



# **Strategies to eradicate *Ailanthus altissima* and break its life cicle.**

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# How to clean the inert waste?



Area to area, everything can get cleaned.  
Start wherever you want, they don't decide the agenda.

**But *Ailanthus* does**

# Proposed strategy to prevent the *Ailanthus* biological cycle

**1.- Attila:** Kill all *Ailanthus* fast.

Females are a priority



**2.- Herod:** Disable seeds where Attila has been applied.



**3.- Alice:** speed up. Attila all year long.

**4.- ....maybe *Verticillium* (?!)**



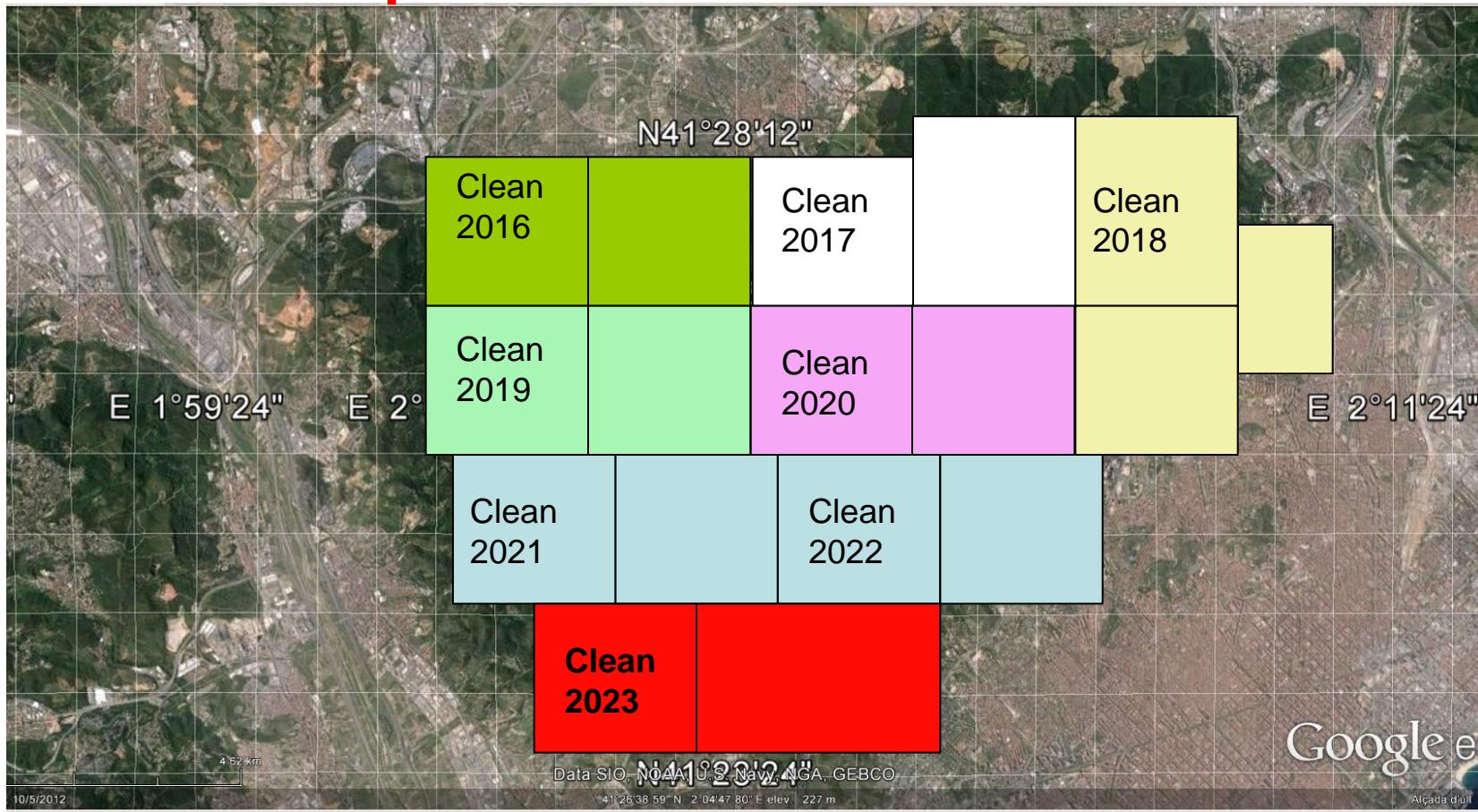


# 1.-Operation Attila

*“There, where I have passed,  
the grass will never grow again.”*

Systematic action: Area after area, year after year: No roots or specimens are left alive

# Attila: killing 100% *Ailanthus* in each 8 color sections. So in 8 years the *Ailanthus* problem will be finished?



Results “Attila” in 2023 :*Ailanthus* is growing again in **ALL** sections.



