

ASSESSMENT OF AMMONIA AND CARBON DIOXIDE CONCENTRATIONS IN A BREEDING HEN BUILDING UNDER PORTUGUESE WINTER

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MESSAGE

Excessive NH₃ and CO₂ concentrations in the housing of breeding hens can cause various negative effects on the health of hens and the welfare of the workers who care for them.

AIM

Evaluate NH₃ and CO₂ concentrations in the first month of housing the breeding hens during Portuguese winter.

METHODS

One modern breeding hen building located at Quinta da Cruz (Soure, Portugal; lat.: 40.024176°, long.: -8.629285°).

5-months old birds (6864 female and 720 male) were housed in the building on 7 November-2016 and the measurements were made between 10 and 30 November-2016.

Gas concentrations measured with a photoacoustic field gas-monitor (INNOVA 1412) and indoor air samples collected every 2-minutes by a multipoint sampler (INNOVA 1409).

RESULTS

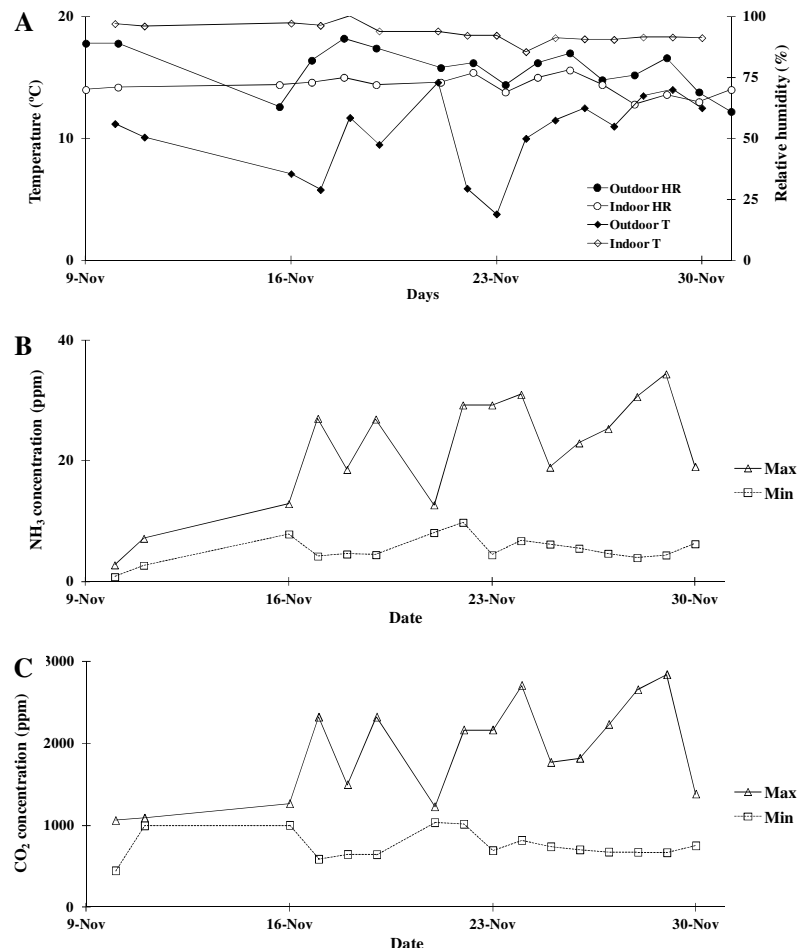


Fig. 1 Outdoor and indoor temperature and relative humidity (A) and ammonia (B) and carbon dioxide (C) concentrations in the hen building.

CONCLUSION

The NH₃ concentrations exceed 20 ppm during the first month of housing the breeding hens and under winter environment, leading to potential negative effects on the health of hens and the welfare of the farm workers. Mitigation measures will be needed to maintain the NH₃ levels below 10 ppm.