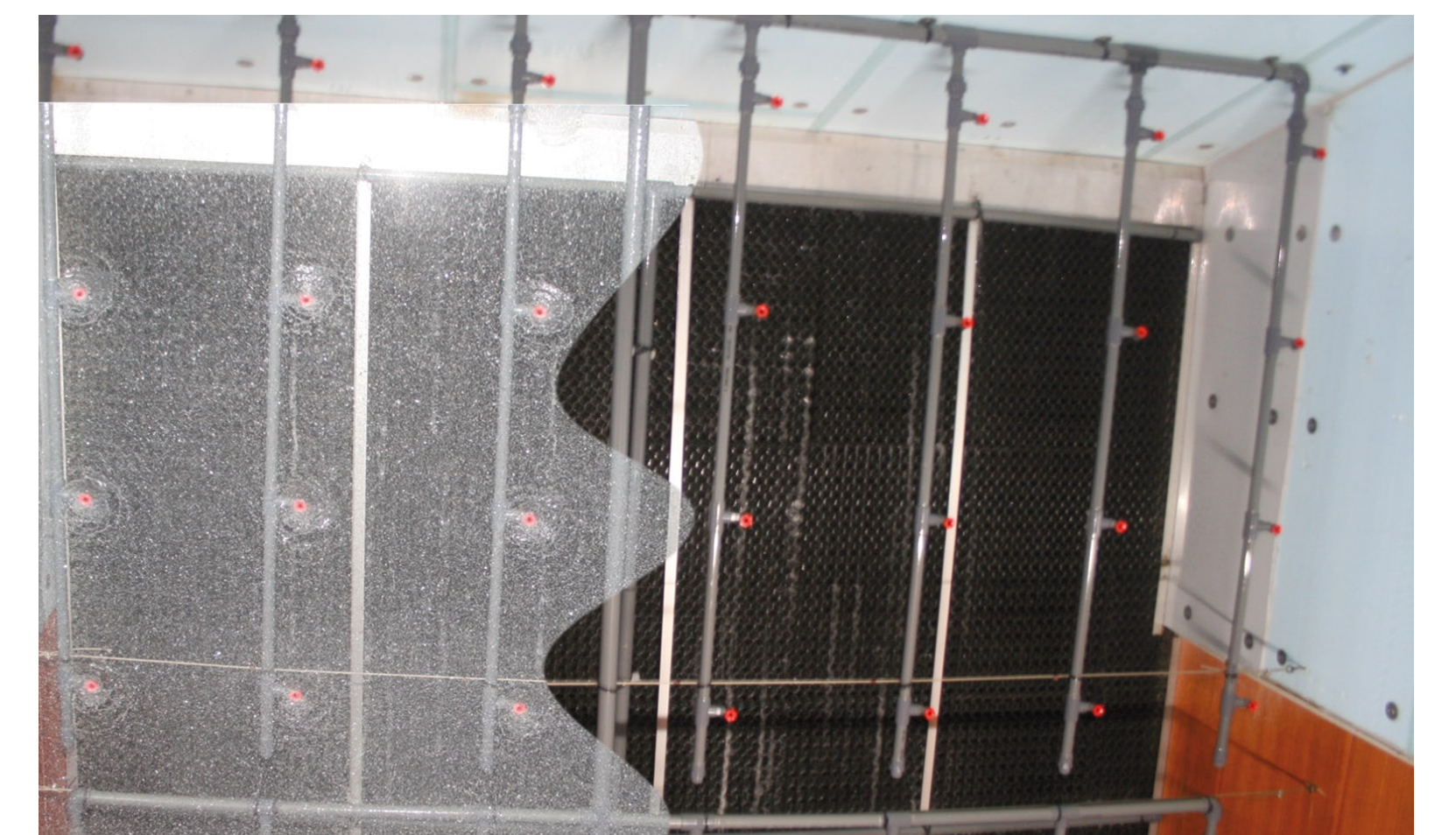




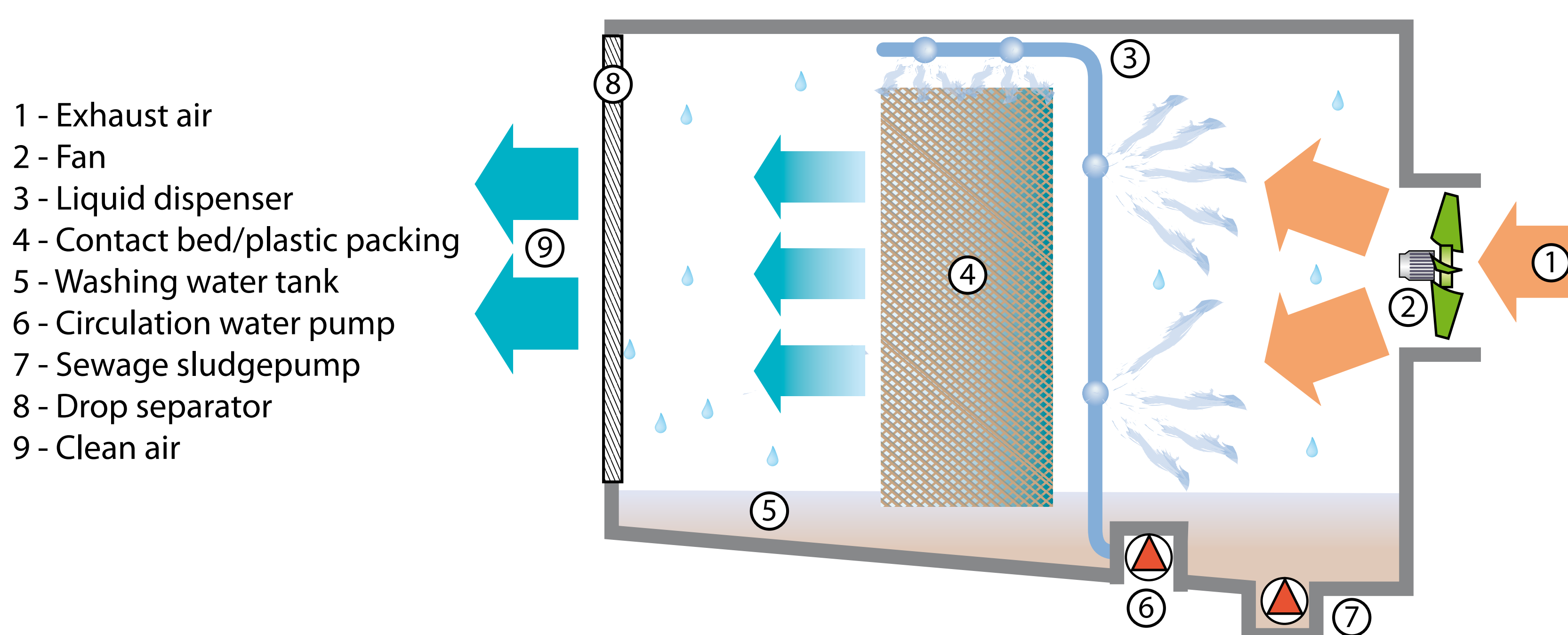
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Due to growing conflicts between breeders and neighbourhood – essentially based on odours – some exhaust air treatments, like wet scrubber have gained in importance in practice. Because of the way it works, surface and times of contact between wet scrubber and exhaust air are the essential parameters conditioning the efficiency of this treatment. Results showed in this poster are the results of several studies achieved in experimental and commercial farms.



