Together we can make heat detection more reliable

BOAR BETTER®

MAXIMAL HEAT DETECTION

vetoquinol
ACHIEVE MORE TOGETHER

HEAT DETECTION

Heat (oestrus) detection is one of the most important tasks in any swine breeding system.

Failure to detect heat, or errors in detection can be associated with poor reproductive performance.

The Pig Site reports that accurate heat detection is essential for the correct timing of insemination and a way to reduce non productive days.

The role of the boar in good reproductive performance

Oestrus detection requires the presence of a boar that provides sexual stimuli to the female.

Key success factors:

- Mature boar
- Abundant salivation with high pheromone level
- Appropriate management allowing long nose-to-mouth contact
- Trained and skilled staff for behaviour observation.

The sow's response

The routine procedure for detecting oestrus involves the back-pressure or riding test in the presence of a boar.

Females reacting to pressure on their back by displaying the **'standing' or lordosis response** for at least 10 seconds are generally classified as being sexually receptive.[1]

RISK FACTORS IN HEAT DETECTION

Certain factors can lead to failure to detect oestrus:

- Reduced pheromone levels from the boar through sexual immaturity or individual variations
- Reduced libido levels, tiredness or feed attraction.

Why improving your heat detection performance is a must

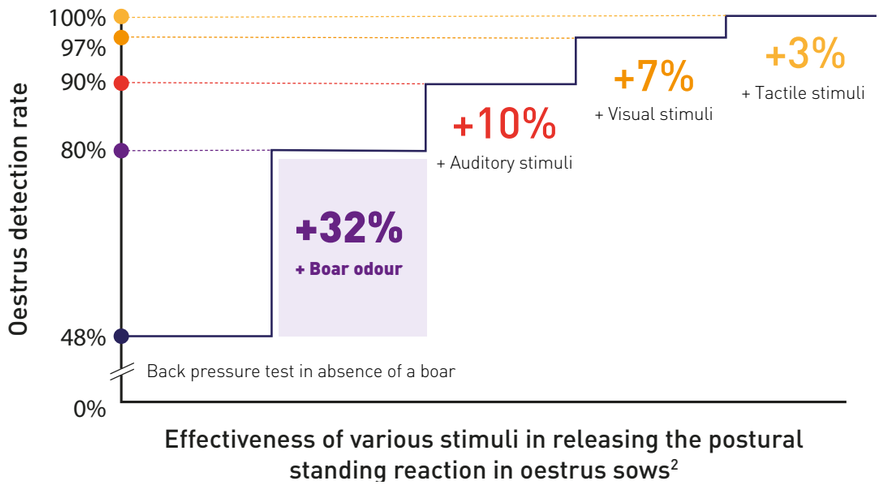
Cost of a non-productive day:	£2.70*
Cost of one regular return to heat:	£56.70

With each empty day costing around £2.70, having 10 extra empty days per litter could cost more than £30,000 for a 500-sow herd.*

*AHDB 2018

NOT ALL STIMULI ARE THE SAME

The boar odour is strong enough to trigger a standing reaction in oestrus sows



Effectiveness of various stimuli in releasing the postural standing reaction in oestrus sows[2]

