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# Revolutionizing Respiratory Disease Control with AI: The Power of Real Time Sound-Based Herd Monitoring

Supachai Jamawat



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# Topics

1. **Sound Monitoring Technology introduction**
2. **International update**
3. **Learning from the field**



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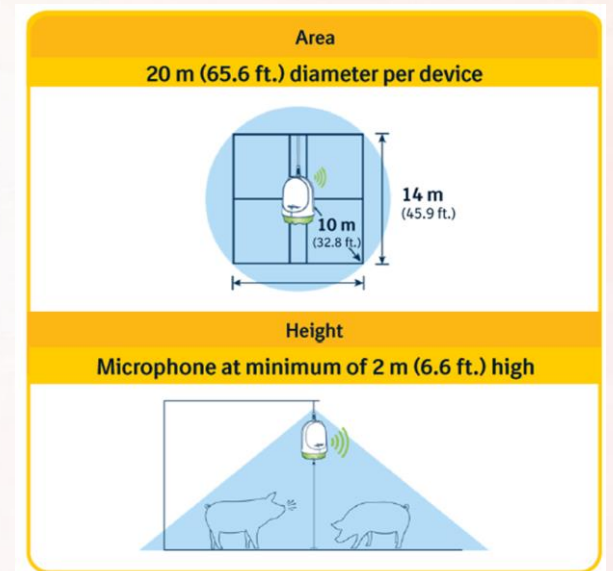
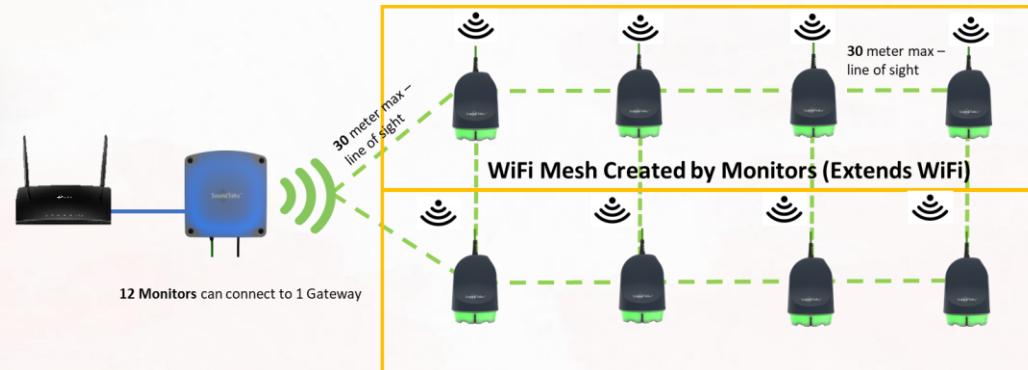
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Sound monitoring technology

Detects early symptoms of respiratory distress

Visuals/alerts in mobile app and webpage



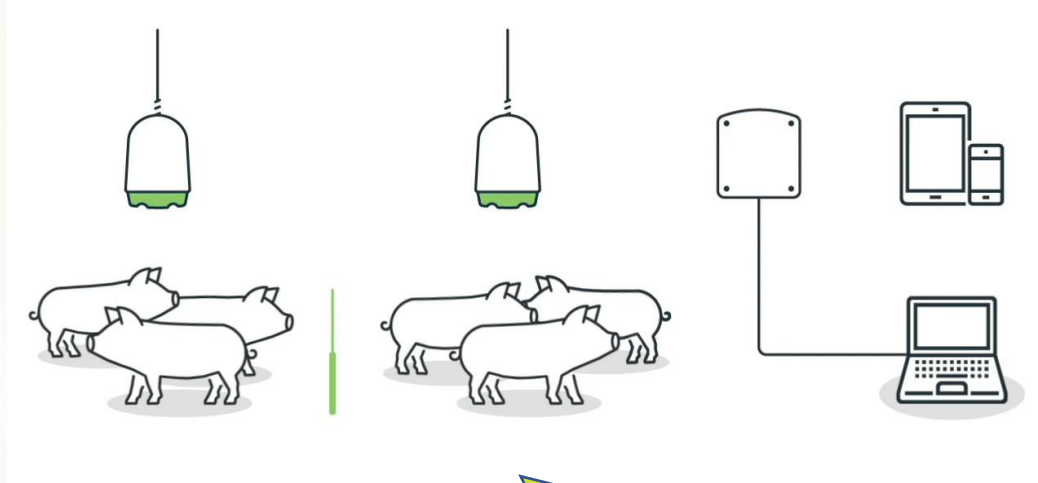


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## Sound Monitoring Technology principle



