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| **ISHS Acta Horticulturae 1110:** **[XXIX International Horticultural Congress on Horticulture: Sustaining Lives, Livelihoods and Landscapes (IHC2014): International Symposium on Molecular Biology in Horticulture](http://www.actahort.org/books/1110/index.htm)****Effect of exogenous ethylene on the expression of *FaETR1* and *FaERS1* genes during ripening of 'Camino Real' strawberry** |

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| **Keywords:**   | *Fragaria × ananassa*, non-climacteric fruit, ethephon, qPCR |
| **DOI:**   | [10.17660/ActaHortic.2016.1110.18](http://dx.doi.org/10.17660/ActaHortic.2016.1110.18) |
| **Abstract:** Ripening of strawberry, a non-climacteric fruit, is not well understood although it has been used as a model system. Exogenous ethylene stimulates ripening of citrus and grape, but in strawberry the results are contradictory. The aim of this work was to check the effect of exogenous ethylene treatment in green, white, pink and red strawberry fruits on the expression of *FaETR1* and *FaERS1* receptor genes involved in ethylene signaling. The expression of two ethylene receptors was monitored by quantitative real-time polymerase chain reaction (RT-qPCR) and were evaluated in field trials and postharvest tests. The highest levels of *FaETR1* gene transcription were registered in the white fruits treated in the field, but did not differ from control in the postharvest. A different pattern was obtained for the *FaERS1*, where expression increased after 24 h of treatment in the field and highest level of expression was 4 h after treatment of postharvest green fruit. The abundance of transcripts of receptors genes was not influenced so much by exogenous ethephon treatment, with the highest accumulation of transcripts in postharvest testing. But the results show that exogenous ethylene application did not affect the expression pattern of receptor genes. The changes observed in expression patterns of receptor genes help us in discovering the mechanism of regulation of ethylene response in fruit ripening. |