



Crop cultural measures to control bunch rot in integrated viticulture

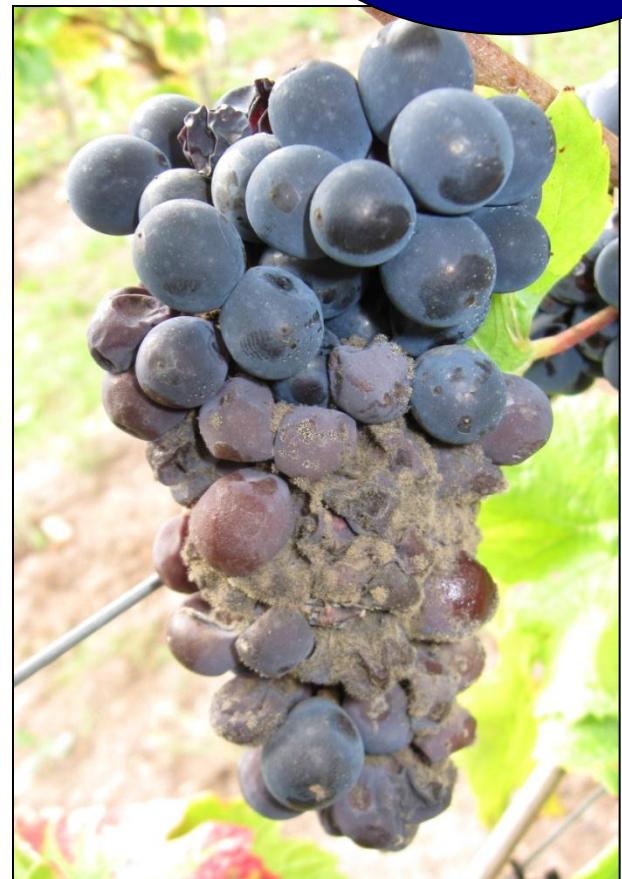
Dr. Daniel Molitor,
Centre de Recherche Public – Gabriel Lippmann,
Luxembourg

Introduction

Grape bunch rot might cause:

- yield reduction
- organoleptic defects
- premature aging
- low wine quality
- mycotoxine contamination
- reduced N contents in must

major causal pathogen:
Botrytis cinerea



Could crop cultural measures
represent efficient tools to control
bunch rot ?



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Crop cultural measures

A.

Cluster-zone leaf
removal



B.

Cluster division



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Crop cultural measures

A. Cluster-zone leaf removal



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A. Cluster-zone leaf removal

Cluster-zone leaf removal on the northeast-exposed sides of the canopy



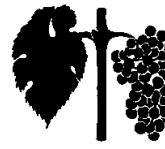
Varieties:

S. blanc (2009)

Auxerrois (2009)

Pinot gris (2010)

Riesling (2010)



Leaf removal dates:

BBCH 57, 63, 68,
73, 77, 81



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A. Cluster-zone leaf removal