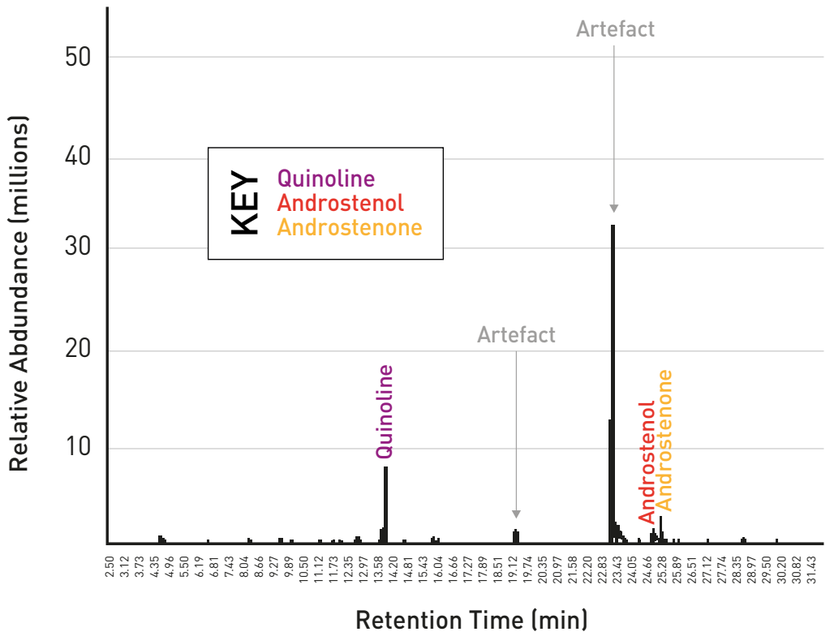
THE IMPORTANCE OF ODOUR

Maintaining maximal stimulation

A live mature boar provides a large array of stimuli, among which the olfactory stimuli plays a major role in oestrus behaviour[2].

In situations where there is a risk of the olfactory stimuli being hindered, a synthetic analogue of **boar saliva pheromones** can help ensure the maximal level of stimulation.

Boar saliva contains three pheromones



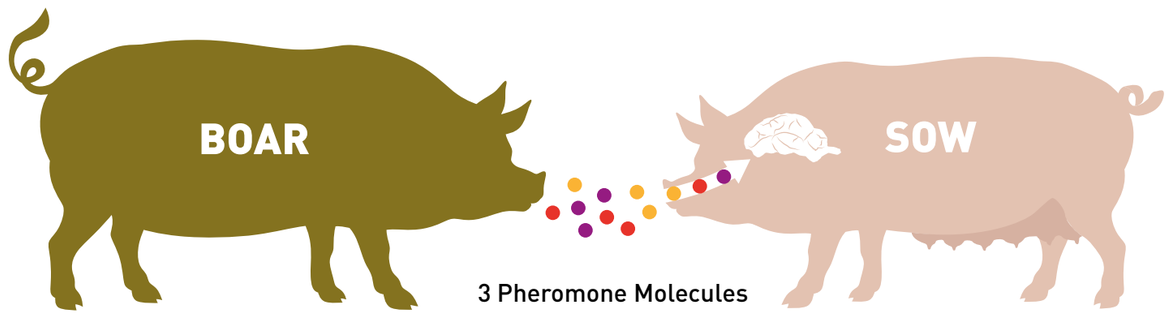
Gas-chromatograph traces of solid-phase microextraction analysis for the immediate air surrounding of boar oral fluid samples.[3]

For many decades, the signal from the boar's olfactory molecules that elicits behavioural signs of oestrus in sows was thought to be only provided by two salivary pheromones: Androstenol and Androstenone.