Early detection, early intervention



Respiratory Health Status

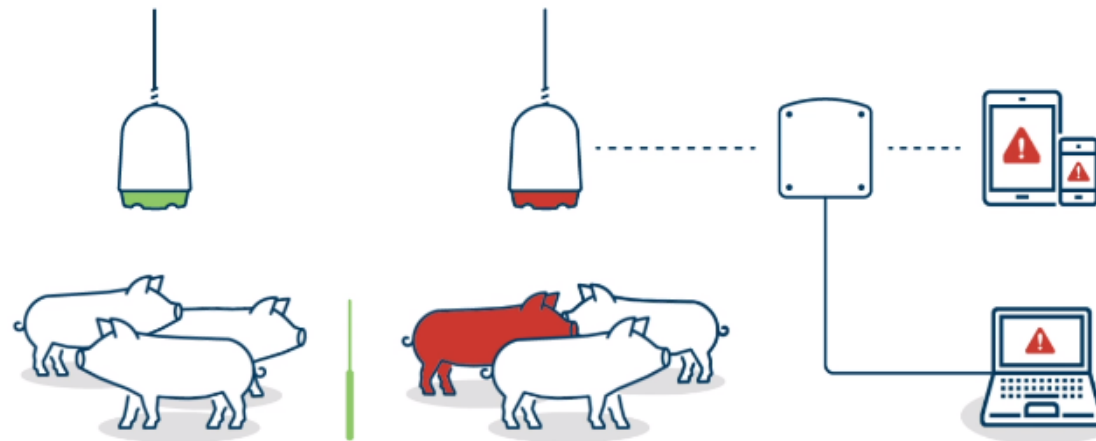




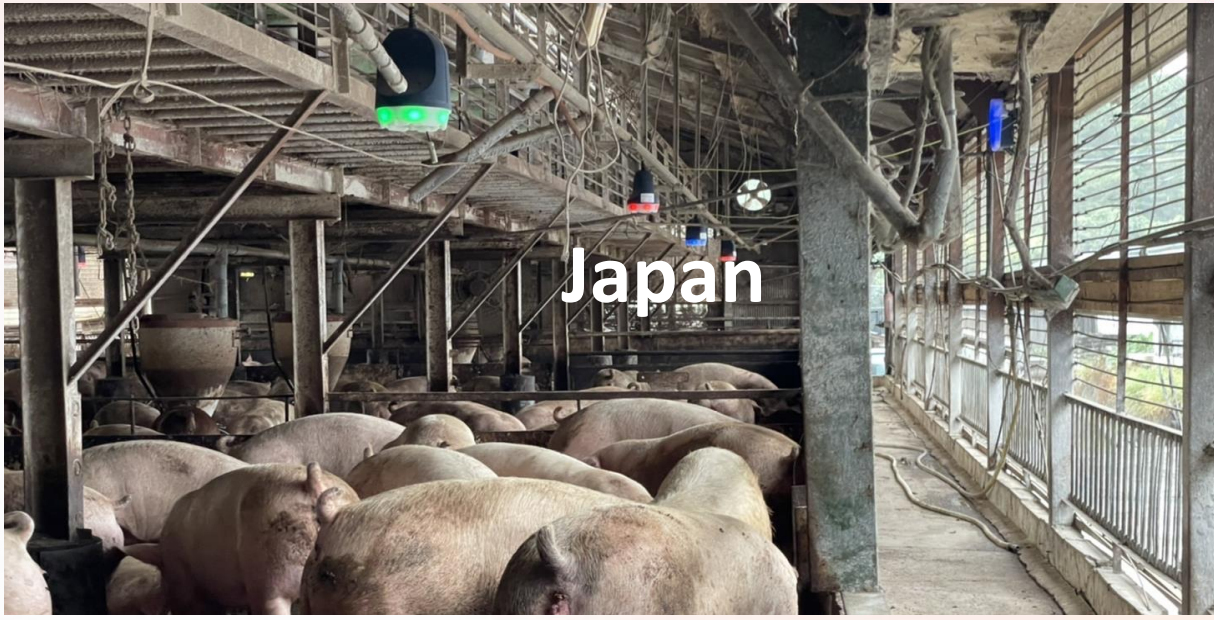
## Sound Monitoring Technology (ST): International update

Real-time alarms (Respiratory Health Status) in  
SoundTalks<sup>®</sup> equipped barns around the world

1 0 5 . 8 9 4



# Sound Monitoring Technology has been installed in various type of barns





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INTERNATIONAL UPDATE



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# 1 Sound Monitoring Technology is as reliable as well-trained staff (24/7)



