

SMAXTEC APPLICATION EXAMPLE MASTITIS

HOW SMAXTEC DETECTS MASTITIS

Mastitis results in **considerable financial losses**, caused by **daily milk loss** in the **current and following lactation**. Depending on the time of disease occurrence, a milk loss of **2.5 kg per day** or **550 kg per lactation** can arise. **The earlier mastitis is detected, the smaller the damage.**

With smaXtec, you detect mastitis early: The **increase of body temperature** is, as for most **inflammatory diseases**, the **first indicator of a beginning disease**. According to scientific studies, body temperature increases **up to 4 days before clinical symptoms** become visible. Since the disease is detected this early, you can **act early** in

order to considerably **reduce** the number of **moderate to severe mastitis cases on your farm.**

Find below two mastitis examples: one E.coli mastitis proving how early smaXtec notifies you, and a mastitis that occurred shortly after calving which was detected early, but unfortunately didn't lead to a timely reaction.

EXAMPLE 1: E.COLI MASTITIS

Mastitis caused by E.Coli bacteria **frequently** have a **severe, highly acute disease progression.** E.Coli mastitis often leads to the **loss of the affected udder quarter or to the animal's death.** This is why it is **particularly important to detect E.Coli mastitis as early as possible** so you can **react as quickly** as possible and increase animal welfare.

Inner **body temperature** changes **earlier** than **other parameters used for mastitis detection.** This is the reason smaXtec is able to provide mastitis information **earlier than milking systems.** See for yourself in the following example: This cow had a case of E.Coli mastitis on the **12th August.** **smaXtec notified** the farmer at **9 pm.** He immediately **examined** the cow and **took action.** The **milking system** notified the farmer on the **13th August** based on the **changed conductivity** of milk – **more than 6 hours later!**

The **severity** of disease progression in case of E.Coli mastitis leads to **considerable differences between two milkings.** In this case, there were **no signs of mastitis during the last milking** – they **only occurred afterwards.** Signs of mastitis were thus only detected during the next milking. This **delay can be fatal,** particularly when it comes to E.Coli mastitis that **requires rapid action to save the cow.** Once again, it shows the **high value of continuous measurement of inner body temperature.**



In this case, the farmer reacted **as quickly as possible** thanks to smaXtec, and was thus able to **avoid lasting damages**. The cow **recovered quickly**: Looking at the drinking cycles you can see that the cow drank considerably more water **on the 15th August**. Today, the cow is still **in the best of health** and **milk yield was only slightly affected** thanks to the early reaction.

But what happens if farmers do not react immediately? The following example shows how early smaXtec gives the opportunity for treatment.

EXAMPLE 2: MASTITIS AFTER CALVING

In the following example you see the **changes of the cow's body temperature** caused by a **mastitis shortly after calving**. In this case, **multiple alerts** were sent **before measures were taken**.



Here, the system sent **3 increased temperature alerts**. **Clinical signs** with flakes in the milk were only visible in the **evening of the third alert**, and this is when the **treatment** was **started**. If the cow is **carefully examined after the first notifications** by using a **California Mastitis Test**, the test already shows **slight streaks**. This leads to **earlier diagnosis** and **treatment**. In this case, the **progression** of the disease was **severe**; the **economic loss** throughout the current as well as the following lactation is **enormous**. The usage of **antibiotics** could have probably also been **avoided** if a reaction based on the smaXtec alert had taken place. Additionally, the **cow's pain** can be **relieved** earlier and thus additionally **animal welfare** is being improved.