Cluster-zone leaf removal

- improved sun and wind exposure
- less dense cluster structure



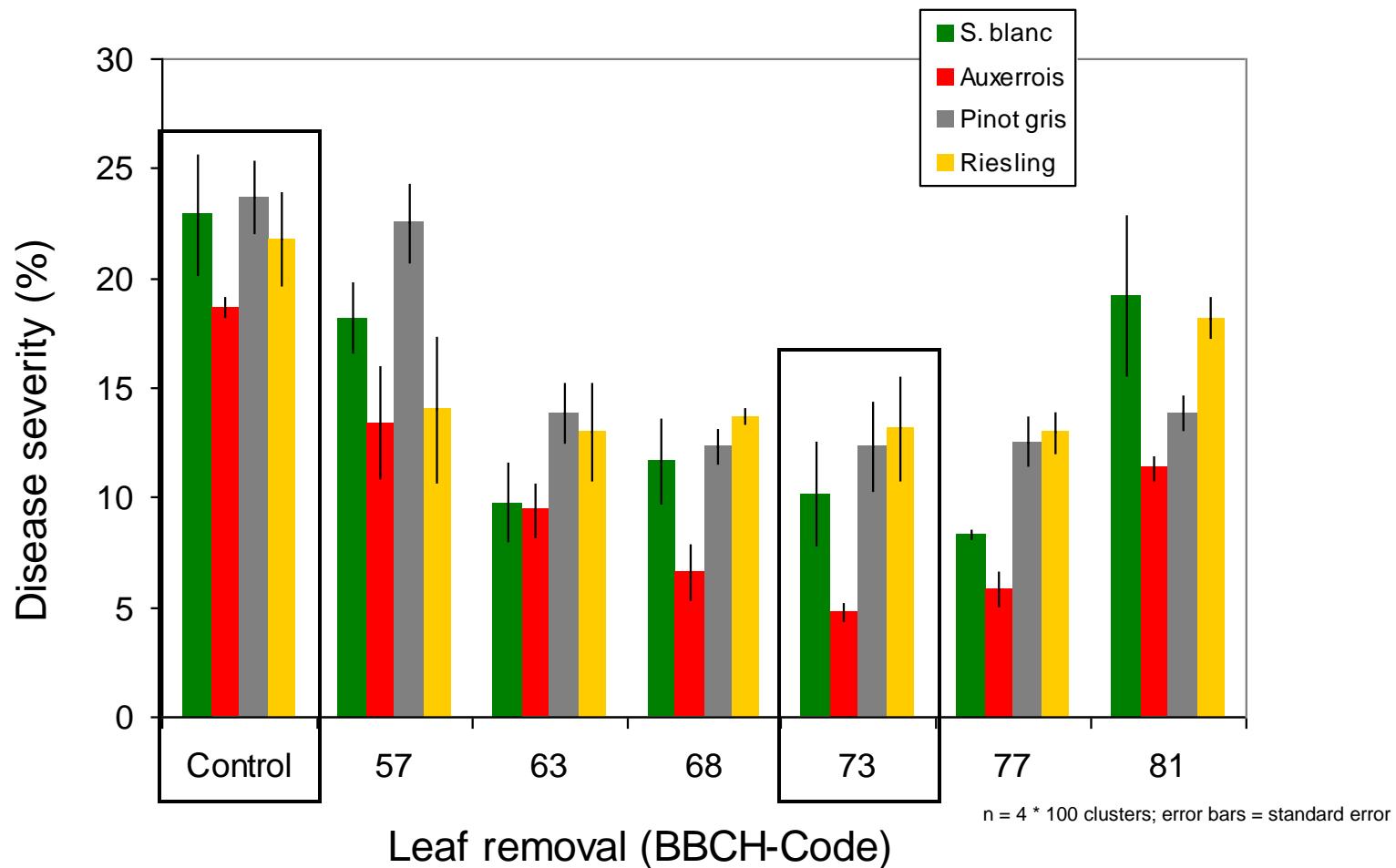
Pinot gris
10.08.2010



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A. Cluster-zone leaf removal