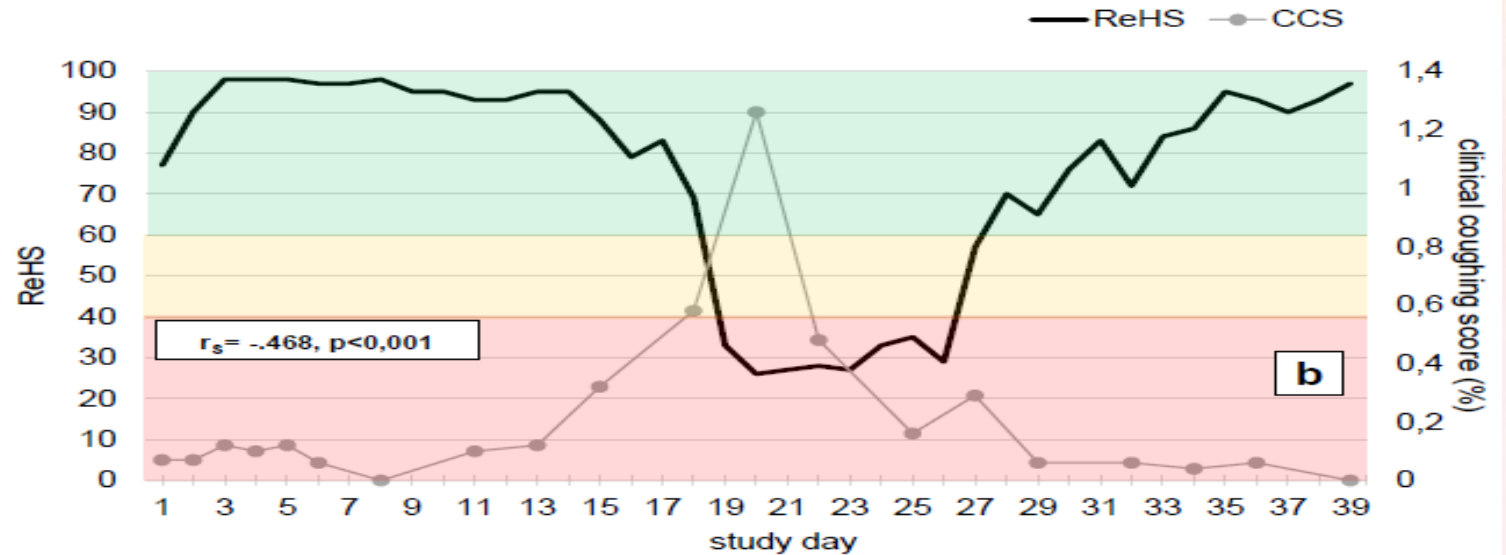
Nursery respiratory disease monitoring – correlation study between an AI sound-based technology, clinical examination and laboratory diagnostics by oral fluid sampling

Feicht F<sup>1</sup>, Beckjunker J.<sup>2</sup>, Brune A<sup>2</sup>, Alonso C<sup>2</sup>, Stadler J<sup>3</sup>, Ritzmann M.<sup>3</sup>, Eddicks M<sup>3</sup>.

<sup>1</sup>Tierärzte Wonsees GmbH, Veterinary Practice, Kulmbacher Str. 17, 96197 Wonsees, Germany, <sup>2</sup>Boehringer Ingelheim Animal Health, Ingelheim, Germany, <sup>3</sup>Clinic for Swine at the Centre of Clinical Veterinary Medicine, LMU Munich, Oberschleissheim, Germany