Design of wet scrubber with its main functional elements



Air speed in relation with ammonia efficiency

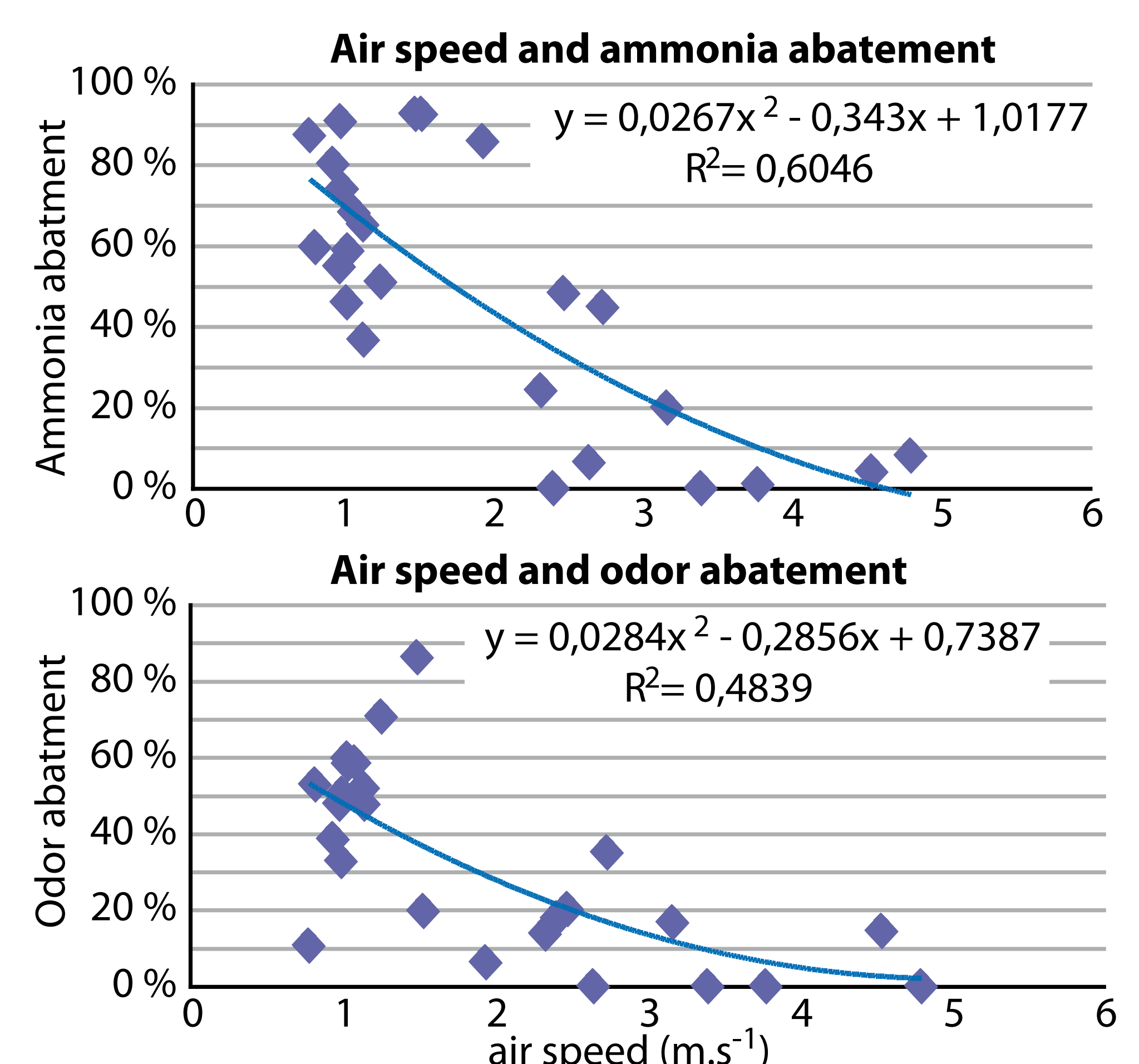
High value of air speed in wet scrubber limit the duration of contact between water and microorganisms and limit the efficiency of the air treatment. With our data, air speeds over 1.5 m.s⁻¹ reduce ammonia efficiency under 50 %. Basing on this air speed limit, calculation of packing bed surface is used for practical application. The small relation between air speed and odour abatement illustrates the biological action of scrubber on odorous compounds.