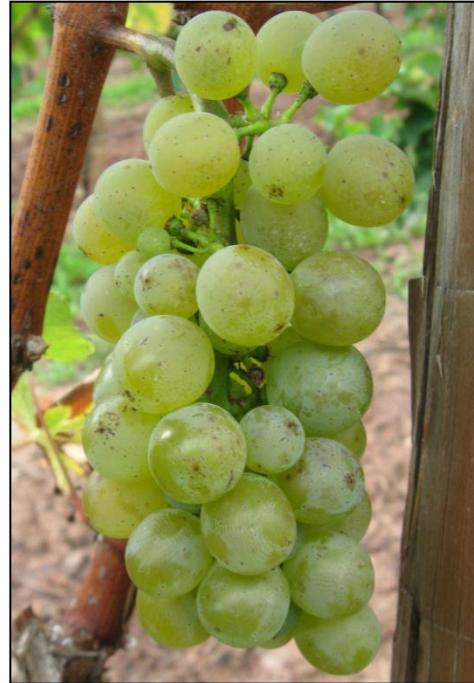


A. Cluster-zone leaf removal

Sauvignon blanc, 29.09.2009



Control



Leaf removal
BBCH 73

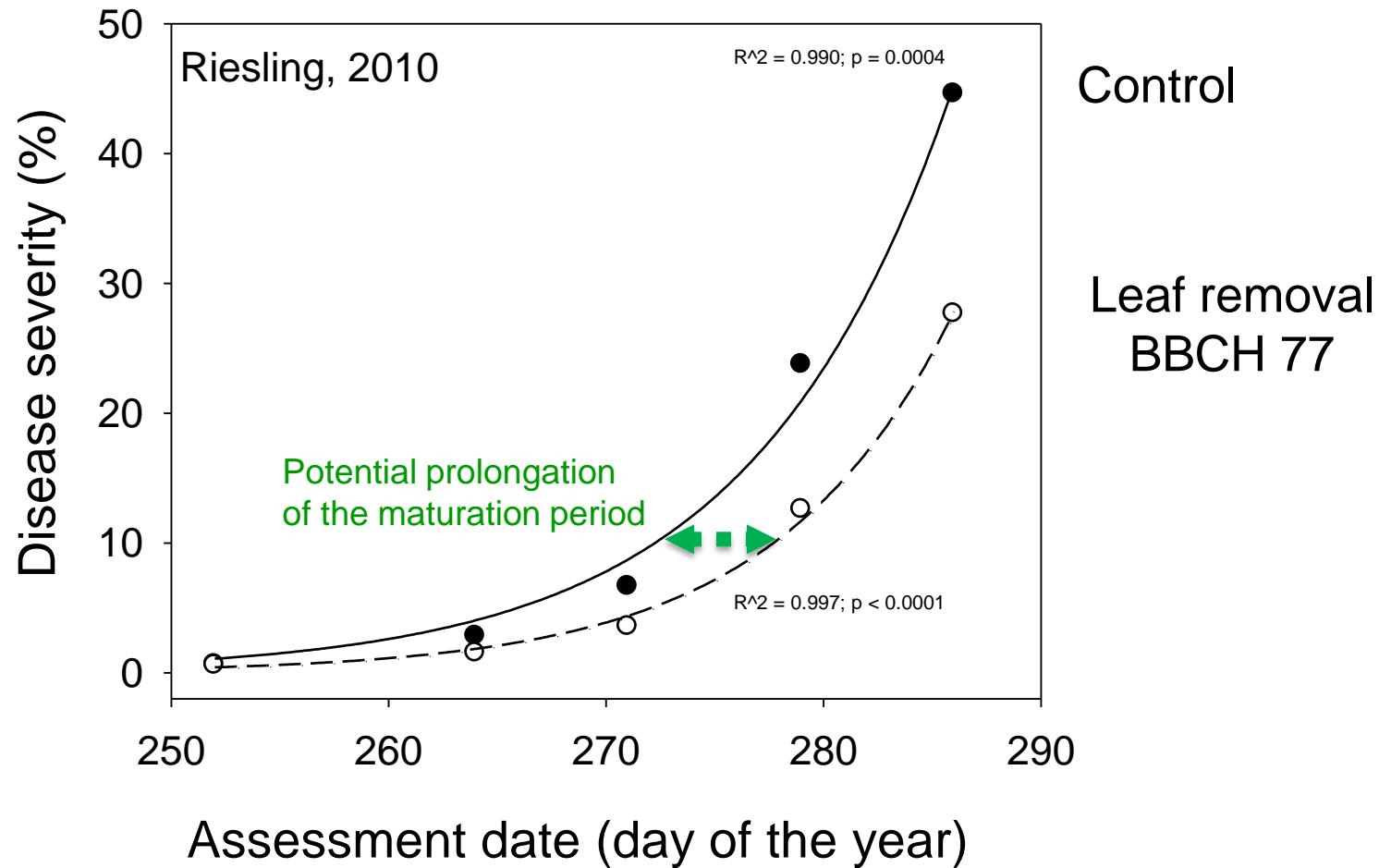


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A. Cluster-zone leaf removal