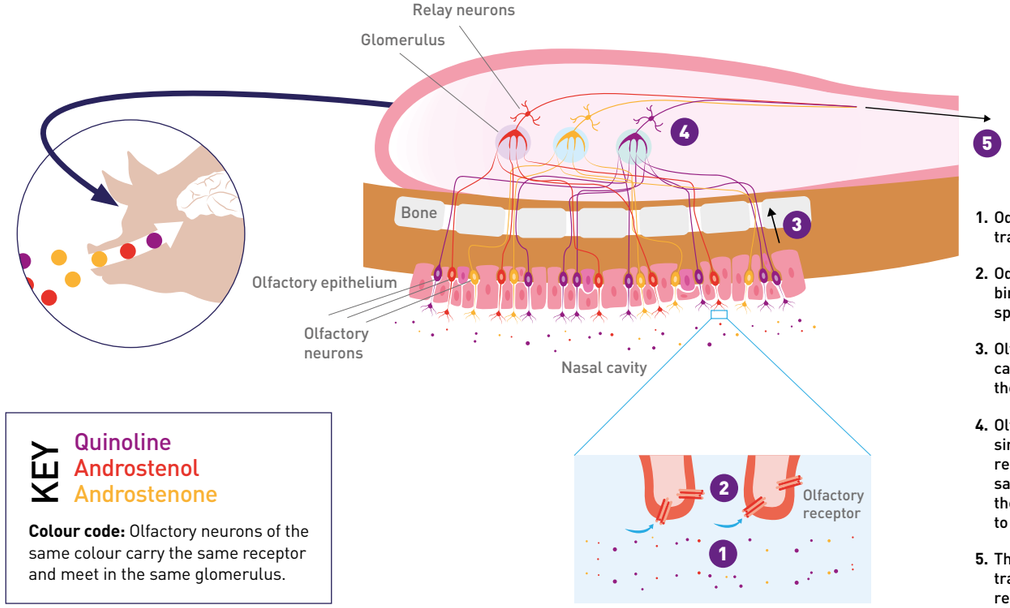
Recent work has shown that a third volatile molecule named Quinoline is also present in boar saliva and shows a pheromonal effect that acts synergistically with Androstenol and Androstenone to achieve the maximal sexual behaviour in oestrus sows.[4]

THE OLFACTORY TRIGGER

The sexually mature boar emits three pheromone molecules in his saliva. These are transferred to the sow through close contact.



The pheromones are transported to the main epithelial organ, a patch of sensory cells within the main nasal chamber, where they are recognized by specific receptors.