Impact of emptying on odour and ammonia abatements

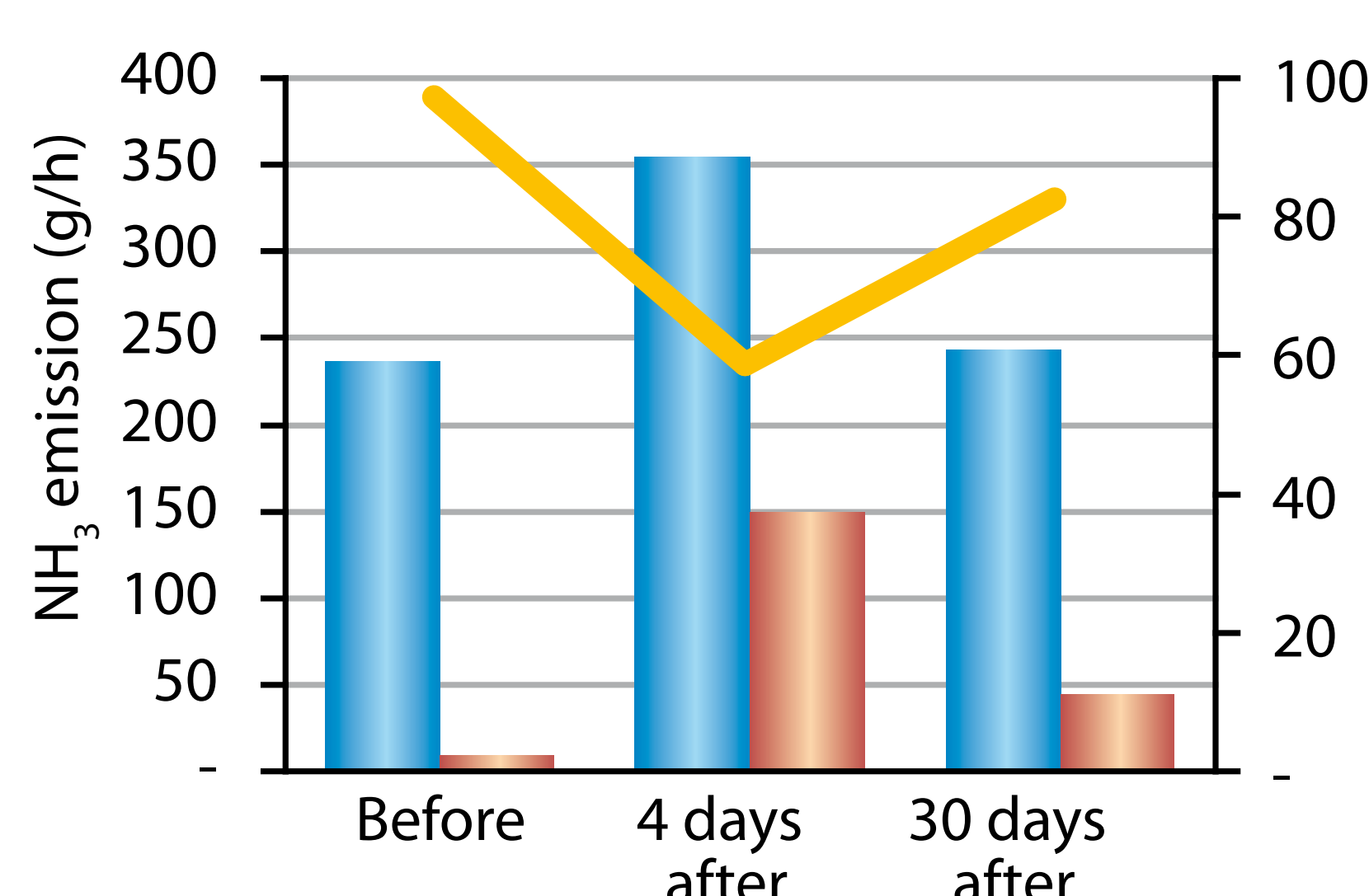
The emptying considerably reduced the odour's efficiency. Four days after emptying, the odour's efficiency is close to 10 % vs 40 % before emptying. Duration of one month appears to be necessary to reach the efficiency level measured before. Impact on ammonia shows that the efficiency of wet scrubber is not only connected to its solubilisation in water. In our study, biological effect of wet scrubber is responsible of close to 30 % of odour abatement.

Wet scrubber : how does it work ?