Equation type: $y = e^{(x-x_0)}$



Crop cultural measures

B.

Cluster division



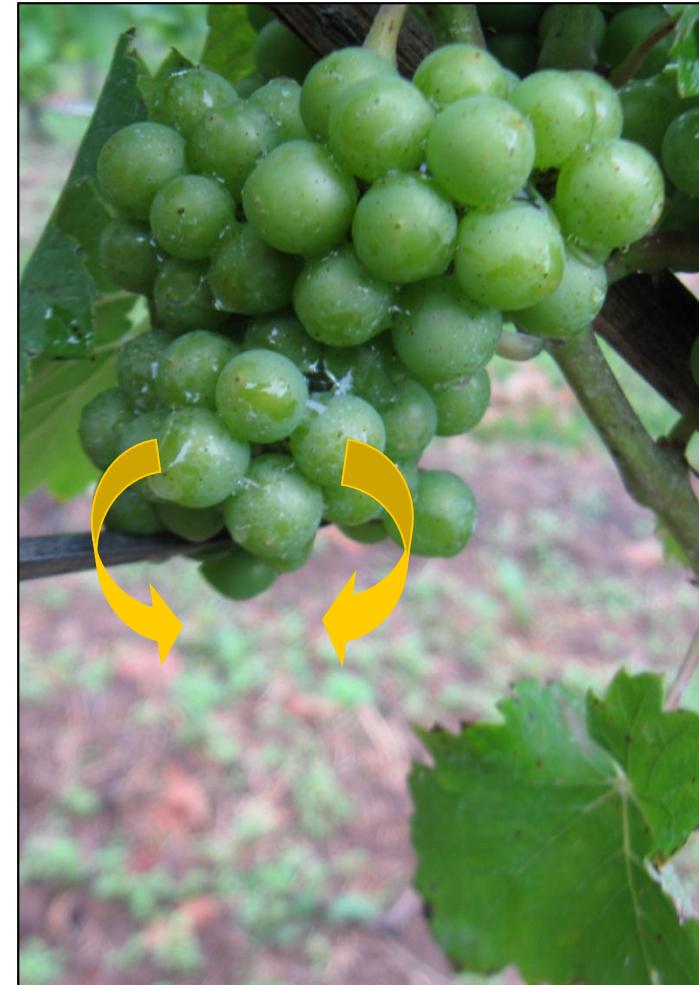
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B. Cluster division

