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## Quality control of extra virgin olive oil by processing the images of olives

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Quality control in most producing industries is one of the most crucial points in world trade. This protection is even more important in the food sector, where not only the food quality must be controlled, but also the health of their consumers and prevention of any type of adulteration must be ensured. This is why legal regulations are commonly published around the world. This situation is even more important when the goods are characteristic of a country's idiosyncrasy, like the extra virgin olive oil (EVOO) from Mediterranean countries. Regarding the field of EVOO, a vital component of the Mediterranean diet, many research groups around the world are working on the development of methods to monitor its quality and prevent its loss. These groups are working on developing new equipment, applications, and/or powerful chemometric tools to detect any condition that causes a decrease of EVOO quality. Most of them are working with the oil itself, but here a new way based on the analysis of the olive images by supervised artificial neural network is proposed. The independent variables of the model have been taken from olive photographs to design a fast way to classify olives according to their quality. The percentage of misclassification of this tool is lower than 5%. These results offer a good tool to protect EVOO quality, as success in this regard would be compelling for the EVOO producers, as better olives are directly related to the production of higher-quality extra virgin olive oils.

## Biography

Jose S Torrecilla is a Professor of the Chemical Engineering Department of the Complutense University of Madrid (UCM). He received his PhD in Chemical Engineering from UCM in 2000. From all of his main lines of research, it is worth highlighting the modeling of complex systems and the design of chemometric tools used in many fields such as health, chemistry, engineering, and food technology. He has collaborated with numerous universities as well as national and international research facilities. The impact of his research can be measured with the great number of published articles in various prestigious international journals, some books related with his research lines, and a few national and European patents. His importance can also be evaluated through the participation and coordination of a great number of competitive projects inside the American, European, and national frameworks. During the last few years, he has given lectures and seminars at distinguished international research centers, being the main coordinator of some of them.

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