

## THE CONDENSE' S FERTILIZER AGRONOMIC EVALUATION

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### EXECUTIVE SUMMARY

The CONDENSE process leads to a product with high concentrations of nutrients and low concentrations of phenols, even though, the original materials used include olive oil mills wastewaters (OMW), that contains both nutrients and phenols in excessive concentrations.

The agricultural trials that were conducted during the project were extensive both regarding plants used to test the product, as well as, growing techniques. The following cultivations were used only regarding trials in Greece: peppers (in pots), tomatoes (in pots and in the field), cucumbers (in pots), strawberries (in pots), potatoes (in the field), lettuces (hydroponic), pepper (hydroponic) vinegar and olive trees. The cultivation techniques used were: controlled open field experiments, uncontrolled (commercial cultivations) open field trials, greenhouse trials and hydroponic trials. In some cases the end product was used as a nitrogen source (all correlations with chemical fertilisation were based in the nitrogen amounts provided by each product), and in some cases as potassium source.

Also a large variety of products were used, all utilizing the two treating technologies (solar drying and composting), put not always with the same succession. In some cases composting was preceding solar drying and in some cases, solar drying was presenting the composting process. The difference between these two combinations was significant, regarding mostly the presence of phenols and the respective phytotoxic effect.

Worse and optimum results will be presented here that allows demonstrating both the optimum production process as well as the optimum utilization methodology. As an example, for the first group, results from hydroponic lettuce cultivations are presented, where the end product was used in various concentrations aiming to identify the optimum rate. Phytotoxicity due to phenols and increased electrical conductivity reduced productivity to less than 50%, in comparison with the inorganic fertilisation. As an example of the second group of trials we present a pepper experiment, where the end product was mainly used as a K source, achieving, when N and P were added to balance the chemical fertilizer concentrations, exactly the same results with the chemical fertilizer.

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