Cluster division

→ Elimination of dense parts in the middle of compact grape clusters



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B. Cluster division

2 varieties

- Pinot gris
- Riesling



2 seasons

- 2010
- 2011

5 division dates



BBCH 57

BBCH 73

BBCH 77

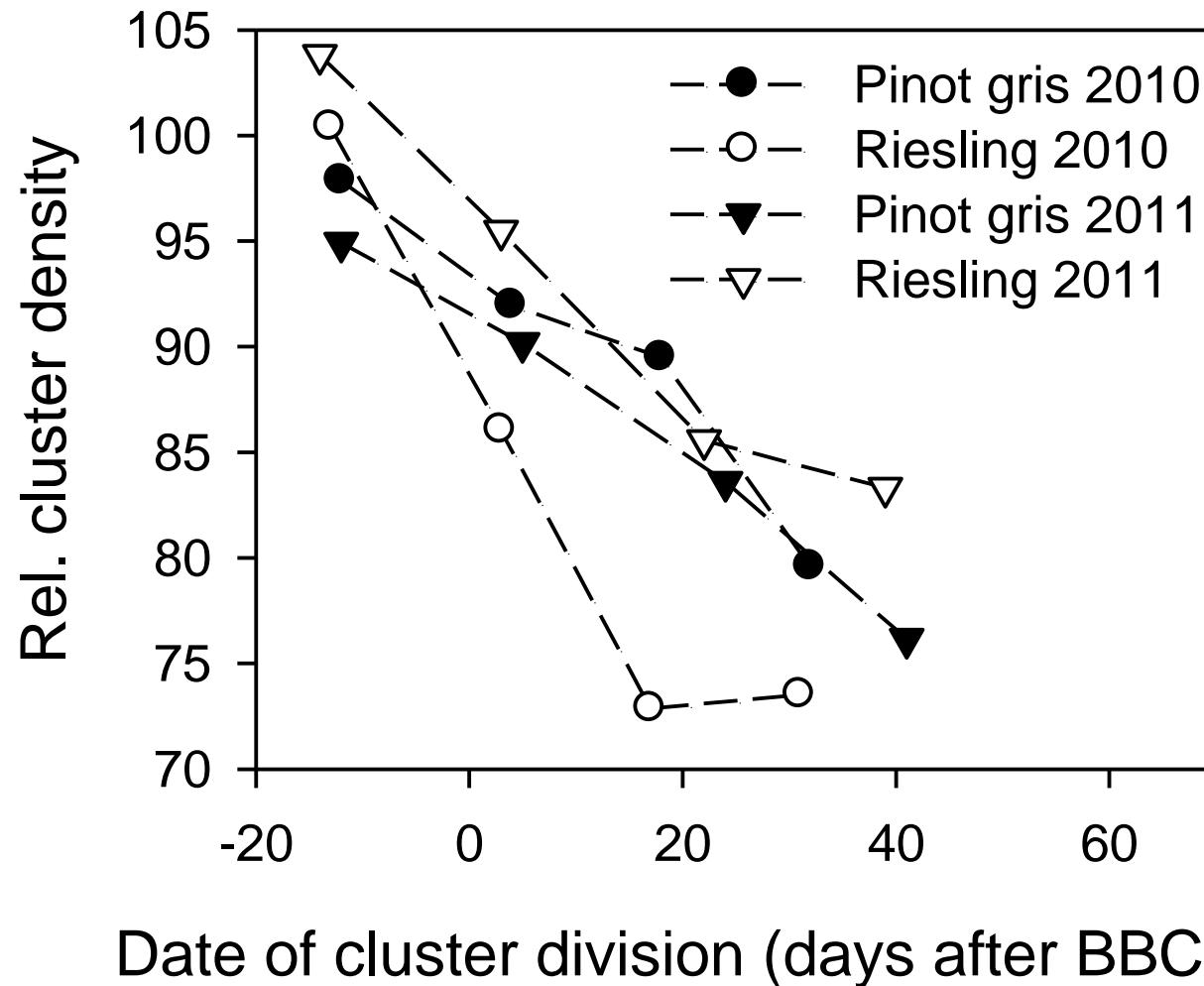
BBCH 79

BBCH 81



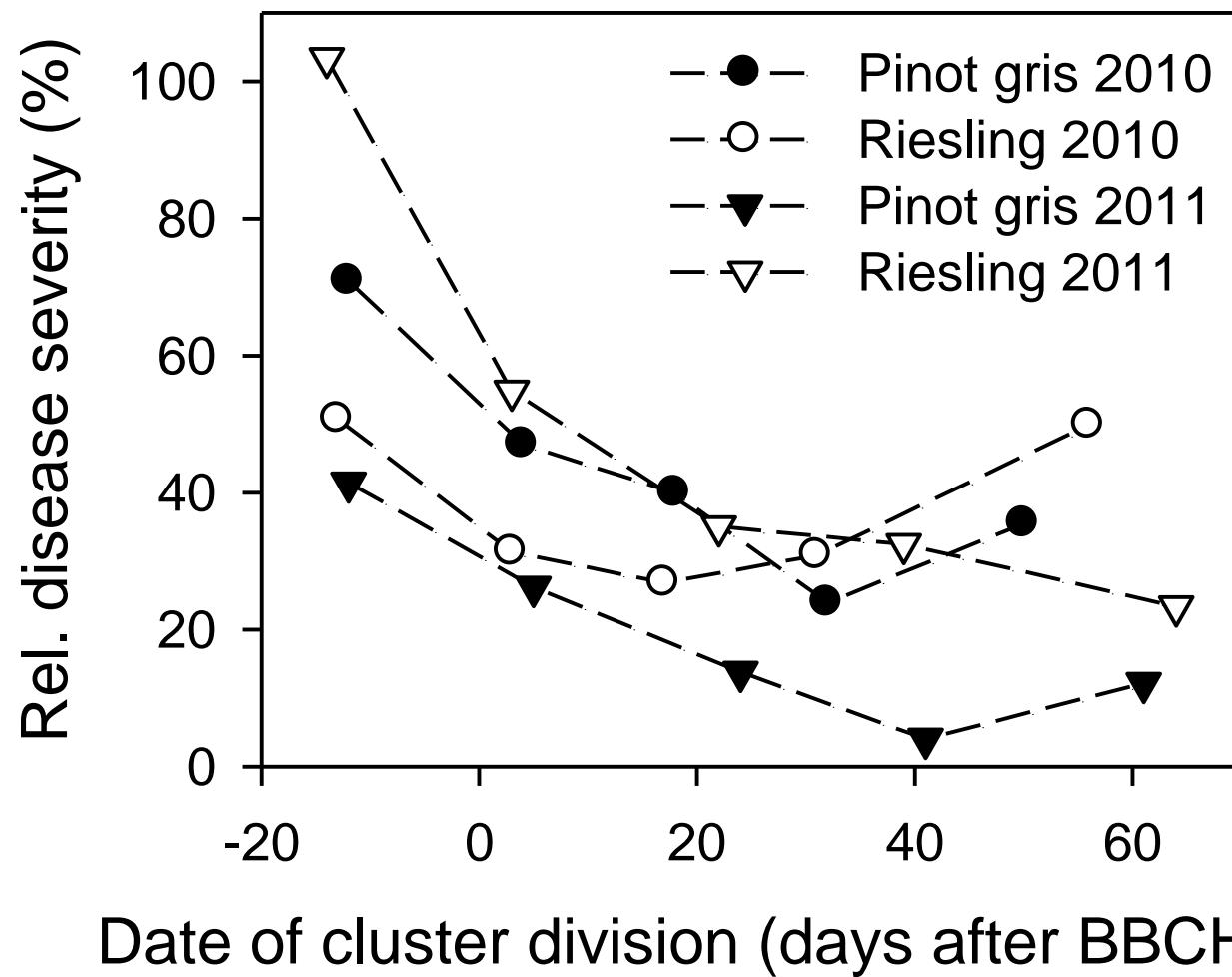
