

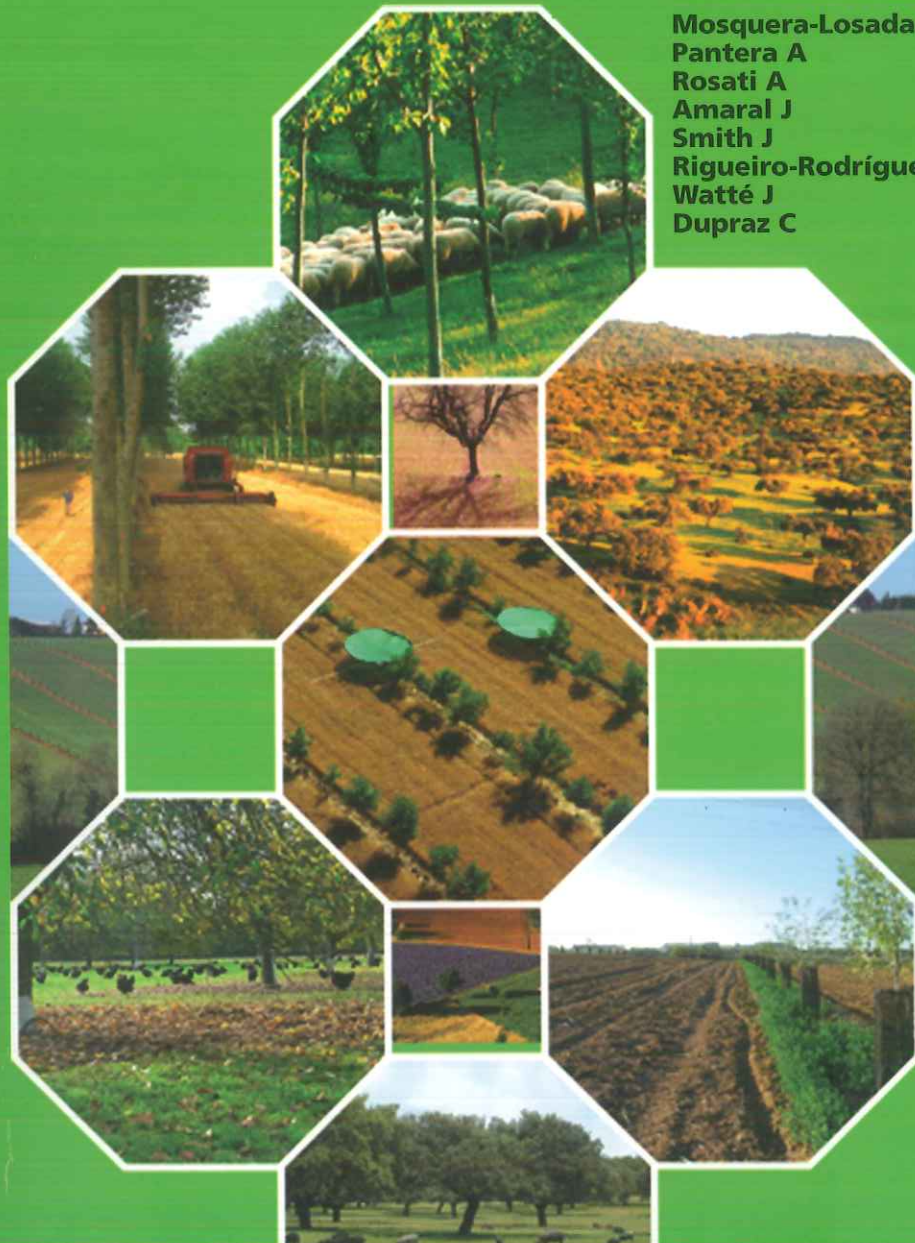
*Nick & Eberlein*

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**Book of Abstracts  
What priorities for European agroforestry?**

**Editors:**

**Mosquera-Losada MR  
Pantera A  
Rosati A  
Amaral J  
Smith J  
Rigueiro-Rodríguez A  
Watté J  
Dupraz C**



### **Agroforestry brings free range chickens back to their natural habitat**

*Bestman M, Wagenaar J, van Eekeren N*

*Louis Bolk Institute, Driebergen, The Netherlands; e-mail: m.bestman@louisbolk.nl*

