

Robotic Milking System (RMS)

Dr. Sc. M. Samer

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How the RMS works?

When the milk pressure reaches 40 mm Hg in the udder, the cow moves to the RMS where the cow will be identified so the system knows who she is and when she was last milked.

RMS knows, she is ready to be milked and leads her to the milking station where she is given some concentrates. Once inside, the station adjusts to her size placing a splash guard behind her to keep the area clean.

The RMS multi-purpose robotic arm goes to work, using the system photo sensors' laser it will find the teat and attach the teat cleaning cup.

Water stimulation and pre-milking regimes with gentle pulsations and small injects of warm water form the most important phase, next the teat is dried. This thoracic stimulation is healthy for the cow, and also shortens the milking time. Now, the teats are ready for milking.

It can be noticed how the RMS multi-purpose robotic arm is quickly finding the teat and attaching the cup. Every effort is made to make the cow comfortable and relax during milking, RMS adapts to the cow and not the other way round. In principle, there is no bulky machine beneath the cow. Even the floor is designed for comfort and hygiene. In fact, RMS is flexible enough to adapt to host any cow. Even 45-degree-teat can be milked by RMS.

During milking, the system monitors each quarter independently. With quarter monitoring, the milk quality, flow, quantity, and milking time for each quarter are monitored and reported independently. Readings are compared

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to the normal values for each quarter; the regression could be an earlier indication of illness or injury, so they are reported by the system.

For the flow, all RMS installations need an intake of air; with RMS fresh air is fed to the system so the air that mixes with the milk is always pure. This way only clean air is mixed with the milk for superior quality.

As soon as each quarter is finished, the teat-cups are retracted. Finally the teats are sprayed. Then the gate is opened and the cow exit. The cow is then released to the feeding area.

Between cows, the milking station undergoes a regular cleaning program. The floor is cleaned insusceptible. Before the next cow could enter, the teat-cups are thoroughly cleaned. The barn must provide a smooth flow of cow traffic in order to reach the RMS easily.