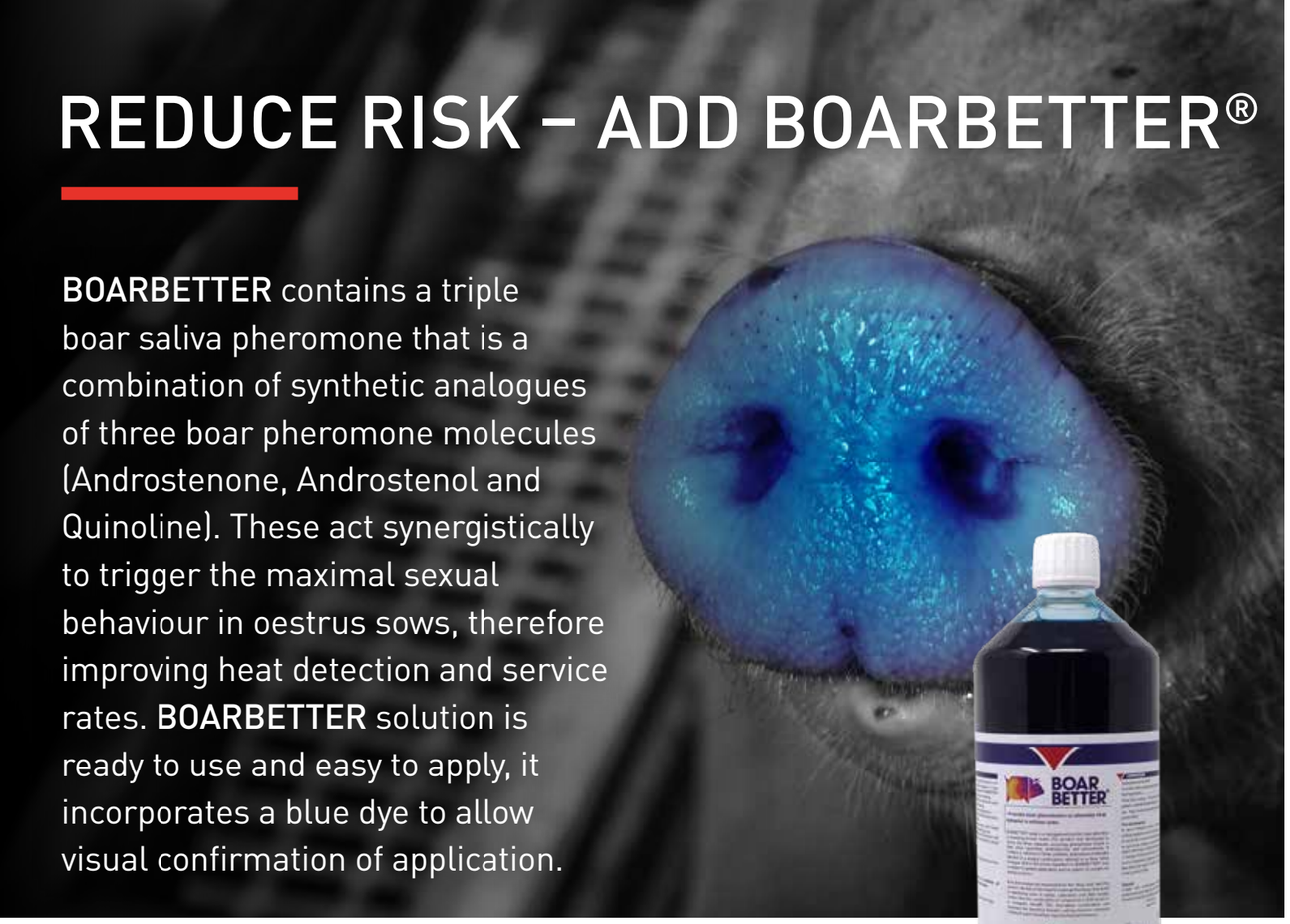


1. Odour molecules are transported through air
2. Odour molecules bind to the olfactory specific neuron receptors
3. Olfactory neurons carry the signal to the olfactory bulb
4. Olfactory neurons with similar olfactory molecule receptors meet in the same glomerulus where the signal is transmitted to relay neurons
5. The signals are transmitted to other regions of the brain

The olfactory sensory neurons transform chemical signals into an electrical signal which is rapidly conveyed to the central nervous system.

One given receptor specifically recognizes one given chemical structure. The maximal sexual message is conveyed to the brain if all three types of receptor is stimulated.

REDUCE RISK – ADD BOARBETTER®



BOARBETTER contains a triple boar saliva pheromone that is a combination of synthetic analogues of three boar pheromone molecules (Androstenone, Androstenol and Quinoline). These act synergistically to trigger the maximal sexual behaviour in oestrus sows, therefore improving heat detection and service rates. **BOARBETTER** solution is ready to use and easy to apply, it incorporates a blue dye to allow visual confirmation of application.

BOARBETTER DRIVES THE MAXIMAL SEXUAL RESPONSE

How BOARBETTER exposure affects sow behaviour[4]

Standing reflex

Motionless, with contracting rigid limbs, during or after BPT was applied.

From 73.3% to 86.4%

Pricked ears

The sow has ears that are erect during or after application of the BPT.

From 36.2% to 52.3%

Vocalisation

The sow vocalises (grunting or squealing) during the BPT.

