

## ORNISIM: A MODEL FOR SIMULATING THE DEVELOPMENT OF *Ornithogalum saundersiae* BAKER

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Crop simulation models are key tools to help flower growers in planning management practices and flowering time. The objective in this study was to develop a robust developmental model for *Ornithogalum saundersiae*, named OrniSim, for field applications. The model describes leaf appearance and timing of developmental stages, including harvest point, and the low (chilling) and high (heat) temperature effects on flower quality. The developmental model simulates, on a daily basis, the cumulative leaf number and phenology using a non-linear temperature response function and genotype-specific coefficients considering three main phases: bulb sprouting phase, vegetative phase, and reproductive phase. Data from nine on-farm experiments conducted during five years (2021–2025) with several planting dates in seven locations across Rio Grande do Sul State and in two locations in Paraíba State, Brazil, were used. These planting date × year × location experiments provided a rich data set for parameterizing and evaluating the *Ornithogalum* model. The OrniSim model simulated the dynamics of leaf development, final leaf number, and the timing of developmental stages among planting dates, years, and locations, with an overall RMSE of 1.4 leaves for leaf development, 2.8 leaves for final leaf number, 13 days for the date of visible bud, and 16 days for harvest point. OrniSim was also accurate in predicting the effects of chilling and high-temperature damage on flowers.

Keywords: phenological development; model; *Ornithogalum saundersiae*.

### Organizadores:

