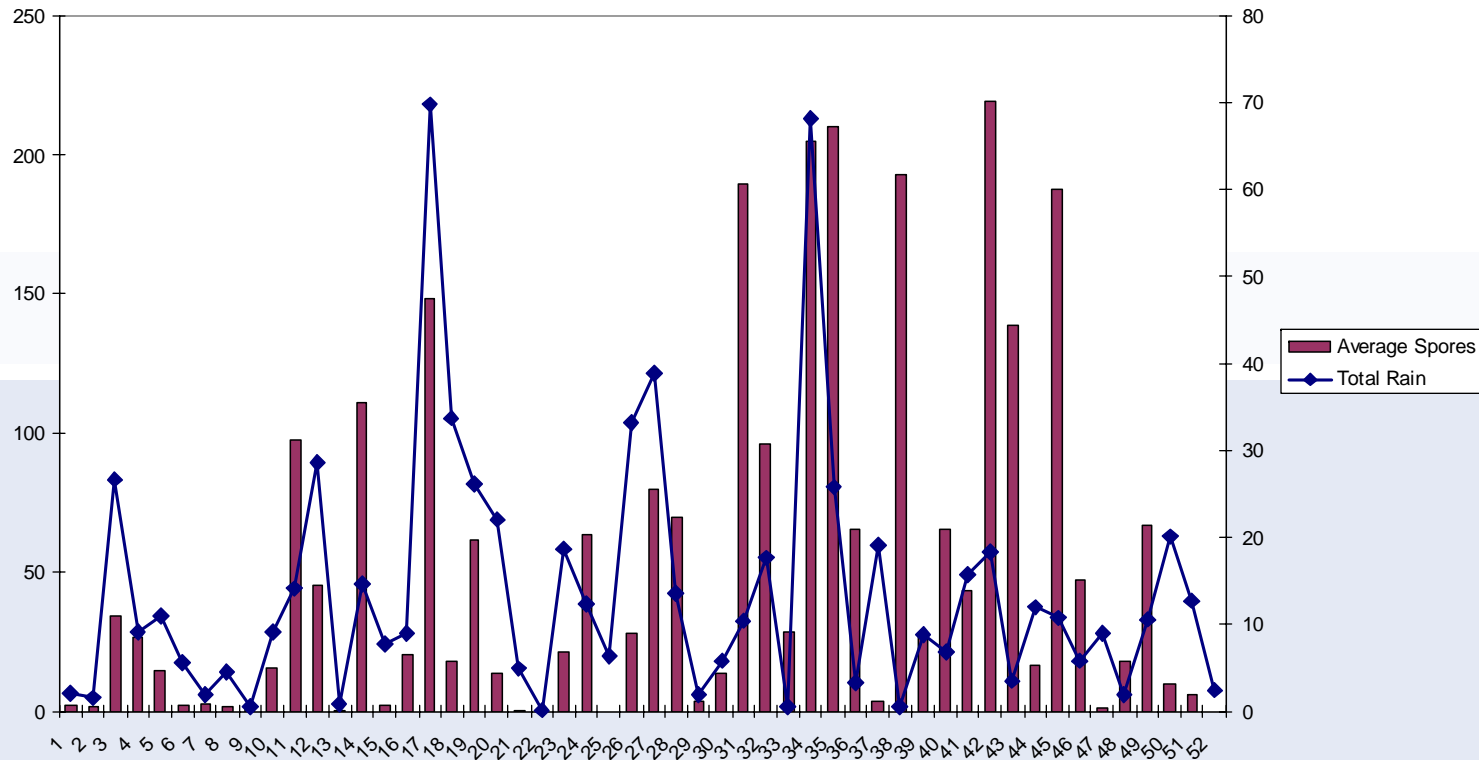


# 1. Spread and infection: Spore Trapping

- 3 spore traps around each of 2 trees
- Traps changed weekly for one year
- Collected environmental data