From 41.4% to 76.1%

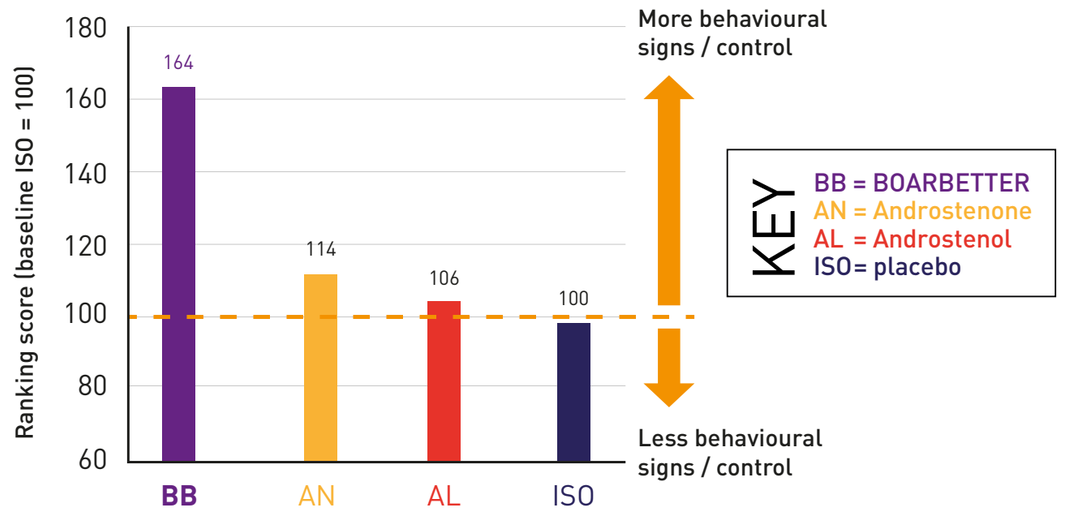
Lordosis

The sow arches her back upwards, tenses her shoulders, puts her legs apart and tenses during or after the BPT.

Other indicators that can demonstrate oestrus: 1. Red, swollen, hot vulva (mostly in gilts – less in sows). 2. Loss of appetite – sows eat less when in heat.
*Increase in sexual behaviour in oestrus sow treated with BOARBETTER as compared to Back Pressure Test (BPT) alone.

BOARBETTER® IS 64% MORE EFFECTIVE

The three pheromone combination of **BOARBETTER** has been shown to trigger the maximal sexual behavioural response in oestrus sows as compared to individual pheromones.