2021... 2023  
**shoots**



2023 . Seeds in the ground



Because many *Ailanthus* seeds rest in ground ... (how many years?)

# And may be it's worst...

## **Tree of Heaven - Biological Highlights**



- 2 to 3 yr old plants can produce viable seed
- Up to 300,000 seeds / yr for mature tree
- Seeds disperse up to 330 ft from parent
- Sprouts can grow 10 to 14 ft tall in first year and maintain this growth rate for up to 4 yrs

Interventions slower than their reproduction speed will not end the problem. It results in a waste of money





## 2-Operation Herod:

*“Slaughter of the innocents”*

The viability of the seeds  
seems decline after one  
year, but isn't zero.....

Herod must be used when  
EVERY seed has already  
sprouted.

After July, not before.

# Herod: hand pulling or foliar herbicide spraying



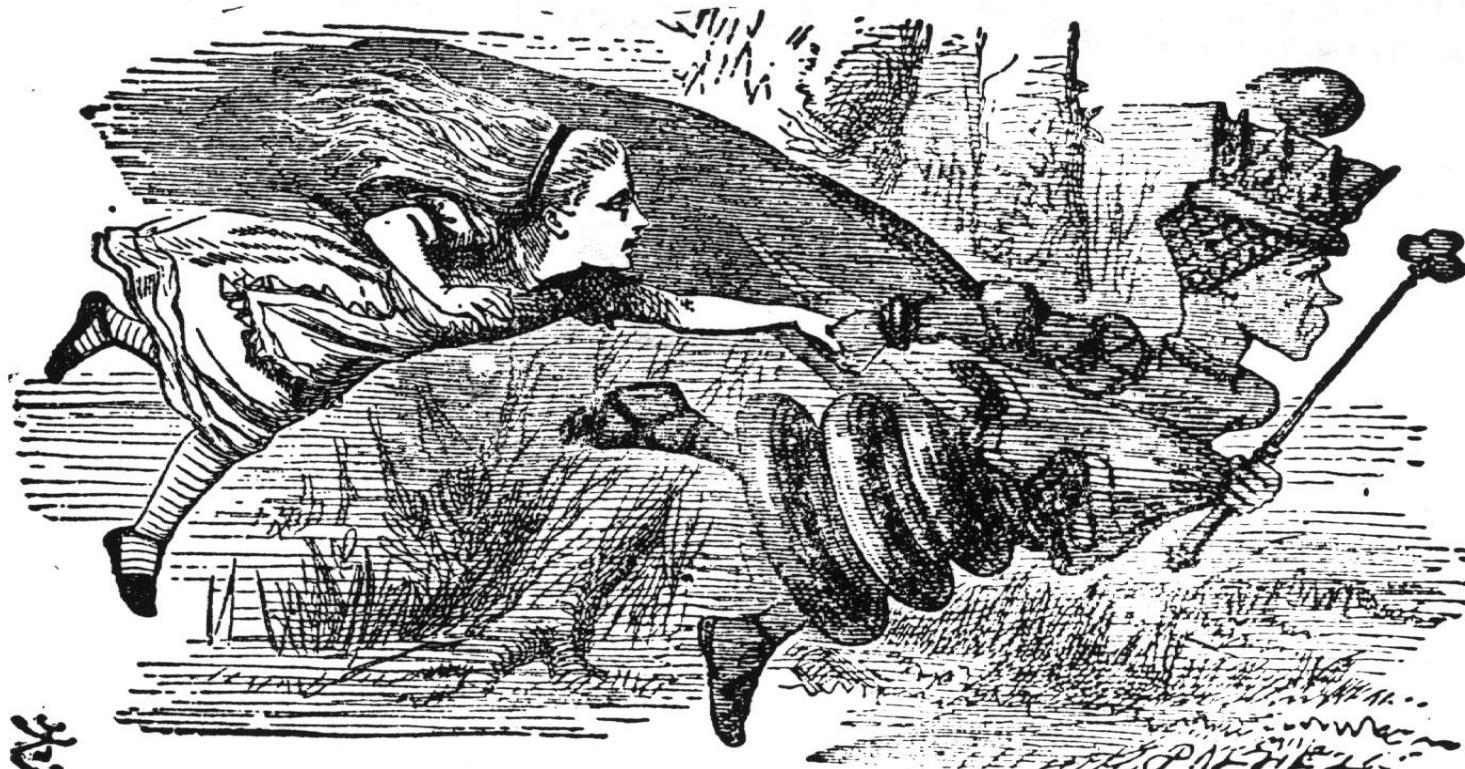
Ready for **hand pulling**



# Herod: spray carefully when there are many...



# Alice "Through the Looking Glass"



- The Red Queen was right:
- “We have to run *FAST* to keep only in place against *Ailanthus!*”

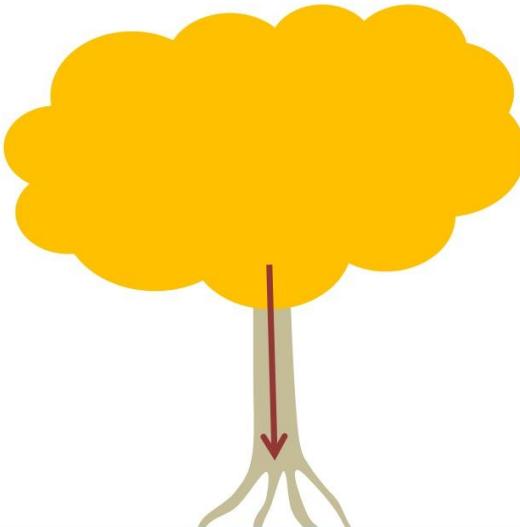
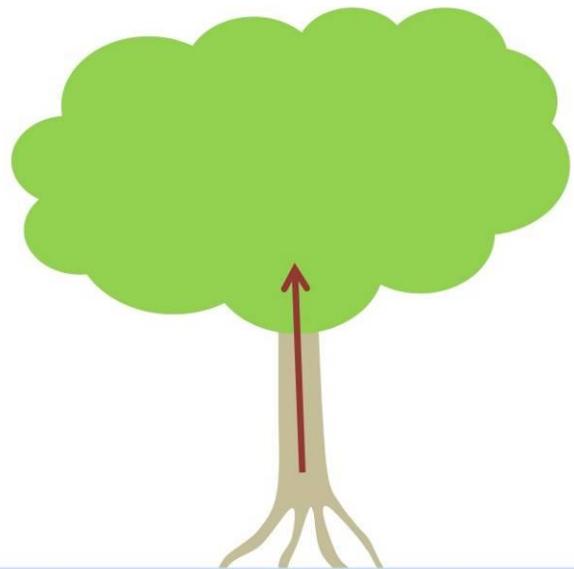
### 3.- Speed up: Alice



Interventions can be performed all year long, including winter, eliminating trees and roots

- Cutting trees before drilling (!)
- Hand pulling young trees

But... In *winter* it works?



Spring and early summer – sap flowing up, and systemic herbicides cannot easily reach roots.

Late summer and fall – sap flowing down and systemic herbicides can reach roots.

