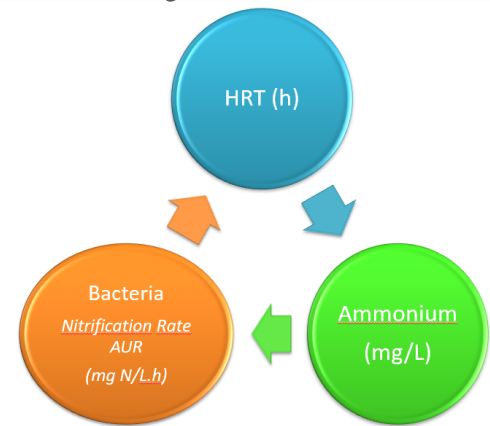


# SICAIR

## *Intelligent Aeration Control System*

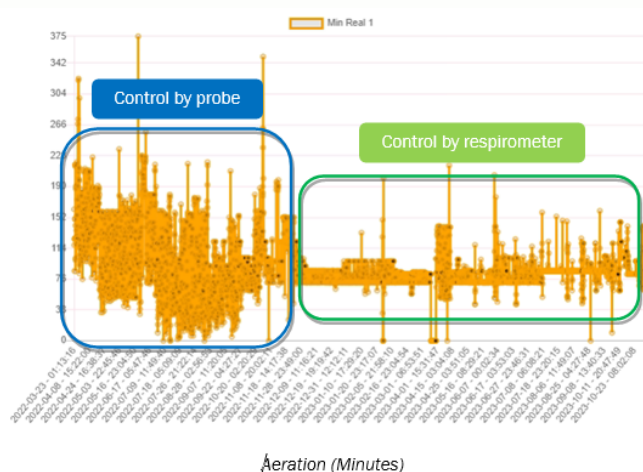
SENSARA's SICAIR algorithm performs aeration control based on 3 variables:

- hydraulic retention time (HRT),
- ammonium concentration, and
- **NITRIFICATION RATE.**



The main difference of this system with respect to traditional aeration control systems is that SICAIR takes into account, directly, a fundamental variable such as **the kinetics of respiration of autotrophic bacteria** at each moment (Rn/AUR).

With these variables, the SICAIR algorithm calculates the volume of oxygen that the bacteria need at each moment and, taking into account the technical data of the blowers, calculates the minutes of operation.



*With the SICAIR system,  
a more balanced  
aeration is achieved,  
without peaks and  
valleys, obtaining an  
effective stabilization of  
the biomass.*

**Energy  
Savings**

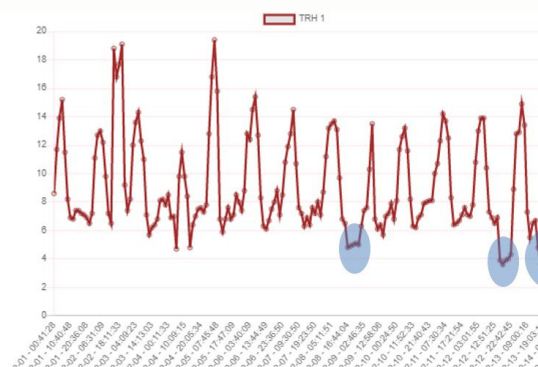


# SICAIR

## *Intelligent Aeration Control System*

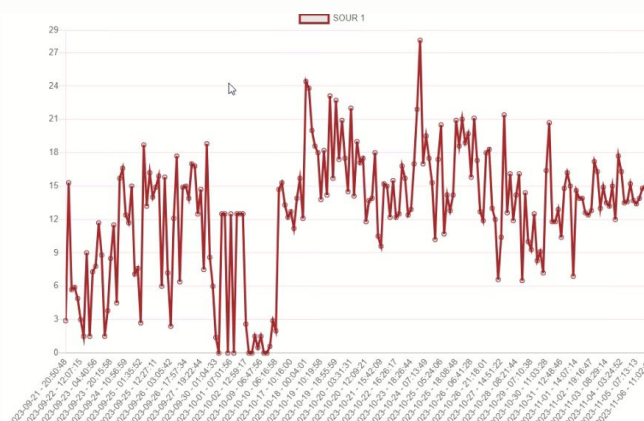
### Rain episodes

For these cases, in which dilution processes occur, the system detects them by means of the global respirometry test and the HRT data, applying a correction factor to the aeration calculation.



### Overload episodes

In the same way, when the system detects overload episodes, by means of the global respirometry test and the plant probes (optional), a correction factor is applied to the aeration calculation.



### Communication

The respirometric system (SN8-SICAIR binomial) communicates with the plant SCADA in a bidirectional way. The respirometric system sends via MODBUS all the signals and in turn the SCADA shares signals with the respirometric system.