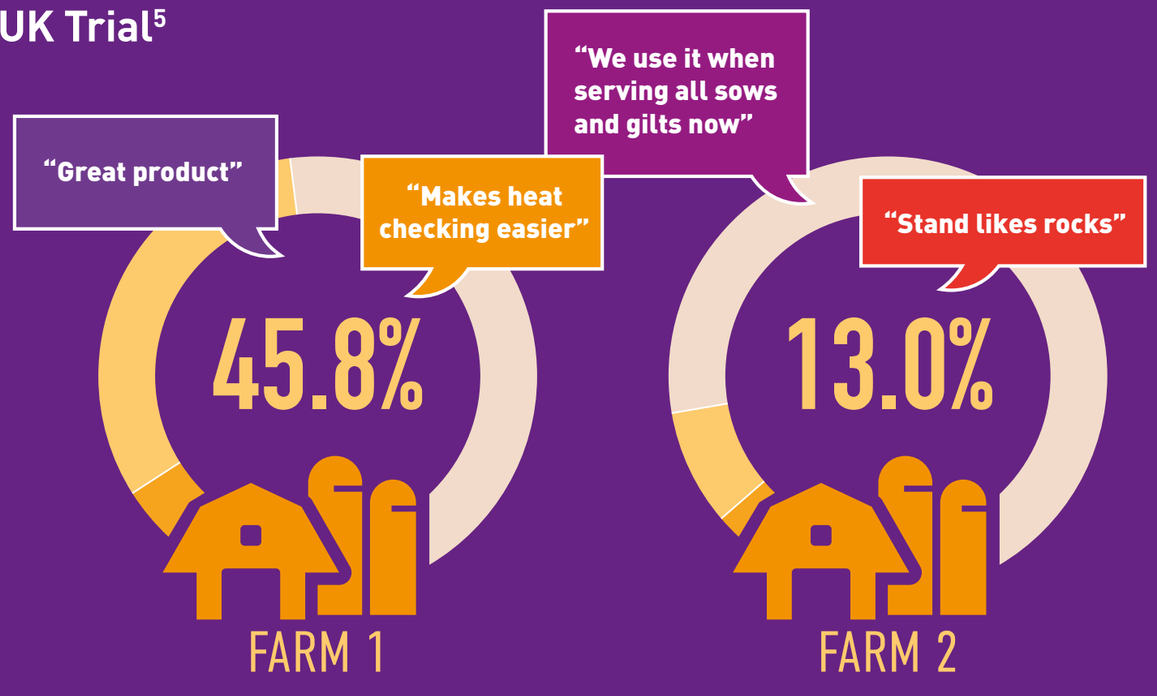


Behavioral response to back pressure test in oestrus sows exposed to different boar sexual pheromones.[4]

Sexual Behaviour Score is calculated based on sows exhibiting pricked ears, standing still and vocalisation behaviours

HOW BOARBETTER® CAN BENEFIT YOUR HERD

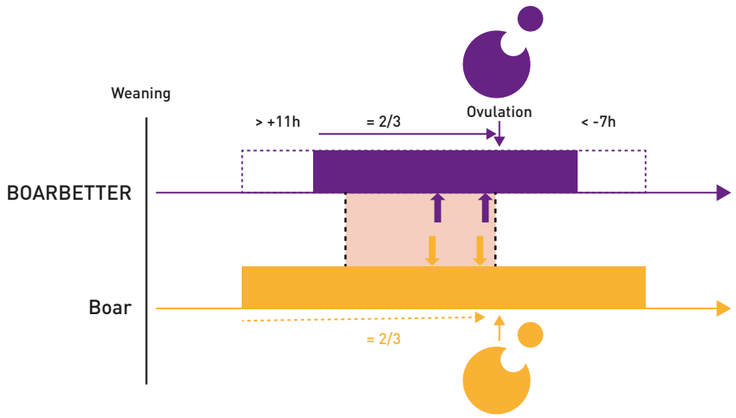
UK Trial[5]



Farm 1: BOARBETTER group demonstrated a 45.8% strong standing reflex vs 13.1% with the controlled group

Farm 2: Overall when BOARBETTER was applied 13% less sows needed direct stimulation from the boar to elicit a sexual behaviour response

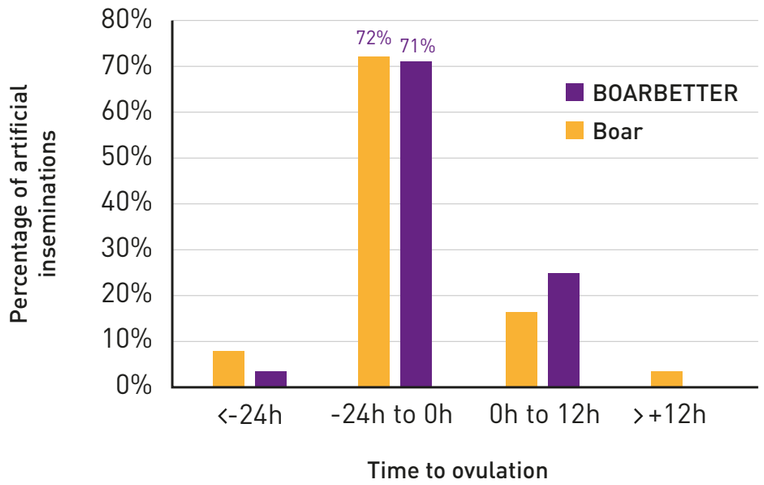
BOARBETTER® IS AN EFFICIENT TOOL FOR HEAT DETECTION



Schematic representation of oestrus and ovulation milestones in sows detected with a live mature boar or BOARBETTER[6]

- **Oestrus is shortened and delayed**
  - Duration: 39 h (BOARBETTER) vs 57 h (Boar)
  - Onset: 108 h (BOARBETTER) vs 97 h (Boar)
- **Ovulation timing is maintained**
  - at the same timing post-wean
  - at 2/3 of oestrus

PHEROMONES CAN HELP SUPPORT AI*



AI distribution relating to ovulation time

BOARBETTER helps target the best fertilization window (> 90% fertilization); i.e. during a 24 hour period before ovulation.[7]

*Artificial insemination

BEST-IN-CLASS STIMULATION TO REDUCE RISK IN HEAT DETECTION

BOARBETTER® can ensure consistent and reliable exposure to sexual pheromones in your heat detection routine.

