

NEWS FLASH 18- APRIL 2002

SECTION: OLIVE PRESSING

PREVENTION AND REMOVAL OF CALCIUM DEPOSITS AT OLIVE PRESSING PLANTS WITH THE “**SCALE WATCHER**™” PROVES A VERY SUCCESSFUL EXPERIMENT

Thousands of olive pressing plants can gain costly production time as a result of less maintenance work

Scalewatcher™ eliminates problems with heated well water

Countries around the Mediterranean Sea have a thriving olive industry. More than 100,000 orchards ranging from small to large grow olives, most of which are pressed into olive oil. This pure vegetable oil is produced at about 10,000 olive pressing facilities. The method used by these pressing operations is essentially the same, and practically all of them run into problems with calcium deposits that often bring production to a standstill. These maintenance interruptions, however, can be prevented by installing the *Scalewatcher*™.

Because the season when the olive presses are operating usually lasts only three months, the machines almost have to be running 24 hours a day. Halts in production are often disastrous and can sometimes have major financial consequences. But until now, it has been impossible to keep the presses running for three months in a row without having to stop for maintenance activities. At least twice during this period, all the machines have to be shut down for a while to rid the pipes, machines, boilers and sieves of their accumulated calcium deposits. These deposits come from the heated well water used in almost every olive press. In most cases, the olive presses are equipped with their own well that produces water registering an average hardness of over 40 dH (i.e. more than 700 ppm).

Production process

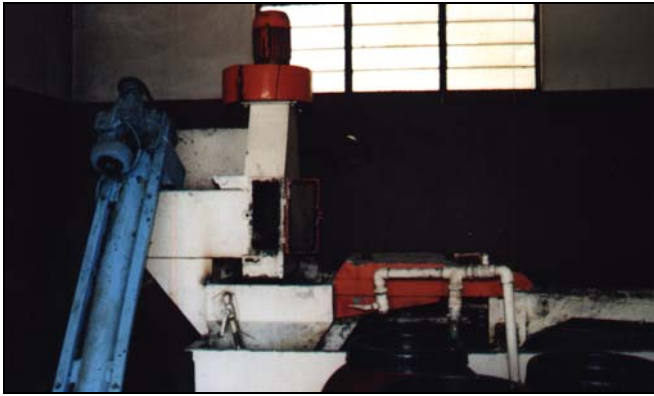
The production process consists of various steps. In the first machine (photo 1) the olives are washed and the fruits are separated from branches and leaves. From there, the olives go to the crusher (photos 2 and 3) where hot water combined with churning softens their flesh. In the next machine (photo 3), all the olives are completely covered in hot water and their flesh becomes even softer. After a while, the olives are so soft that they can be transferred to the first centrifugal press (photo 4). Centrifugal force removes the pits and does the first pressing. In the next two presses (photo 5), high speed is used to press the pits out completely. The oil is then tapped from this press into bottles or vats.

Source of the problem

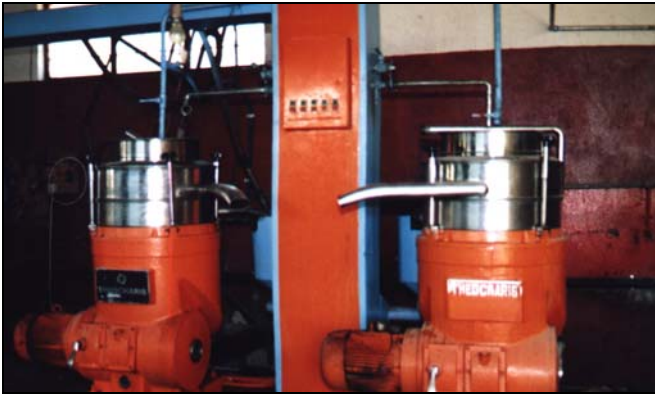
To produce 300 to 320 litres of olive oil, a pressing plant has to press about 3.5 tons of olives. The calcium deposit problem develops mainly due to the fact that this production process requires the heating of water in boilers (photo 6). Hot water is essential for the pressing. The result is that this well water, which is often very high in calcium carbonate, leaves calcium deposits behind in all the parts of the production equipment: from heating pipes to boiler and from presses to sieves. After about a month, the accumulation is so thick that the process has to be stopped to remove the calcium deposits that are often very hard to get off.

A simple solution

The solution for this major problem was the installation of a *Scalewatcher*™. When it was first used at olive pressing facilities during the 1996 season, the operation of this device proved highly effective. At the start of the pressing season, the *Scalewatcher*™ had been installed on the main water supply pipe (2-inch diameter). Throughout the entire season, there was no reason to shut down the production process due to the accumulation of calcium deposits. Not until the pressing season had ended were all the machines cleaned. At that time, only a powdery calcium sludge was found in the presses and boilers. Using just a hose, it was a fairly easy job to flush out this substance from the boiler and other machine parts.



NR.1



NR 5



NR. 2



NR.3



NR. 4



NR. 6