

A field study of access to day light, ammonia, plumage condition and mortality in loose housed laying hens in south east Sweden

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Conventional (non-furnished) cages were banned in Sweden in 1999, and since 2009 no hens are housed in conventional cages. On January, 1st 2011 Sweden had 6.5 million hens, housed in organic systems (11.5%), loose housed (53.3%) or in furnished cages (35.2 %). In Sweden older barns with single tiered litter system commonly do not have a mechanical manure removal system. Windows for access to daylight is a legal requirement, but windows can be covered. The aim of this study was to survey the health and welfare of laying hens in the county of Östergötland, south-east Sweden. Animal welfare inspectors collected data from 81 (of 140) commercial loose housed layer flocks during 2007. Data regarding buildings, housing systems, environment and clinical health of the birds were recorded. Of the flocks included, 66% were housed in single-tiered litter system, 17% in furnished cages and 17% in multi-tier systems. Of the 23 flocks with windows used for daylight, 30% had damaged plumage, compared to the 58 flocks without windows for day-light, of which 50% had damaged plumage. Hence, day-light does not seem to lead to more plumage damage here. Nine flocks had developed cannibalism, of which three had access to daylight and six did not. The atmospheric ammonia levels were significantly ($p<0.05$) higher (24.6 ppm) in barns without a mechanical manure removal system, compared to houses with mechanical manure removal (15.1 ppm). Furthermore, flocks exposed to aerial ammonia levels exceeding 25 ppm, showed significantly higher mortality (3.7%) when inspected, compared to flocks where the ammonia level was below 25 ppm (1.9%; $p<0.05$). To conclude, daylight access had no significant negative effect on plumage condition. Barns without a manure removal system had higher aerial ammonia levels than barns with such a system, and flocks where ammonia levels exceeded 25 ppm showed increased mortality.