

# Quality of apple trees and apples in poultry free range areas

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**Introduction** An increasing number of poultry free range areas contain fruit trees as shelter for the chickens and to have some additional revenues for the farm. A professional orchard is only affordable if it is managed professionally and if there is enough good quality harvest. Research questions:

1. Are there any differences in tree health in relation to the distance to the stable?
2. Are there any differences in fruit quality in relation to the distance to the stable?

Distance to the stable is a measure for chicken density: close to stable a high density and stronger effects are expected.

**Methods** Investigations were done in orchards of 2-3 years old on 2 farms on 20, 50, 150 en 300 meter distance from the stable. Tree health was investigated by

1. counting dead and very weak trees
2. scoring growth rate of the trees
3. measuring tree heights
4. scoring leaf quality
5. counting the number of apples per tree.

Fruit quality was scored as damages/quality problems on the outside of a sample of 10 arbitrary chosen apples per tree.

The investigations are continued from May 2016 on.

## Results

**Table 1. Qualitative aspects of tree health and fruit in relation to distance to the stable**

Parameter	Effect closer to the stable
Shoot growth	Less and shorter shoots
Tree growth	Lower trees
Leaf quality	Lower quality
Number of apples	More apples on farm 1; no effect on farm 2
Fruit quality	More damaged apples: apple scap, blackrot, insect damage

See our abstract for details and differences between apple breeds.



Wet and bare soil close to the stable (50 m)



Situation further away from the stable (200 m)

## Conclusions

- Fruit and poultry do combine well during the first years after establishment of the orchard: good harvests can be achieved.
- If fruit is grown in a poultry free range area, measures are needed to compensate for the chickens' effects: cheaper/robust trees more close to the stable, soil management and dewatering.
- In organic fruit farming apple scab slowly increases over the years. Perhaps chickens can be of use by eating the leaves or speeding up decomposing the leaves in autumn and winter.

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