

Title Effect of production systems on phenolic composition and oxygen radical absorbance capacity of 'Orléans' strawberry

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Abstract

The effect of two production systems, plastic mulch (PM) and plastic mulch with row covers (PMRC) versus the commonly used matted-row system (MRS) was evaluated on phenolic composition and oxygen radical absorbance capacity (ORAC) of 'Orléans' strawberry at three different harvest times during growing season. Six major groups of phenolic compounds, including anthocyanins, hydroxycinnamic acids, kaempferol, flavonols, ellagic and benzoic acids, were assessed in strawberry. Production systems significantly affect the antioxidant capacity and phenolic content of strawberry. PMRC generally enhanced the phenolic content and total antioxidant capacity compared to MRS and PM, but the effects varied during the harvest season. Therefore, PMRC could be a recommended production system to improve the nutraceutical value of strawberry fruits especially in cooler climates.