B. Cluster division

Control = 100%



B. Cluster division

Control = 100%



B. Cluster division

Pinot gris, 14.09.2011



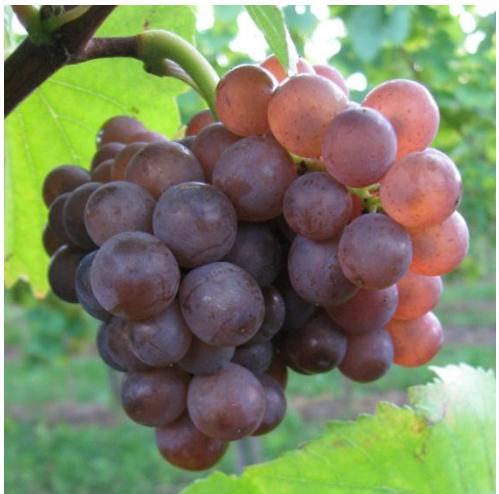
Kontrolle



BBCH 57



BBCH 73



BBCH 77



BBCH 79



BBCH 81

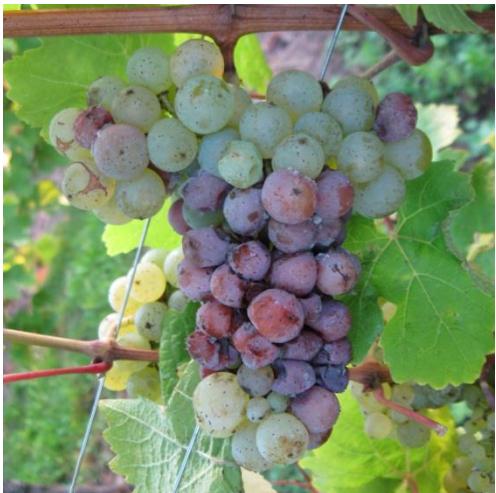


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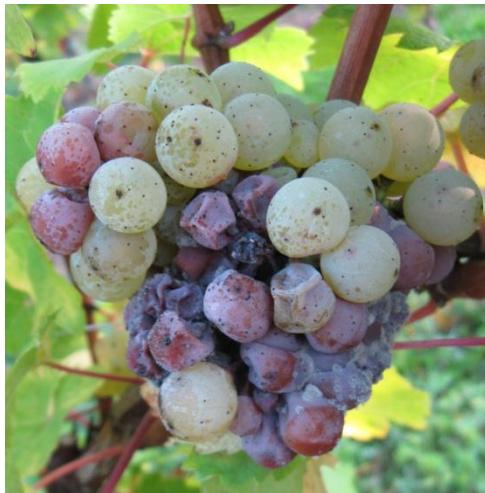