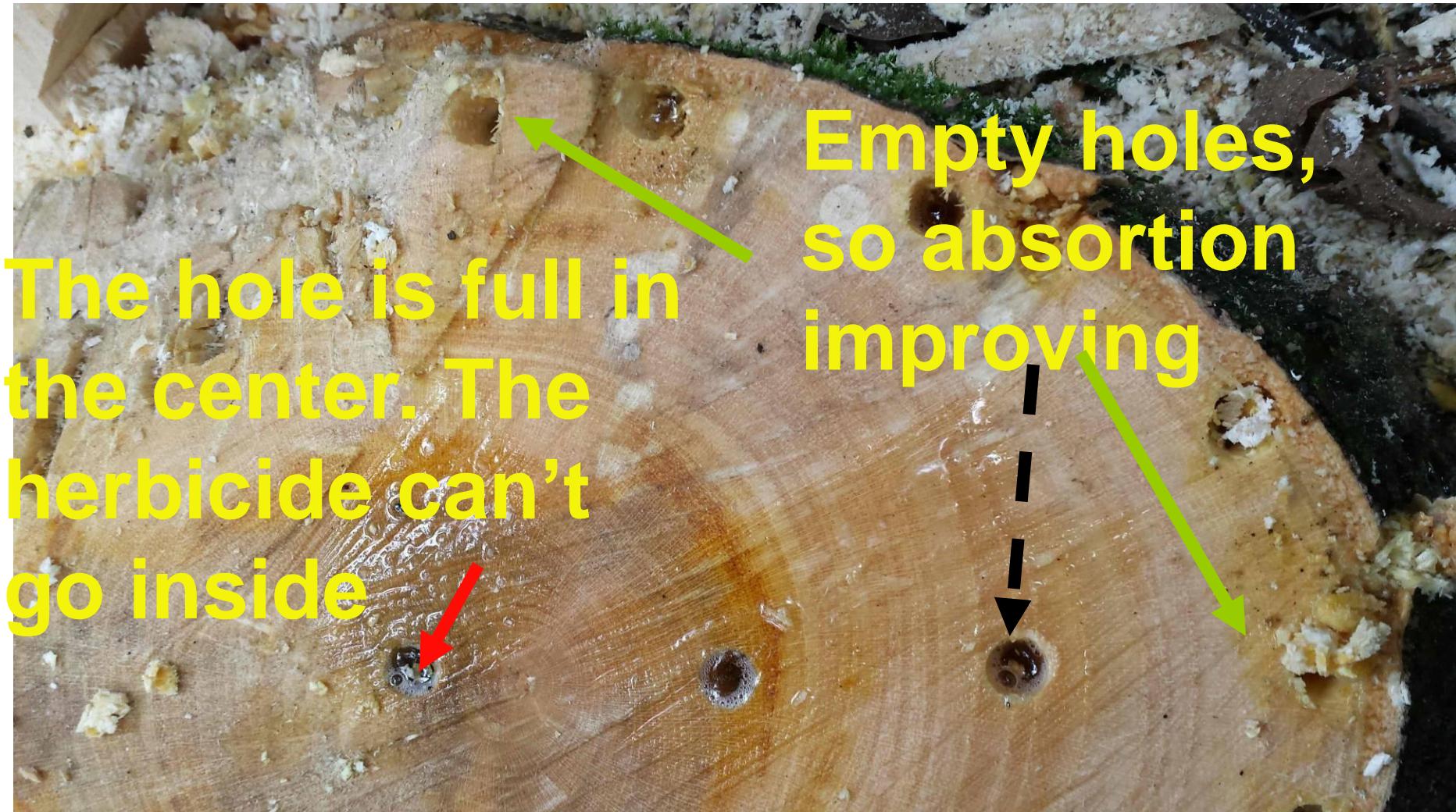
You must apply herbicide  
only near the roots

In winter better drill roots too.