## DISCUSSION AND CONCLUSION

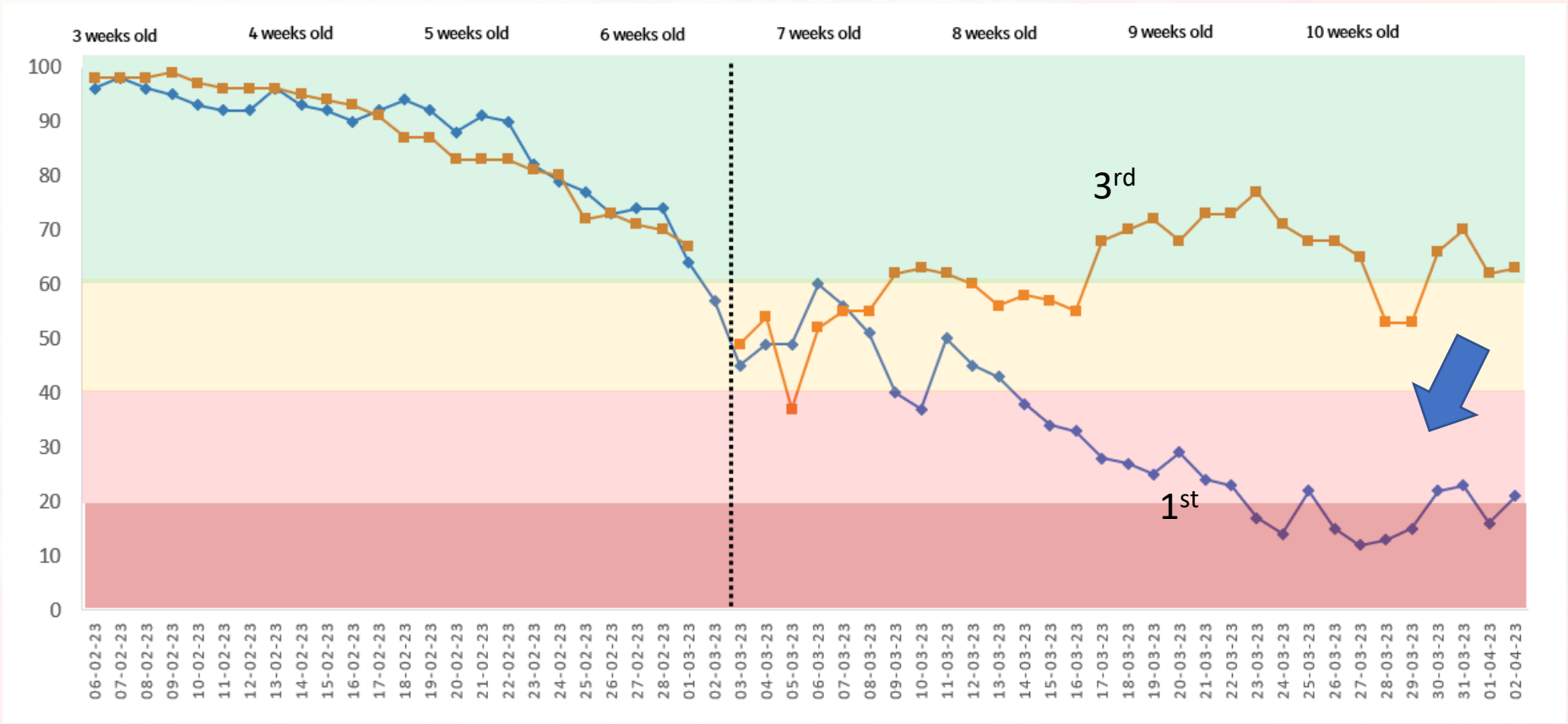
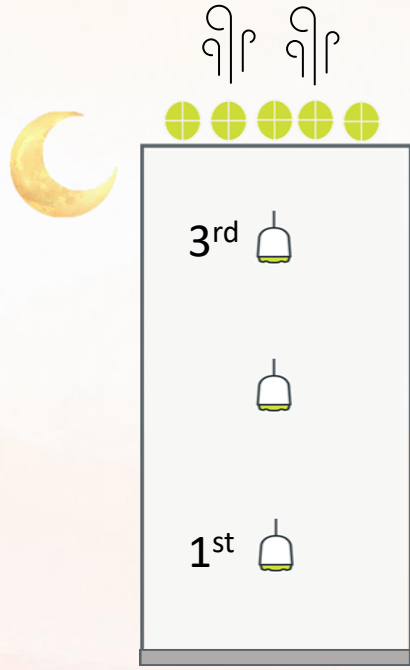
Our examinations revealed a significant correlation between the A.I. sound-based coughing monitoring and the clinical coughing score. The clinical outcomes (ReHS, CCS) were correlated to the IAV-RNA-loads in OFs. The synopsis of our results demonstrated that A.I. monitoring is a reliable technology and IAV as the etiological agent in case of respiratory clinical signs on this farm.







## 2 Address where the problem is located





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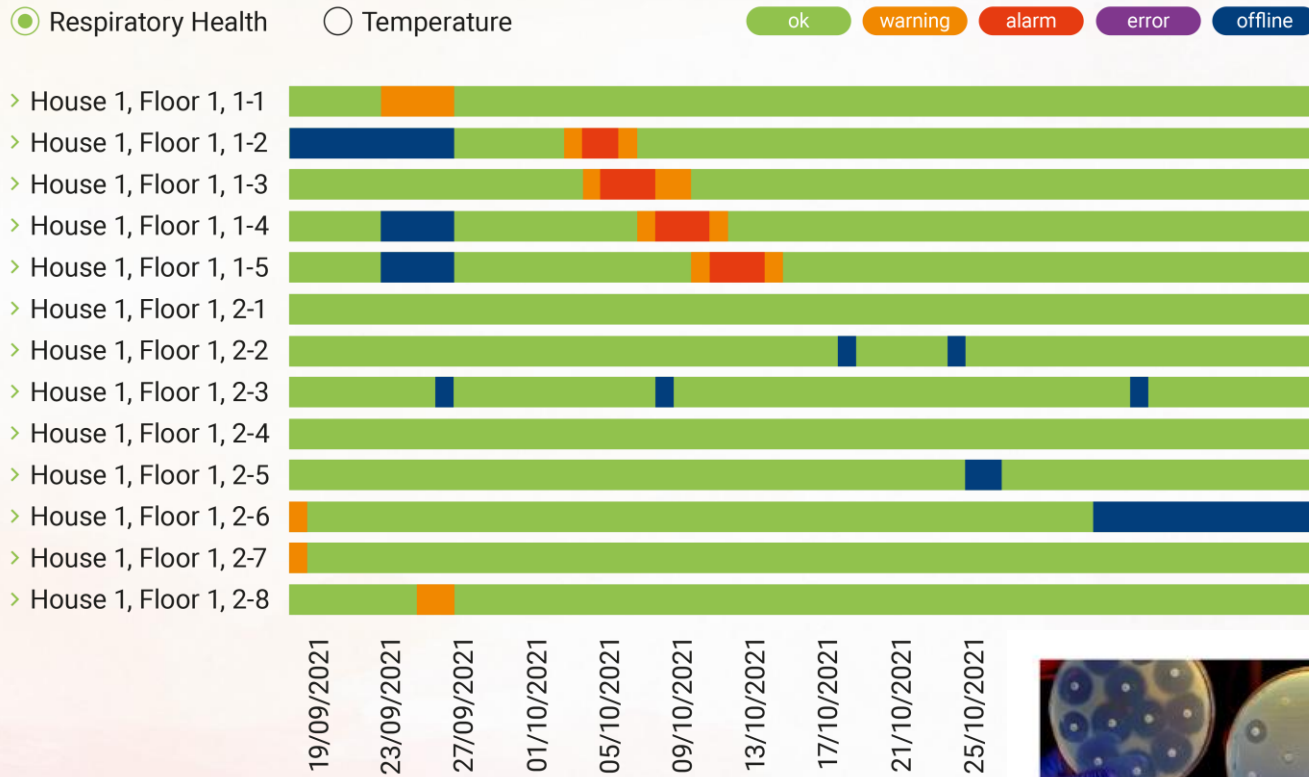
Realtime PCR-Screening "Bakum"