B. Cluster division

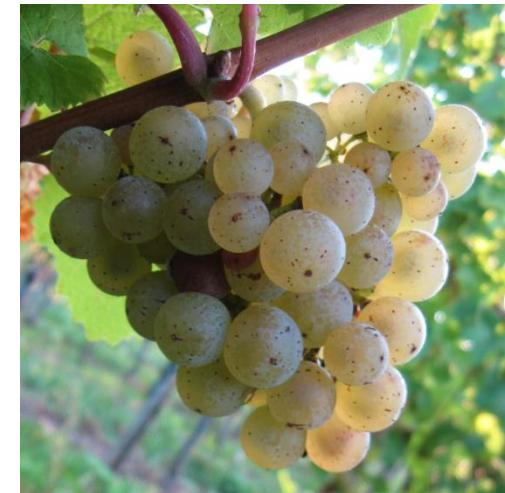
Riesling, 28.09.2011



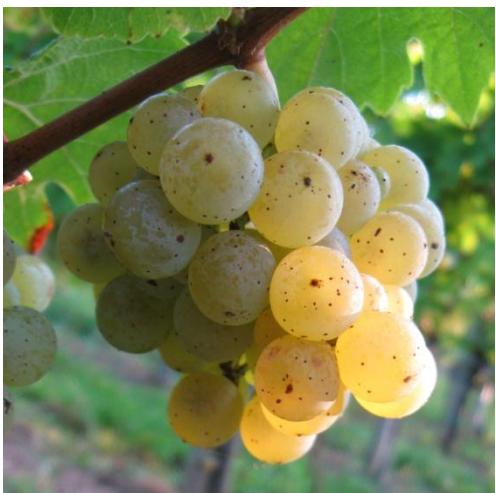
Kontrolle



BBCH 57



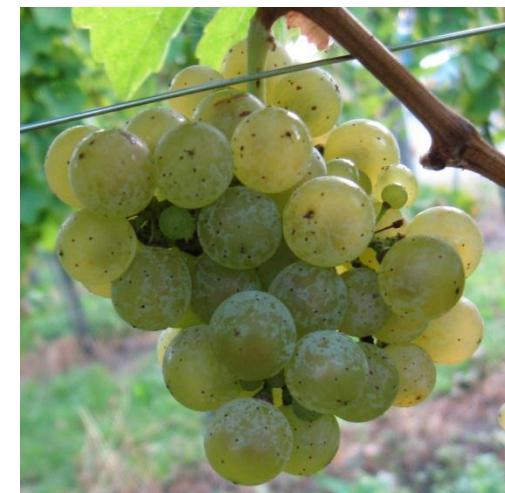
BBCH 73



BBCH 77



BBCH 79



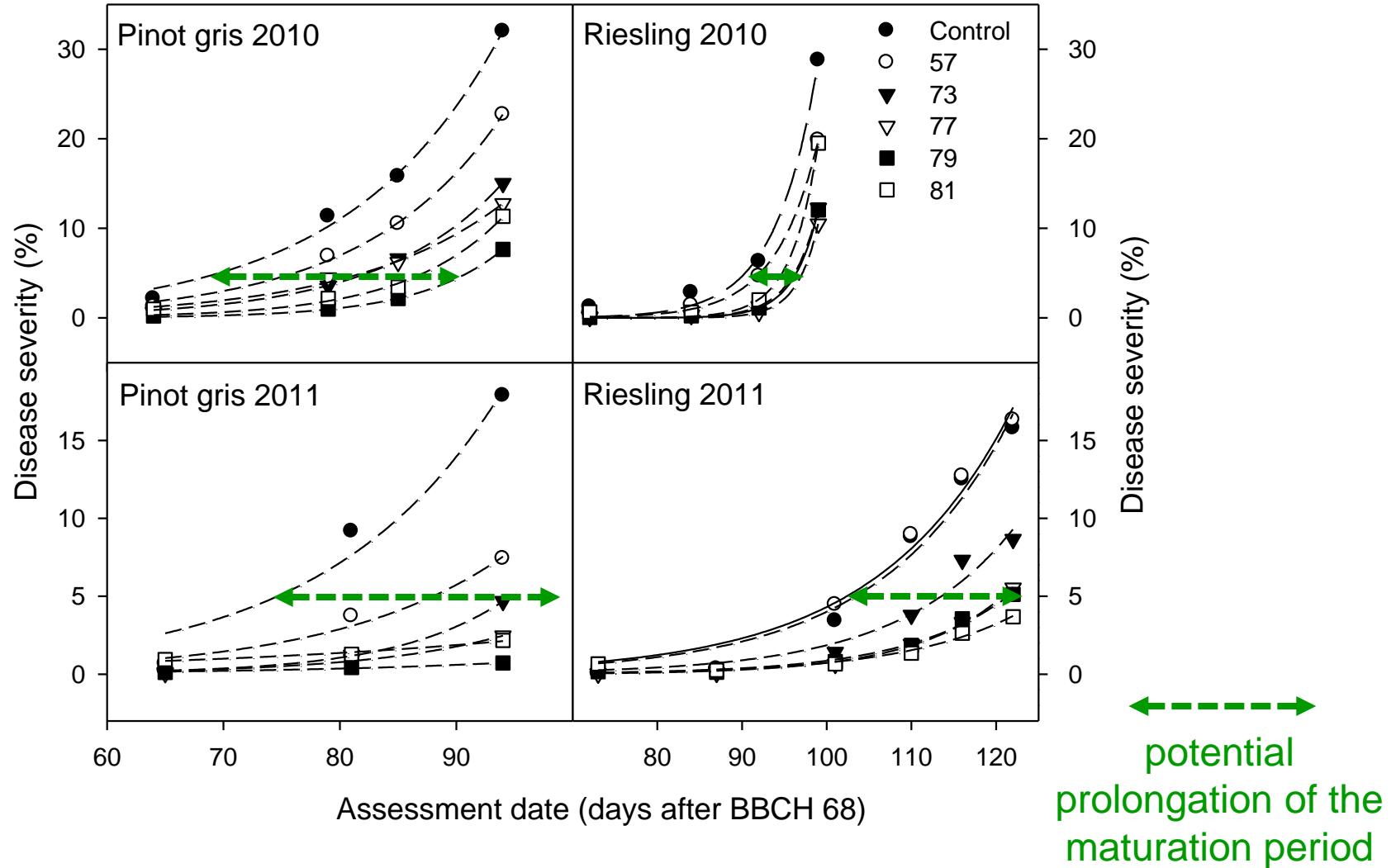
BBCH 81



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B. Cluster division



Conclusions

Cluster-zone leaf removal and cluster division represent efficient crop cultural measures to control grape bunch rot.

Both enable a reduction of pesticide input and can be incorporated in organic as well as in integrated grape protection strategies.



Further, the induction of a delayed bunch rot epidemic allows for a longer maturation period and a higher potential wine quality.

