

## IMPROVEMENT OF HEALTH AND WELFARE OF DAIRY COWS AND FATTENING PIGS IN "ANIMAL FRIENDLY" HOUSING SYSTEMS

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### Summary

Indicators for the assessment of health and welfare on farms were established and validated. These indicators were used to evaluate the impact of "animal friendly" housing on dairy cows and fattening pigs.

Health and welfare were compared among 136 dairy farms with three different production systems: traditional tie stalls, tie stalls providing regular exercise in an outdoor yard, and free stalls with regular exercise outdoors. Lameness, skin lesions at the tarsal joints and teat injuries were found less frequently in free stalls compared to tie stalls. Fewer treatments with antibiotics were recorded in free stalls than in tie stalls. Tie stalls with regular exercise differed from traditional tie stalls in a lower prevalence of gait abnormalities and teat injuries.

On 84 swine fattening farms, health and welfare of pigs was compared among traditional indoor farms with slatted floor pens, and farms providing straw bedding and an outdoor yard. "Animal friendly" farms had a lower prevalence of recumbent pigs, tail biting, skin injuries at carpal and tarsal joints, and skin alterations at the snout. Pigs were also found to be dog sitting less frequently in "animal friendly" farms. Sunburn was observed in a few "animal friendly" farms only. Overall, it could be shown that the "animal friendly" systems had a substantial positive effect on health and welfare of the animals.

Key words: swine, cattle, husbandry systems, animal welfare

### Introduction

In Switzerland, the government provides incentives to farmers to keep their animals in housing systems that are well adapted to their behavioural needs.

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Two housing and management systems that are considered good farming practice in terms of animal welfare have been supported since 1993. RAUS (regular access to outdoor facilities) supports farmers who let their animals outside on a regular basis. BTS (improved indoor housing systems) supports farmers, who keep their animals in housing systems that are especially well adapted to the animals' needs. Most dairy and pig farms that fulfil BTS criteria also participate in the RAUS program.

For dairy cows, RAUS regulations require regular exercise in an outdoor yard or on pasture. In 2001, 61% of all cows in Switzerland were kept in farms that participated in the program RAUS (Swiss Federal Office for Agriculture 2002). Seventeen percent of cows were housed in free stalls fulfilling BTS criteria. For fattening pigs, BTS is defined as a housing system with multiple areas, and straw bedding in the lying area. Fifty-three percent of pigs are produced in BTS systems. Because most of these farms also have outdoor access, the participation rate for RAUS is almost as high (49%).

The objective of this research was to evaluate the effectiveness of the two programs RAUS and BTS in improving animal health and welfare.

#### *Materials and methods*

An epidemiological field study was conducted on dairy farms (Regula et al. 2003). Farms participating in the program RAUS, or both programs (BTS+RAUS) were compared with a control group of traditional tie stalls with minimal exercise during winter. A random sample of 45 farms from each housing type were included in the study. Each farm was visited 3 times during a 2-year period. Farm managers were interviewed on management practices, and the housing system was described. A short clinical examination was performed on each dairy cow. The emphasis was on recording injuries around the joints and at the trunk, and on observing lameness in cows walking to pasture. The behaviour of cows during lying and rising was recorded. Medical records were also collected.

In a study on 84 swine fattening farms, (Cagienard et al. 2003), health and welfare of pigs was compared among traditional indoor farms with slatted floor pens, and BTS+RAUS farms providing straw bedding and an outdoor yard. Four farm visits were conducted during two fattening periods. A general herd health evaluation of all pens in the stable and individual clinical examination of 20 to 30 pigs of the herd was conducted at each visit. Indicators for health and welfare were presence of lesions on the snout, ears, shoulders, legs and tail. Whole herd clinical examination included lameness, respiratory

disease, diarrhoea, tail and ear biting, skin injuries, abscesses, sunburn, and behavioural abnormalities such as dog sitting. In addition to the health and welfare parameters, information on management practices, and medical treatment records were collected during an interview with the farmer. The effect of the housing programs on the different indicators for health and welfare was assessed by multiple regression analysis, which corrected for farm effect and other confounding factors.