In the Netherlands about 20% of the farms with laying hens have a so-called free range area. However, on many farms only a minority of the animals is seen outside. As part of a larger study on laying hen welfare we collected data about the free range area. We investigated how many animals actually used the provided area and the relation with feather pecking, the presence of which in laying hens is a measure for animal welfare. In our poster we present the results of that study, which together with other aspects of the range areas give rise to our present work on agro-forestry in poultry free range areas. We visited 63 flocks of organic laying hens on 26 farms. All flocks were 50 weeks or older. Plumage damage scoring was done on a sample of 40 hens. The farmers were asked to estimate the maximum percentage of their hens that was seen outside simultaneously under 'perfect' conditions. We estimated the percentage of shelter in the outdoor run. Shelter was defined as 'vegetation or artificial cover of at least 1 meter high'. Multiple linear regressions were used. The first model showed that severe feather pecking did not occur when at least 66% of the hens made use of the outdoor run. The second model showed that the percentage of hens outside was higher in case of smaller flock size, a younger age of purchase of the hens, more cockerels between the hens and in case of a higher percentage of cover in the run. Since this study was done, the number of free range farms increased. At present the amount of shelter to 'lure' hens outside, the peak mineral load on the soil, the costs of an effective, well managed range and poor biodiversity have gained attention from several stakeholders. With agro-forestry several of these troubles can be tackled. Animal welfare increases as chickens are kept in a systems that resembles their natural habitat. Moreover, trees distributed over the whole outdoor run surface make more hens use it more evenly distributed, which spreads the mineral load. Minerals will be used by the growing trees. Trees provide a variation of microhabitats for other animal and plant life, which increases the biodiversity. Depending on the type of trees, fruits, branches or roots can be harvested and used. Subject of our research among others is the profitability of the system. In the Netherlands we have examples of tree-nurseries, grapes and other fruits in chicken outdoor runs. In a participatory network with poultry farmers called 'trees for chickens' we will further develop silvopastoral systems.

#### **References**

Bestman MWP, Wagenaar J 2003 Farm level factors associated with feather pecking in organic laying hens. *Livestock Production Science* 80:133-140

## Agro-forestry brings free range chickens back to their natural habitat

Monique Bestman, Jan-Paul Wagenaar and Nick van Eekeren  
Louis Bolk Institute, Driebergen, The Netherlands, m.bestman@louisbolk.nl

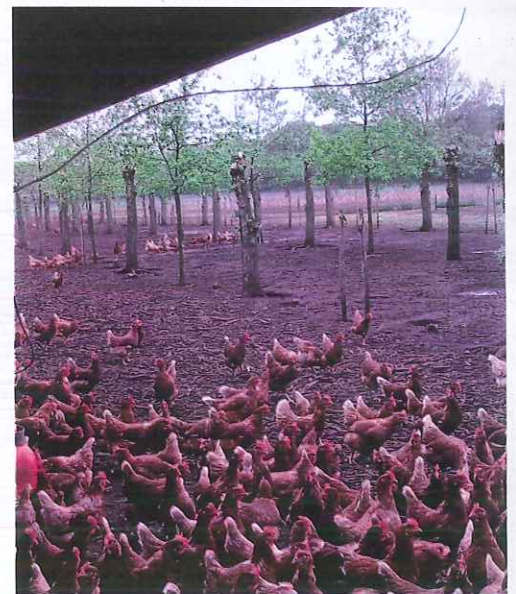
In the Netherlands about 20% of the farms with laying hens have a free range area. In our study<sup>1</sup> among 63 flocks on 26 farms we found out that

- Severe feather pecking did not occur in a flock when at least 66% of the hens of that flock made use of the outdoor run
- The percentage of hens outside was higher in case of smaller flock size, a younger age of purchase of the hens, more cockerels between the hens and with a higher percentage of the range covered with natural or artificial 'shelter'

At present, the amount of shelter to 'lure' the hens outside, the peak mineral load on the soil and ground water, the costs and poor biodiversity have gained the attention of several stakeholders. In the participatory network *Trees for chickens* we will further develop sylvopastoral systems in chicken free range areas in order to tackle these troubles.



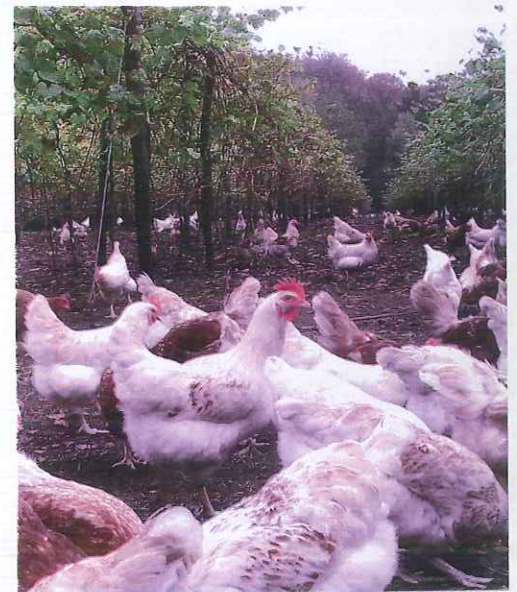
Tree nursery in the chicken run



A thick layer of shredded branches keeps the run dry after rainfall



Chickens and willows



Chickens and grapes

<sup>1</sup> Bestman, M.W.P. and J. Wagenaar (2003). Farm level factors associated with feather pecking in organic laying hens. *Livestock Production Science* 80: 133-140