Unter-suchungs-nummer	Identifikation	M. hyopneumoniae	M. hyo ct	Influenza A Virus	IAV ct	PCV2	PCV2 ct	PCV3	PCV3 ct	PRRSV EU	PRRSV EU ct	PRRSV NA	PRRSV NA ct	PRRSV NA-HP	PRRSV NA-HP ct	Kommentar
21/10256-1	1	neg		neg		neg		neg		POS	31	neg		neg		

3 "Identify primary pathogen at the right place and right time"

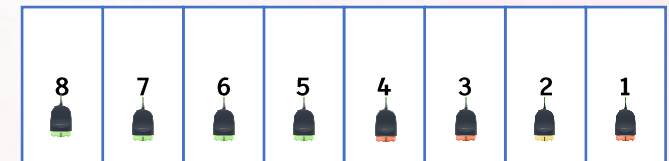


# 4 Saving Medication cost -> 30% reduction of antibiotic



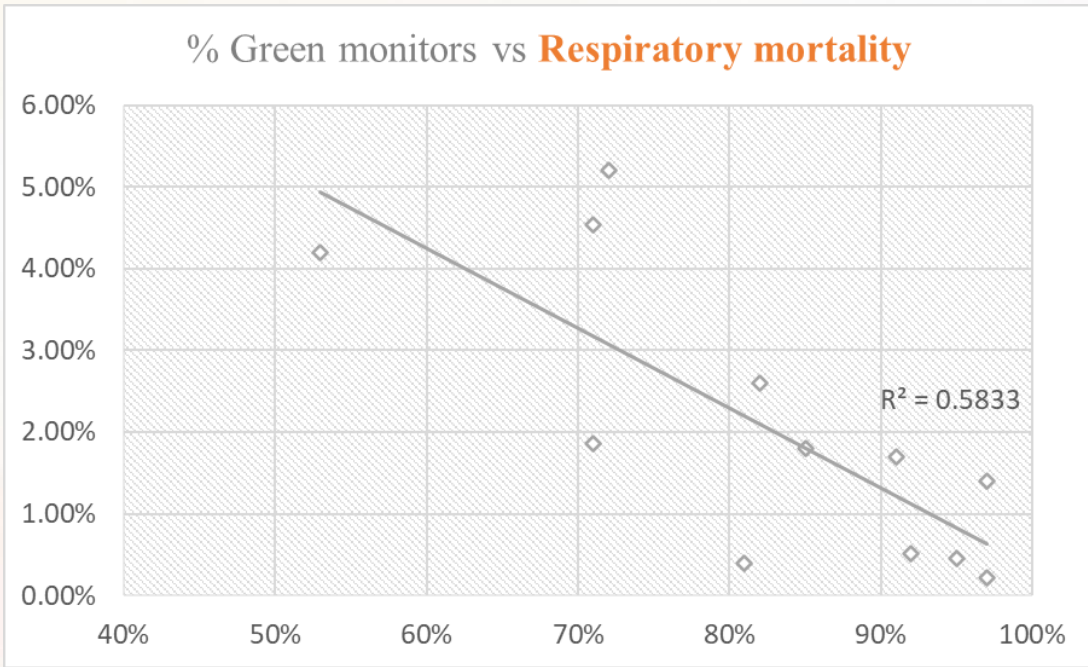
Pigs were treated with antibiotics starting the first day of yellow or red monitor.