### *Results*

Significant differences between housing types were found for lameness, alterations at the tarsal joints, calluses at the carpal joints, teat injuries, space for lying, and medical treatments. Farms with free stalls and regular exercise had, on average, 5% cows less with lameness than tie stalls with minimal exercise. Farms with tie stalls and regular exercise had 4% less lame cows compared to the control group with minimal exercise. Alterations at the tarsal joints were 21% less frequent in cows in free stalls with regular exercise than in the control group. Farms with tie stalls and little exercise of cows during winter needed, on average, 6.3 treatments per 10 cows and year, 5 of which were antibiotic treatments. Free stalls averaged 2 treatments less, 1 of which was an antibiotic.

Swine fattening farms with multiple areas, straw bedding and outdoor access had a lower prevalence of several indicators of health and welfare compared to traditional farms. On average, the prevalence of recumbent pigs in "animal friendly" farms was reduced by 0.4% compared to traditional farms. Tail biting was reduced by 7%, skin injuries at carpal joints by 61%, and skin injuries at tarsal joints by 73%. Skin alterations at the snout were 5% less frequent in "animal friendly" compared to traditional farms. Pigs were also observed less frequently in a 'dog sitting' position in "animal friendly" farms. "Animal friendly" farms tended to use less in-feed antibiotics than traditional farms. Sunburn was observed in a few "animal friendly" farms only.

### *Discussion*

Several useful indicators for the assessment of health and welfare on the farm could be identified for dairy cows and fattening pigs. In "animal friendly" systems, improvements were observed for several aspects of health and welfare, when compared to traditional production systems. However, many different

factors associated with farm management and housing system also influenced health and welfare status of the animals. With an optimised farm management, a clear benefit of "animal friendly" over traditional systems was observed.

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## POBOLJŠANJE ZDRAVLJA I DOBROBITI MLIJEČNIH KRAVA I TOVNIH SVINJA U SUSTAVIMA "ŽIVOTINJAMA NAKLONJENOG" SMJEŠTAJA

### Sažetak

Utvrđeni su i potvrđeni pokazatelji za ocjenjivanje zdravlja i dobrobiti na farmama. Ti su pokazatelji upotrijebljeni za procjenu djelovanja "životinjama naklonjenog" smještaja na mliječne krave i tovne svinje.

Zdravlje i dobrobit uspoređeni su na 136 farma mliječnih krava s tri različita sustava proizvodnje: tradicionalno vezanje u štali, vezanje u štali s redovitim izlaskom u otvoreno dvorište, te slobodno držanje u štali s redovitim boravkom na otvorenom. Hromost, lezije na koži na tarzalnim zglobovima i povrede sisa bile su rjeđe kod slobodnog držanja u štali u usporedbi s vezanim držanjem. Manje tretiranja antibioticima zabilježeno je kod slobodnog držanja u štali nego vezanog držanja. Vezano držanje, s redovitim izvođenjem razlikovalo se od tradicionalnog vezanog držanja u štali po manjoj pojavi nepravilnosti hoda i povreda sisa.

Na 84 farma za tov svinja zdravlje i dobrobit svinja uspoređeni su između tradicionalnih zatvorenih farma s boksovima s rešetkastim podom i farma koje pružaju slamnatu stelju i otvoreno dvorište. "Životinjama naklonjene" farma imale su manju pojavu neaktivnih svinja, grižnje repova, kožnih povreda na karpalnim i tarzalnim zglobovima, te promjene kože na gubici. Na "životinjama naklonjenim" farmama svinje su rjeđe sjedile u psećem položaju. Opekotine od sunca primijećene su samo na nekoliko "životinjama naklonjenih" farma.

Općenito se može reći da su "životinjama naklonjeni" sustavi imali značajan pozitivan učinak na zdravlje i dobrobit životinja.

Ključne riječi: svinja, govedo, sustavi gospodarstava, dobrobit životinja

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