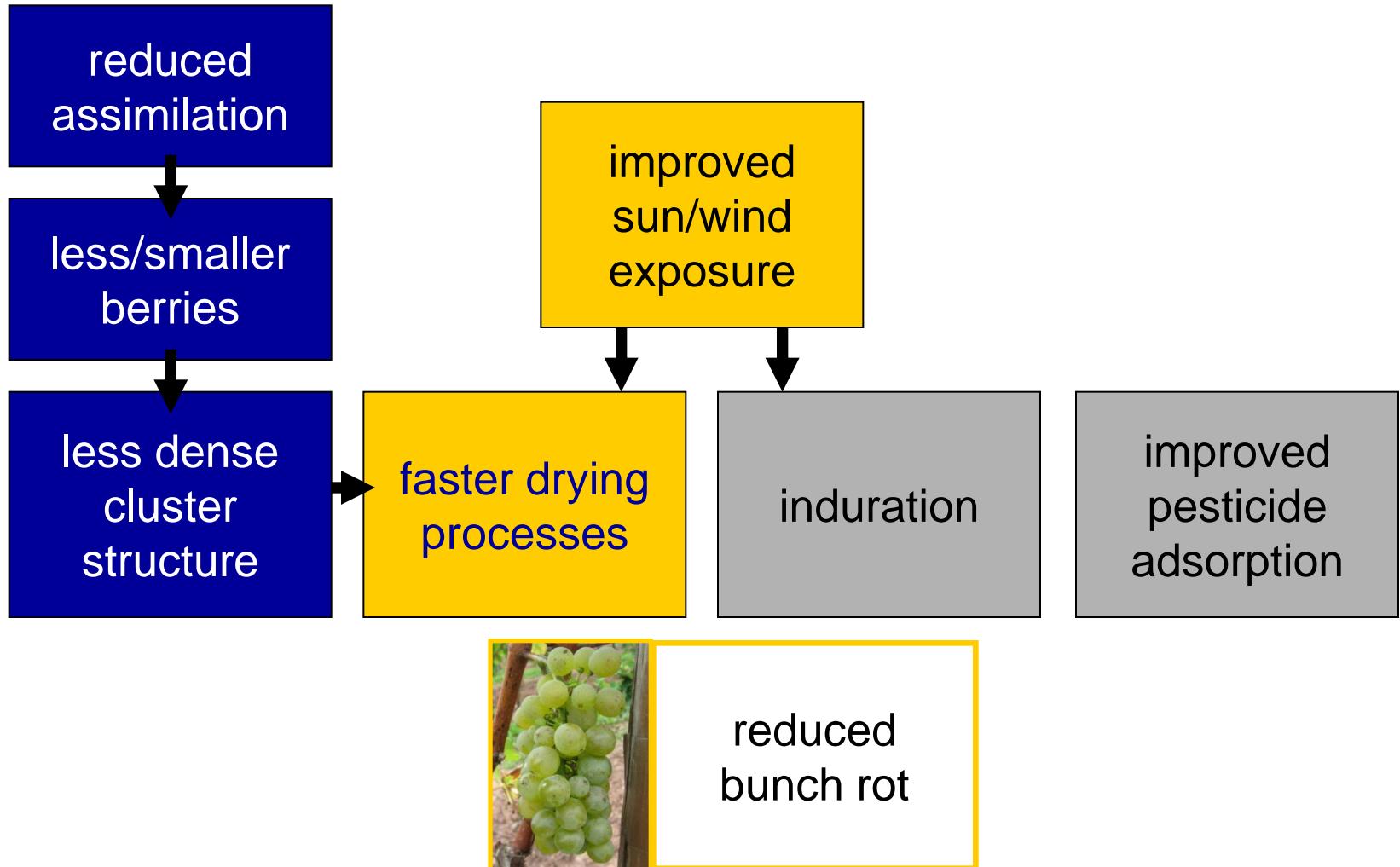




**Thank you very much for your
attention!**

A. Cluster-zone leaf removal

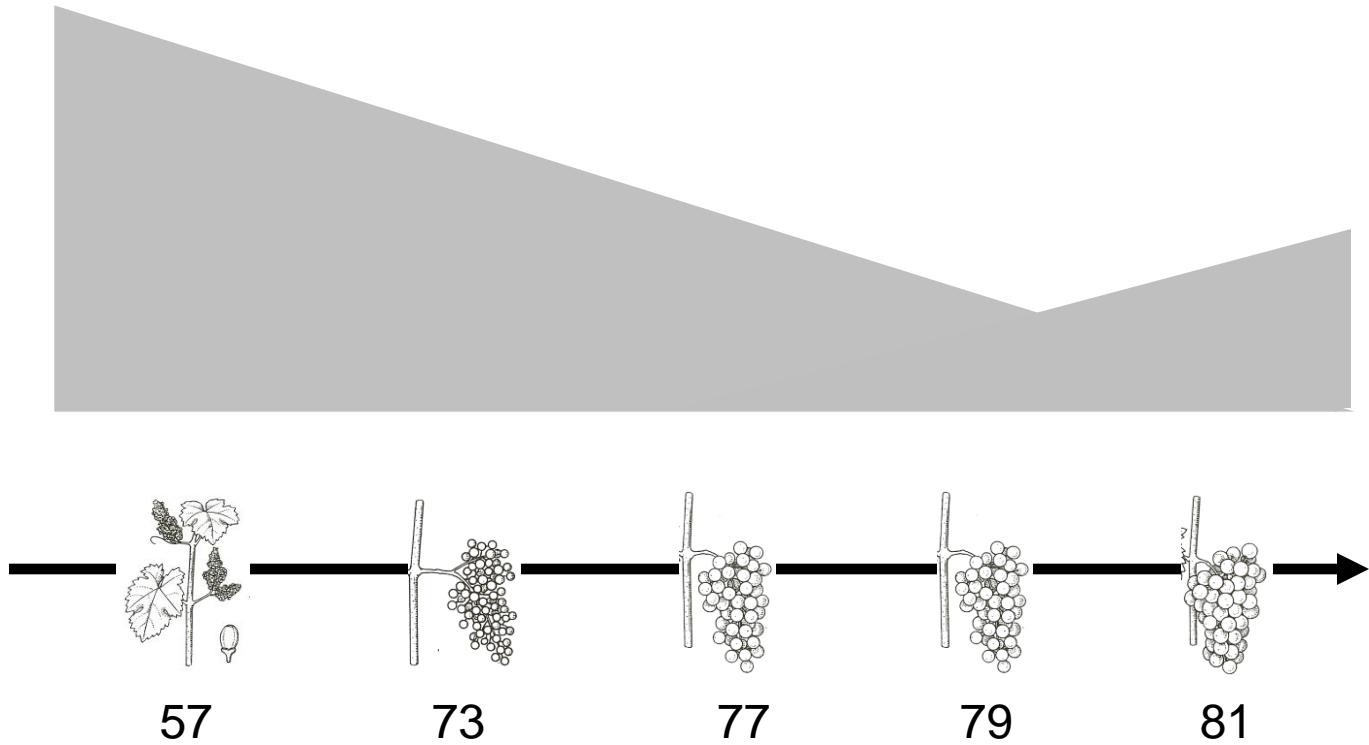
Cluster-zone leaf removal between bloom and bunch-closure



B. Cluster division



Bunch rot disease severity



BBCH stage at cluster division date