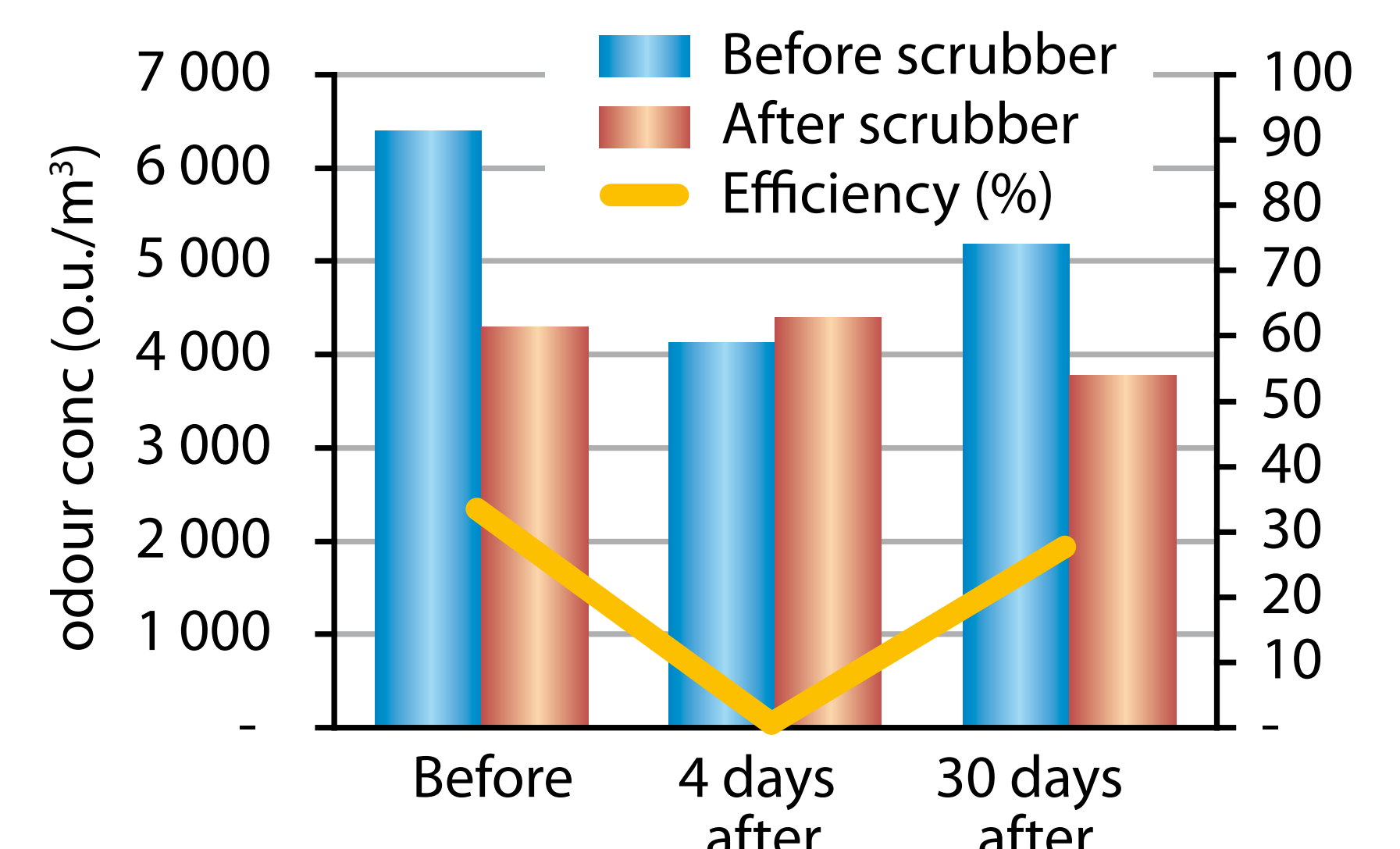
Physical and chemical action	Solubilisation (mainly ammonia)
	Sedimentation of dust (ammonia and odours)
Biological action	Biological degradation of compounds (odours)



Emptying and ammonia efficiency



Emptying and odour efficiency



Conclusion

The efficiency of wet scrubber is a combination of a physical-chemical action and a biological one. Efficiency over 50 % on ammonia and odours can be reach only with water if air speed is under 1.5 m.s⁻¹. Incidence of emptying was highlighted with this experiment. New studies on the frequency of washing water draining in order to reach a correct efficiency on odours and ammonia and limiting the water consumption are necessary.