

Possible sources of selection bias in a field study on broiler welfare – first results

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Introduction

The EU legal rule 2007/43 has to be put into national law until 2010. The most important change that concerns broiler production in Germany is the increase of the maximum admissible stocking rate of broilers above 35 kg/m². According to the EU legislation, farmers are allowed to fatten their broilers up to 33 kg/m² and 39 kg/m² or even 42 kg/m² when observing special requirements. In the course of putting the directive into national legislation the Lower Saxonian Ministry of Food, Agriculture, Consumer Protection and Rural Affairs authorized the IBEI⁽¹⁾ to set up a field study on the minimum welfare requirements for the housing of broiler chickens.

The Study



Data collection: Oct. 2008 – Oct. 2009
Questionnaire: 1 on herd management + 1 concerning the specific fattening period
Preparation of analyses: Comprehensive plausibility checks considering possible maximum and minimum parameter values, calculations based on various parameters, etc.
Conditions: at least 1 questionnaire on herd management and 1 concerning the specific fattening period - per herd
Study population: 126 farms, 298 herds, 1.560 fattening period, 5.23 fattening period per herd (2.63 std) from 11 districts

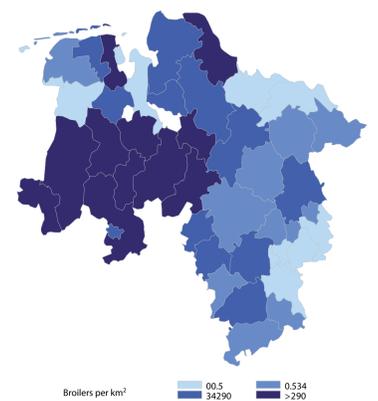


Fig. 1: Distribution of broiler chicken in Lower Saxony per district

Selection bias due to...

... recruitment process:

Participating farms were recruited by the Lower Saxonian poultry production lobby (NGW). It can be assumed that this association preselected food performing farmers.

...restrictions in study course:

The study should take place in the 10 districts with the highest broiler production (see fig. 1). Fact is, that participating farms are located in only 6 of these 10 districts (and in 5 other). This was due to restrictions on personnel and time in the veterinary offices, by whom questionnaires were collected.

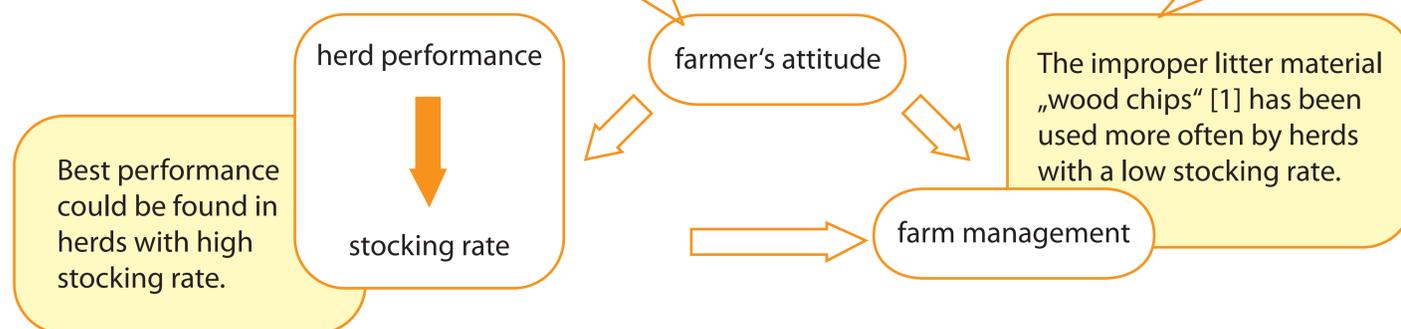
Supposing that attitude and farm management is influenced by the surrounding circumstances around farm and farmer, results could be influenced by the composition of the study population.

...study design:

Participating farms were allowed to fatten broilers under the conditions of the EU legislation, if they fulfilled specific requirements:

- no deficiencies were found within the past 2 years by veterinary officers
- the guidelines for good farm practice are being observed
- the total mortality rate has been < 1% (+ 0.06% * animals' age) for at least 7 fattening periods
example: for 28 day old broilers = 2.68% max. adm. mortality rate
- Personal knowledge improvement via special courses
- Appropriate technical preparation on the farm

Only good performing farms (low mortality rate, high weight) are allowed to fatten with a high stocking rate:



First results indicate an influence of

- selection bias (2,3) generating paradox study results
 - confounding by parameters, that were not investigated in this study i.e. personal, individual attitude, attention and awareness of the farmer
- Further analyses on the effect of selection bias and confounders are ongoing and will be presented.

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