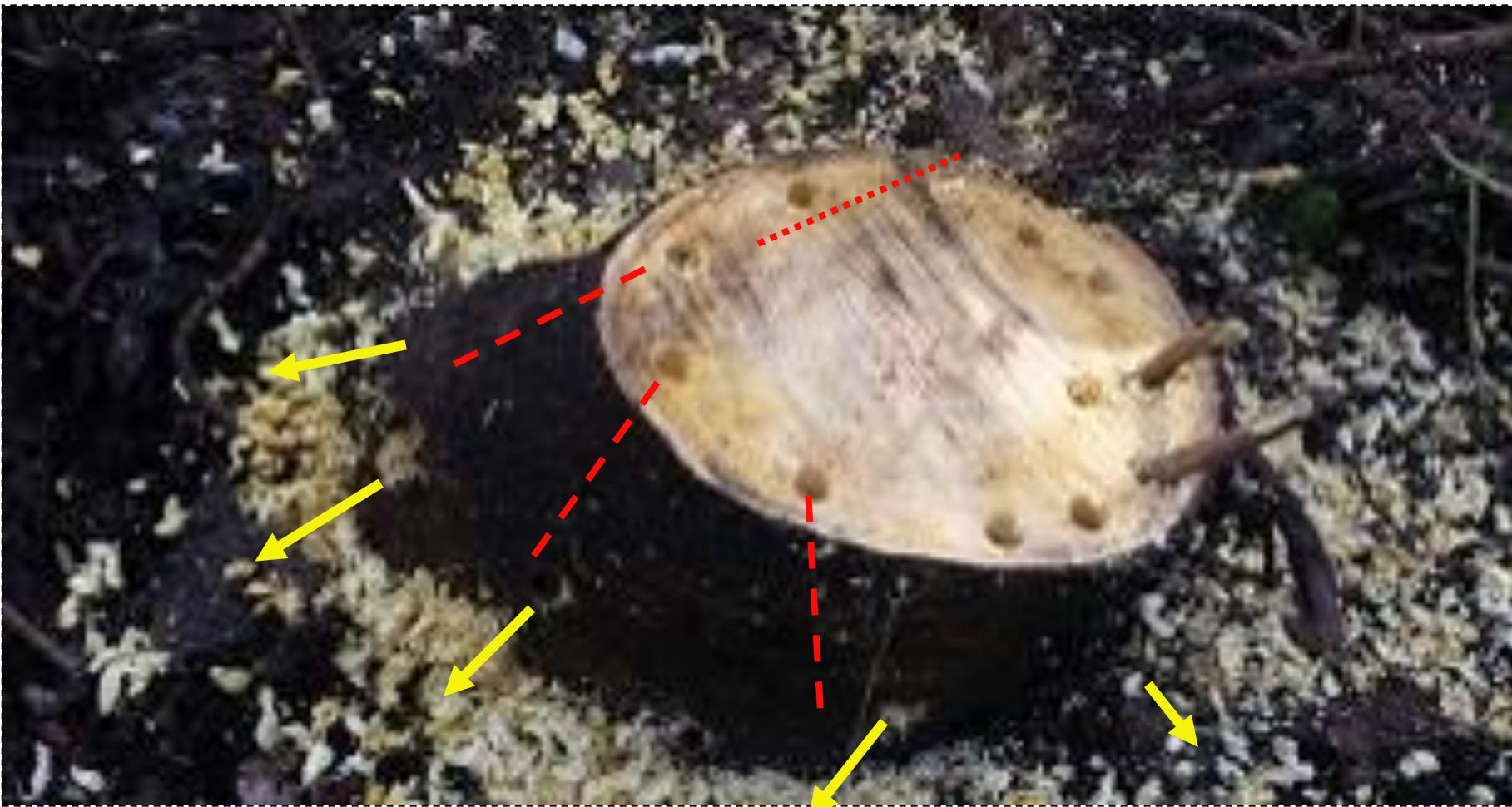
*Drilling sloping deep holes* in the last ring floema. Herbicide can't be lost to the aerial section of the tree. Only near a key place: roots



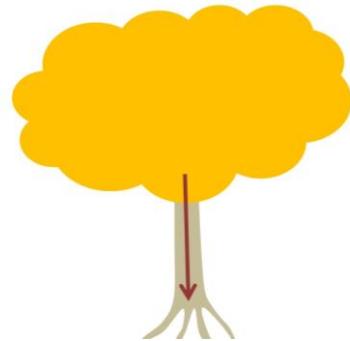
# Winter: Comparing absorption herbicide between center and floema.



Drill deep inclined holes in order to reach as many floema "pipelines" as possible.  
Repeat near the ground. A big dose will reach the root .



# Action herbicide



*Fall*

Drilling trunk

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\*\* Optimus  
translocation

\*\* A small dose of  
herbicide is enough

*Winter*



Cutting tree and drilling  
section)

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\*\* Easy positioning of  
the holes

\*\* The herbicide is very  
concentrated in the  
roots

## 4.-*Verticillium* ... Can help?

Mix some soil from the forest with water and leftovers from dead Ailanthus with an orange colour. Inject or apply to wounds. Not as effective as american *Verticillium albo atrum* but remains in the ground for years and weakens them (50% mortality in some areas)



White = Healthy



Orange = infected

# The End: Red Queen was right



*We have to run **VERY FAST** to keep in place... and WON **Ailanthus!**"*