# **Straw Management Effects on Yield of California Rice.** (S04-wayland225847-Oral)

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## Abstract:

Rice growers have faced a decade of reinventing some of the aspects of growing rice and managing rice residue. Passage of the California Rice Straw Burning Reduction Act in 1991 forced growers to contend with a tremendous amount of rice residue that was formerly burned. The results of a long-term (>9 years) rice straw management study showed that winter flooding increases available soil nitrogen and leads to a significant yield gain over non-winter flooded fields. In addition, an additional yield gain is seen in straw incorporated fields compared to straw burning or baling under strict weed control. We also noted that increasing the rate of fertilizer N additions when straw is incorporated reaches a maximum yield potential at 100 lbs. N/A, while when straw is burned it continues to increase linearly with increasing fertilizer N addition. These results suggest that straw incorporation is yield-limited, possibly from N-limiting factors such as weed or pathogen pressure. These observations suggest a prudent and continued evaluation of rice residue management practices and their impact on the long-term sustainability of rice.

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