“No alarm no treatment”

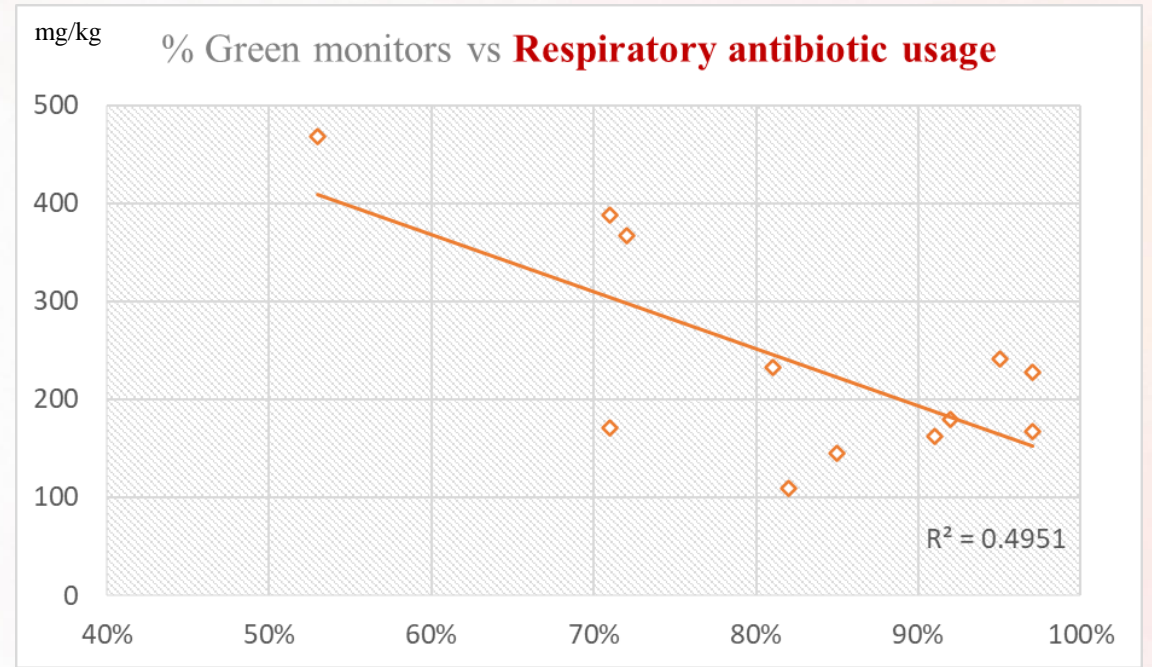




# 5 Sound Technology alarm correlated with Respiratory mortality and Respiratory antibiotic usage



P = 0.010



P = 0.019



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Learning From The Field



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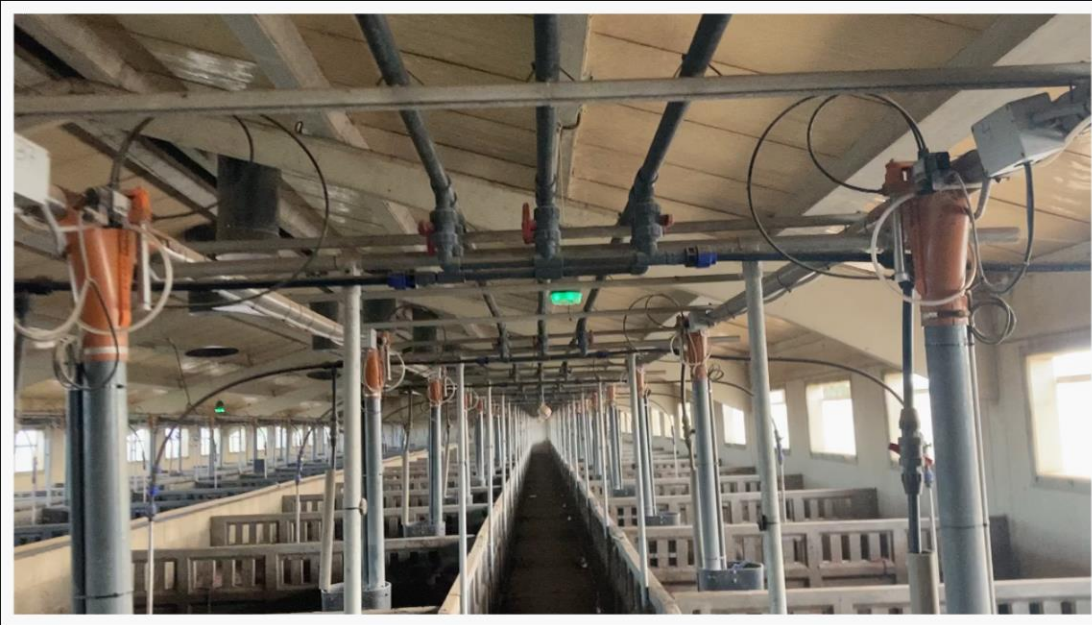