# 1. Spread and infection: Spore Trapping



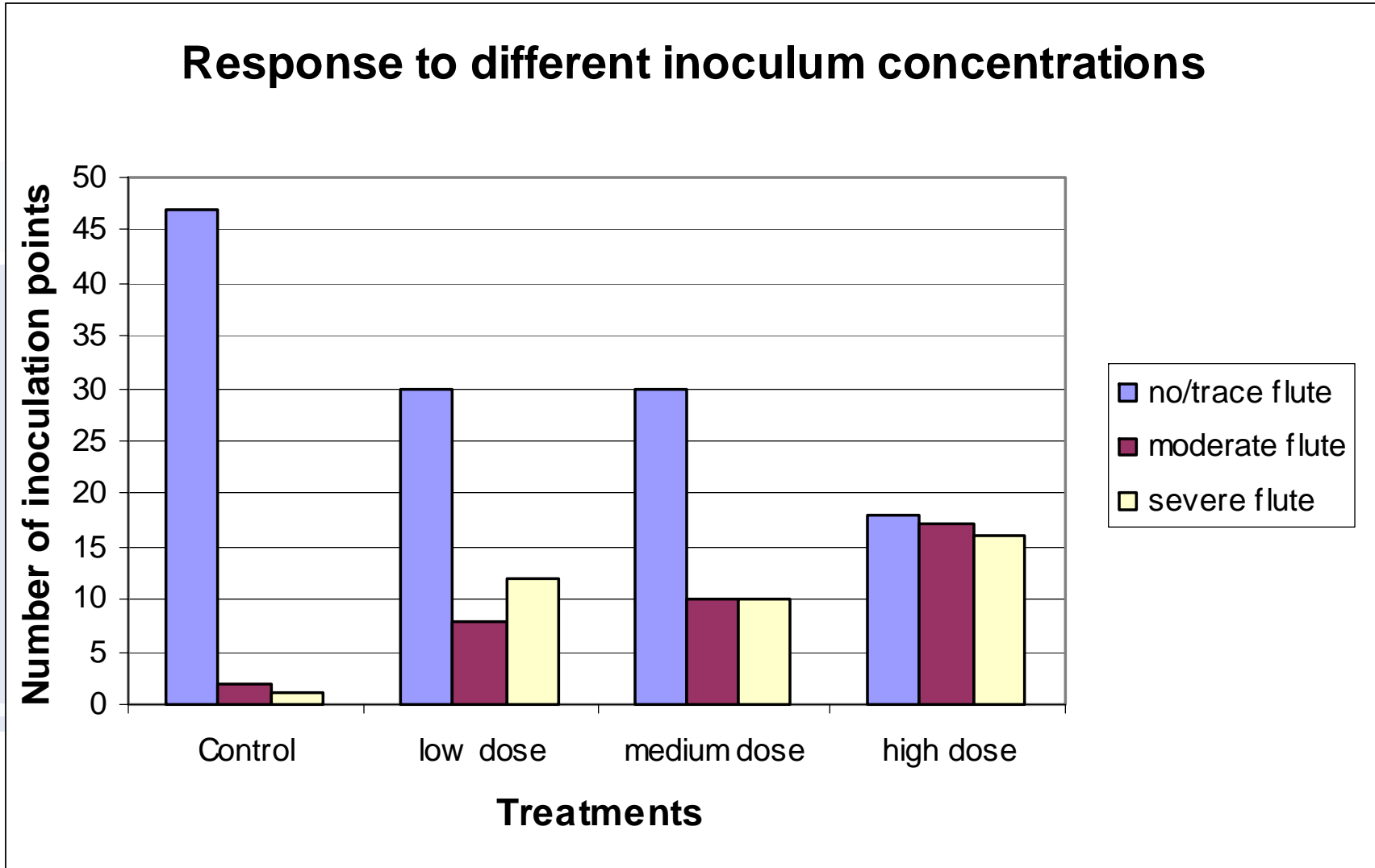
- Some relationship between rainfall and spore release
- Further investigations into temperature, ice melt, consecutive rain days

## 2. Host Response: Inoculum Concentration Trial



- How much inoculum do you need for successful infection?
- How does the tree respond to increasing inoculum loads?
- 50 trees each inoculated at 3 points plus a water control
- Usual concentration, 1/10<sup>th</sup> strength and 1/100<sup>th</sup> strength
- Established October 2005
- Assessed after 6 and 12 months

## 2. Host Response: Inoculum Concentration Trial



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- Inoculum concentration had an effect in 24 out of 50 trees
- Strong individual tree response:
  - Ten control points showed some response to wounding
  - Thirteen trees developed severe flutes – dose not important
  - Nine trees did not develop flutes at the low dose but did at medium or high
  - Three trees showed no response at any dose
  - Fruit bodies recorded on nine trees at 12 months and a further three trees at 14 months

## *Nectria*: What do we know so far?



- Spores are present in fruitbodies all year round
- *Nectria* dispersed by water and appears to have some correlation to rainfall patterns
- Strong individual tree response to infection