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## The use of hydromulches in organic farming: Effect on different soil parameters in Central Spain

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In recent years, the problem arising from the weed control in perennial crops is increasing, both in young woody crops during the first years of cultivation and in established plantations. The control of weeds through herbicides, the most widespread practice, presents many inconveniences, among which we can mention the appearance of weeds resistant or tolerant to them, crop phytotoxicities, especially in young plantations, or the significant reduction in the active materials allowed. Another aspect to take into account is the search for techniques that allow saving crop water consumption by reducing soil evaporation

Therefore, in this work we evaluate the effect of three mixtures based on by-products derived from the agricultural sector, mixed with a binder and recycled paper paste and applied in liquid form on the ground with subsequent solidification (hydromulch), on different soil parameters (soil water content, temperatura and flow of CO<sub>2</sub>) in a young olive plantation in containers of 700 liters capacity. Additionally, two control treatments were included (manual weeding and a no-weeding treatments).

In summary, and as preliminary results, hydromulches increased the soil water content, reduced slightly the soil temperature in the summer season and increased the flow of CO<sub>2</sub>, indicative of a higher soil microbial activity, closely related with the air temperature and the soil moisture. These preliminary results position hydromulches as an interesting alternative to herbicides and the conventional plastic mulches.

**Keywords:** hydromulches, soil CO<sub>2</sub> flow, soil temperatura, soil water content.

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