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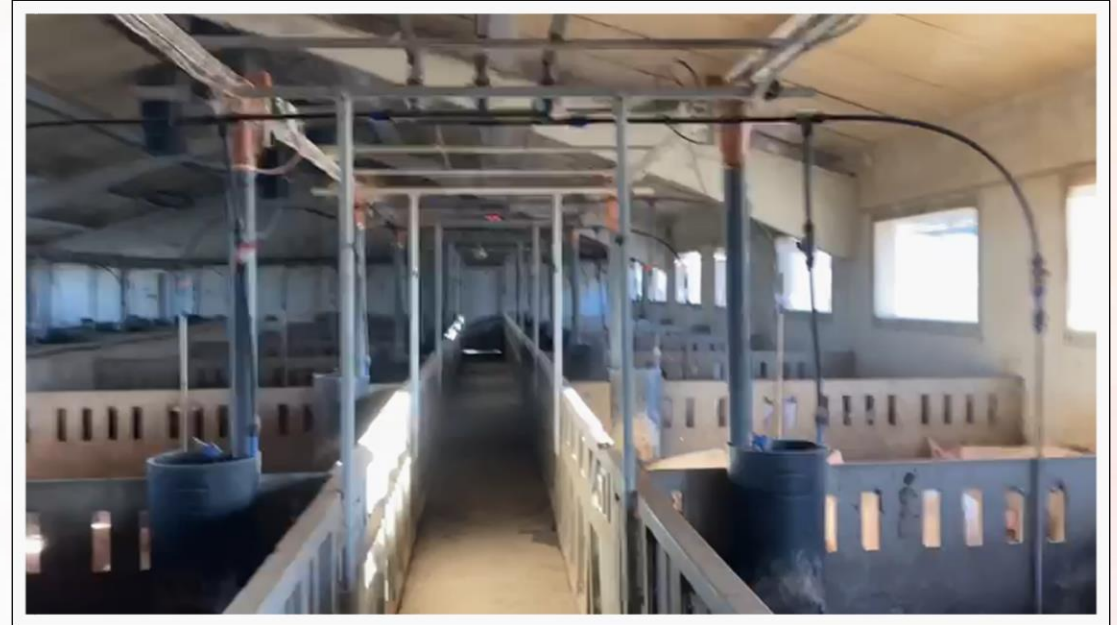
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# How Sound Monitoring Technology works?

GREEN MONITOR - NO CLINICAL SIGNS



RED MONITOR - CLINICAL SIGNS

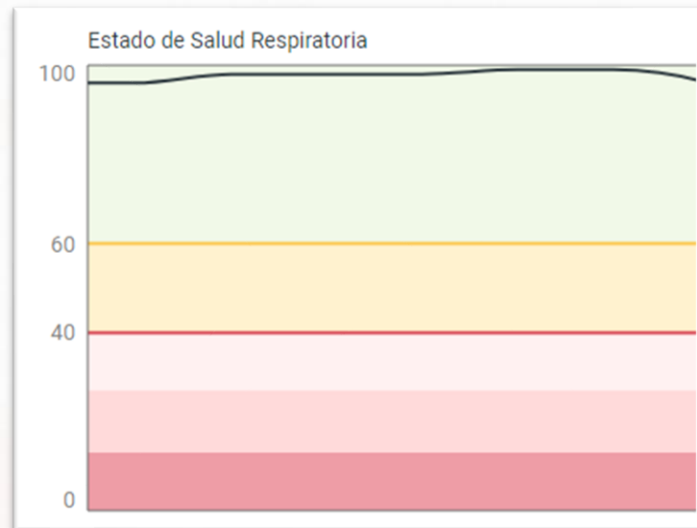




# YELLOW MONITOR



- The main differentiator of the system.
- Key on early detection.
- Biggest difference between the “human evaluation” and “monitor judgement” – monitor telling us something



