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PASTEURIZERS AND SPRINKLER EVAPORATOR TOWERS

NEW ara®™
super magnetic
water treatment systems

NEW FUNCTIONALITY WITH THE APPPLICATION OF NEW ARA ACCELERATOR

It is known that in pasteurizers and in sprinkler evaporator towers, three types of problems may have to be addressed:

- growth of algae
- formations of calcareous deposits
- corrosions of metallic surfaces

Now we will see how these problems can be tackled using the methods most suitable to the system that we operate.

Algae - calcareous deposits - corrosions of metallic surfaces

Reutilization of water causes the deterioration of its biological qualities: in fact as the water is continually recycled it absorbs from the outside environment organic and inorganic substances which promote the development of various types of living organisms that form regular sludge or slime which can cause considerable damage to the circuit.

As unpleasant odours begin to develop due to the metabolism of these living forms, the slime can also give rise to a number of other disadvantages such as:

- a decrease in efficiency of thermal exchange due to the formation of an insulating layer;
- clogging of the water sprinkling nozzles;
- poor water circulation because of the rapid obstruction of the filters attached to the pump suckers;
- the possibility of biological corrosion on ferrous surfaces due to the formation of hydrogen sulphide produced by sulphate-reductors micro-organisms.

In short, all this leads to an overload of maintenance, deficiencies in the pasteurising cycle and a deterioration of the general conditions of hygiene.

Considering that:

- **ALGAE** - grow best at temperature of between 20 and 45°C with a pH of between 5,5 and 9,0. They need sunlight and air to grow and are rarely found in completely closed circuits.
- **BACTERIA** - grow best of around 30°C but some forms exit that can develop up to 50°C and above. The optimal pH between 7,0 and 9,0 but again there are some forms that are able to grow in extreme conditions.
- **EUMYCETES** - they can grow at very wide rangers of temperature (10-40°C) and of pH (2,0-8,0).

The above account explains why the problem of slime occurs more in the zones of pre-heating and cooling than in the pasteurisation zones of tunnel pasteurises and the zones of corresponding temperature in similar systems (coolers).

Even in the hottest zones, however, it is still possible for biomasses to develop when temperature falls, for example after pauses between one processing and the next.

ADVANTAGES

By installing a NEW ARA ionic accelerator on the recycling plant, thanks to his regenerative qualities and not deterioration of the biological qualities of the water, the following important advantages may be obtained:

- ❖ possibility of using the same water for a longer time;
- ❖ economies on labour in the cooling maintenance (f.e. filter cleaning) and as a consequence of the previous point;
- ❖ water and power saving;
- ❖ elimination of unpleasant odours;
- ❖ elimination of clogging up of water sprinkling nozzles and pump filters;
- ❖ total elimination of calcareous deposits;
- ❖ elimination of the corrosion on metal surfaces since water treated in this way does not suffer alterations in chemical equilibrium;
- ❖ higher quality of water used.