

Using established silvicultural management sites to combat *Heterobasidion annosum* in Aquitaine via stump grinding or stump treatment (INRA).

B. Lung , C. Meredieu, X. Capdevielle - INRA (Coll. ONF - CRPF - FCBA)



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WP3: Risk management

Action 3.3 : Silvicultural fight

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Task 3.3.7 Research valorization of stump treatment and stump removal experimental network against *Heterobasidion annosum- INRA Bordeaux, B. Lung , C. Meredieu (Coll. ONF - CRPF – FCBA)*

Experimental location	Surface (ha)	Plantation date/Age	Type of treatment	Measure of mortality
Lapeyrade/losse	4	2012	Stump removal	April 2014
Arx	7.5	10/2008	Stump removal	February 2013
Magescq	4	21 years-old	Stump treatment	March 2013
Magescq	4	14 years-old	Stump treatment	March 2013
Lapeyrade/losse	0.5	12/2008	Genetic control	April 2014
Arx	0.5	10/2008	Genetic control	March 2013

Next steps :

• Writing technical description of each experimental stand (Task 6)

Link with two other tasks :

- Modelling Heterobasidion infection (task 4.2.4)
- Technical recommendations (task 6.3.1.)



Stump removal: First results from one of the long-term trial





Modelling forest stand health risks related to *Heterobasidion annosum* on maritime pine

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Task 4.2.4 Modelling *Heterobasidion annosum* infection in Pinus pinaster Stand in Southwest France - *INRA-Bordeaux, B. Lung , D. Bert, T. Labbé, C. Meredieu*

- A. Model calibration and parameterization of management
- Probability of stump infection by spores depending on climate
 - Bibliography on spore dispersion
 - Analysis of spore deposition depending on climate data in 2012
- Impact of the fungus on tree growth and tree mortality
 - Analysis of patterns of growth rings of dead infected trees and alive trees in one stand
- B. Connection with spatialized tree growth model

- Beginning of implementation of a new model "FOMPINE" in Capsis platform, on-going process

C. Validation

D. Technical recommendations (task 6.3.1.)

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Experiment 1: Seasonal pattern of spore deposition - Results



Experiment 2: Infection of thinning stumps - Results



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The effect of H. annosum on tree growth: Results



⇒A least two years of diameter increment loss before the death ⇒No influence of initial diameter





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- Probability of stump infection by spores depending on climate
 - Analysis of spore deposition depending on climate data in 2012
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 - Analysis of patterns of growth rings of dead infected trees and alive trees in one stand



B. Connection with spatialized tree growth model

- Implementation of a new submodel "FOMPINE" in Capsis platform depending on Pinuspinaster model, on-going process



C. Validation

D. Technical recommendations (task 6.3.1.)

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t=1

t=n



Sylvicultural practicies : previous

Diameters frequency (t=1)