Index between 40 - 60





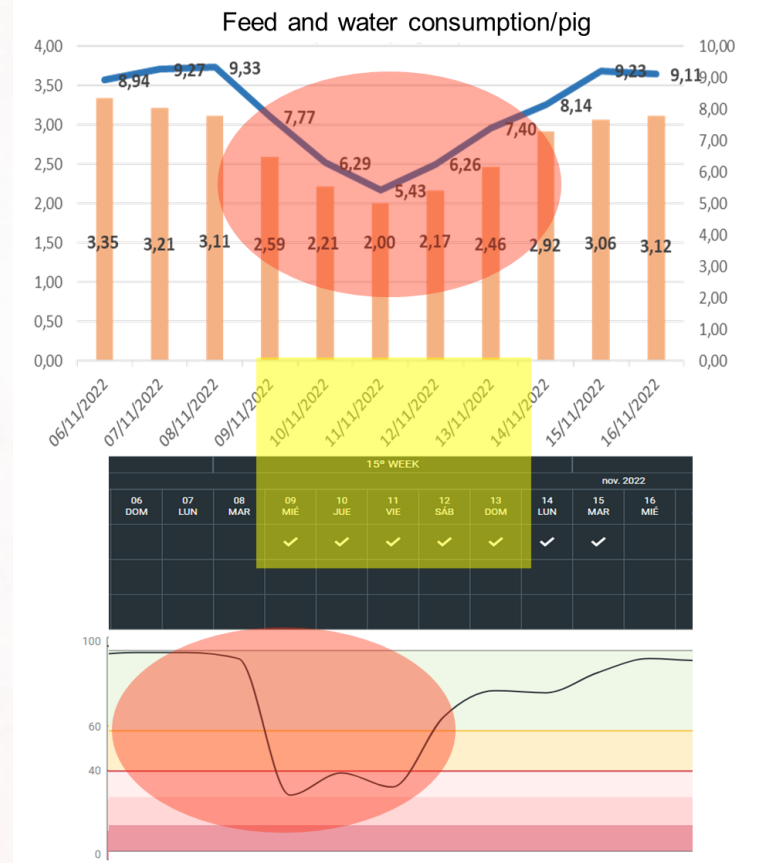
# 5 Sound Technology alarm correlated to water and feed intake



↓ WATER AND FEED INTAKE



↓ RESPIRATORY HEALTH

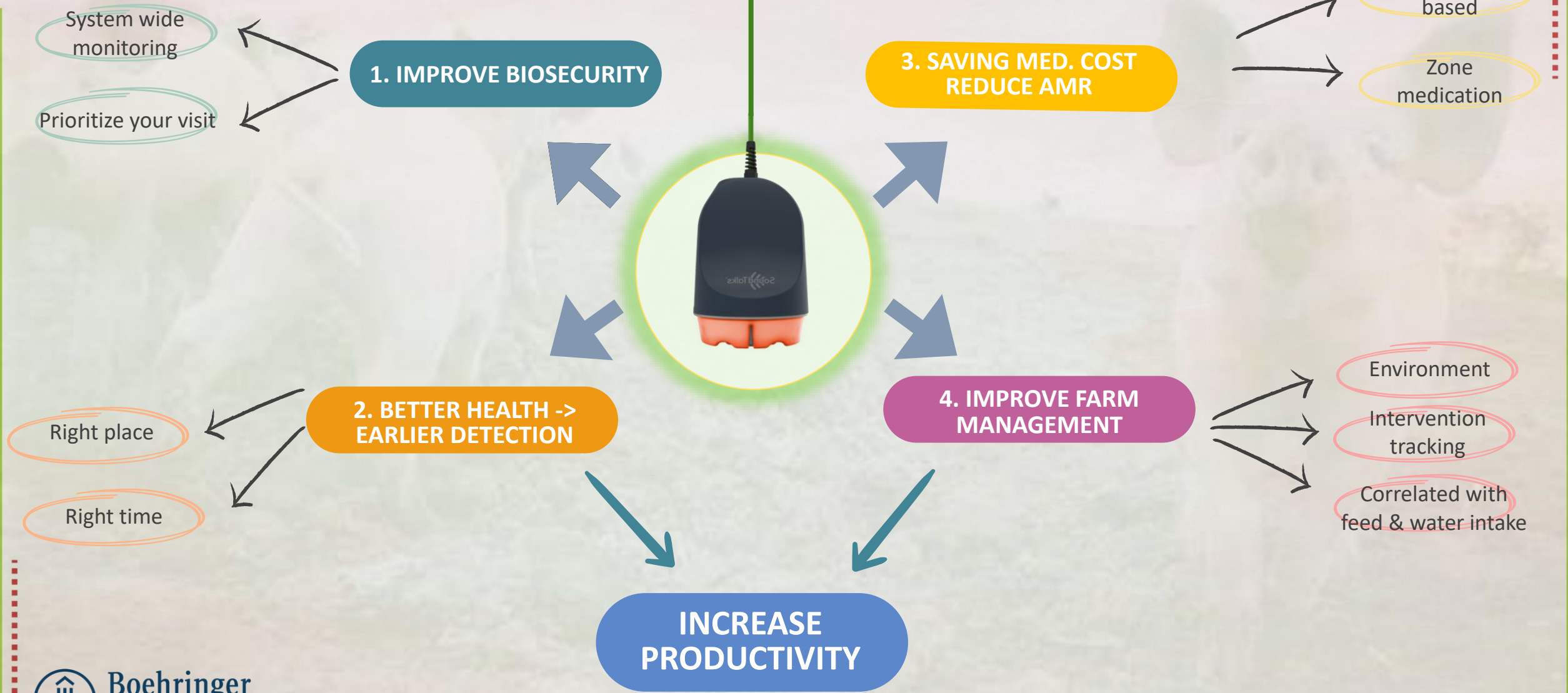






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**Thank you for your attention**



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