1 Reduce the risk of low olfactory stimulation – use the boar + BOARBETTER

BOARBETTER can help you reduce the risk and maximise heat detection

- Sexual immaturity and individual variations – can heavily affect the pheromone levels in a boar
- Lack of interest – low libido level, tiredness and/or feed attraction can affect the quantity of the boar's pheromones that stimulate the sow.

2 Help detect oestrus where the boar will not go

BOARBETTER can go everywhere on the farm and work beyond any biosecurity barrier.

PLEASE NOTE: The presence of a boar is recommended wherever possible

Farm design, labour efficiency or biosecurity rules may prevent bringing boars to females – whereas farm productivity would benefit from oestrus check. Examples include:

- Post-breeding heat check
- Oestrus check in quarantine
- A quick heat check where time is short.

Not sure if a sow is in heat?

Spraying BOARBETTER on doubtful sows can help guide you to a better decision for breeding.

HOW TO ADMINISTER BOARBETTER®

4ml of **BOARBETTER** is sprayed directly onto the female's snout. Using a suitable applicator, spray at 20-30 cm from the snout. **BOARBETTER** contains a blue dye for easy application and visual confirmation.

Detecting a sow in heat with BOARBETTER

01 Introduce the boar

Keeping a low number of sows exposed at the same time is recommended. This will limit stimulation to as many sows you can process.

02 Spray BOARBETTER®

Spray onto the snout of the sows. The blue dye allows visual identification of correct application.

03 Apply back pressure test

Mimicking the full boar courtship behaviour is important: before applying back pressure, make sure you have stimulated the flanks, groin, hips and beneath the genital area.

04 Sow behavioural response

• Standing still • Pricked ears • Sexual vocalisations • Lordosis

Picture: Eric Senmartin

BOAR BETTER®

MAXIMAL HEAT DETECTION

References: 1. Hemsworth *et al.* 1988. Habituation to boar stimuli: possible mechanism responsible for the reduced detection rate of estrus gilts housed adjacent to boars. Appl. Anim. Beha. Sci. 19:255-64. **2.** Signoret & du Mesnil du Buisson. 1961. Etude du comportement de la truie en oestrus. IVth Congr. int. Reprod. Anim., La Haye, 171-5. **3.** May Matthieu. 2016. Use of solid-phase microecratcion to tedtect semiochemicals in synthetic and biological systems. Master dissertation, Texas Tech University, 78p. **4.** McGlone *et al.* 2019. A novel boar pheromone mixture induces sow estrus behaviors and reproductive success. Appl. Anim. Behav. Sci.;219:104832. **5.** Vetoquinol Internal Study. September - November 2020. Evaluation of Boarbetter as a tool to aid oestrus detection in sow and gilts, using 217 gilts (Farm 1) and 105 sows (Farm 2) performed across 4 consecutive weeks on farm 1 and 8 consecutive weeks on Farm 2. **6.** Vela Bello *et al.* submitted. **7.** Soede *et al.* 1995. Effects of time of insemination relative to ovulation, as determined by ultrasonography, on fertilization rate and accessory sperm count in sows. J. Reprod. Fertil. 104:99–106. Use medicines responsibly – see www.noah.co.uk for further details.

Boarbetter contains a triple boar saliva pheromone that is a combination of synthetic analogues of three boar pheromone molecules (Androstenone, Androstenol and Quinolone). Further information is available on request from:

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