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DELAYING FLORET ABSCISSION IN RED CESTRUM (*Cestrum elegans* Schlecht) CUT FLOWERS BY 2,4-D AND NAA DEPENDS ON THEIR TRANSPORT, METABOLISM AND *Aux/IAA* GENE ACTIVATION

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Floret abscission in red cestrum (*Cestrum elegans*) cut flowers was delayed by the synthetic auxin 2,4-diclorophenoxyacetic acid (2,4-D) after pulse treatment but not by α-naphthaleneacetic acid (NAA). Significant amount of 2,4-D moved acropetally, sufficient to reduce floret abscission, while NAA failed to do so. Although increasing the pH of the pulsing solution increased acropetal translocation of NAA and improved its effectiveness in delaying floret abscission, 2,4-D remained more effective. In florets and leaves, more 2,4-D remained in its active free form, while NAA was quickly conjugated. We hypothesized that these differences in transport and metabolism of the two auxins might result from differential activation of the early auxin responsive (*Aux/IAA*) genes, which were used as molecular markers of auxin activity. Northern hybridization and RT-PCR results of six different *Aux/IAA* cDNAs, cloned from the floret abscission zone (AZ), showed temporal and spatial differences in the expression level of their encoding genes, with 2,4-D inducing higher level than NAA. The expression level of all six genes decreased after three days from harvest, and was inversely related to the increased floret abscission during this period. Taken together, our results suggest that due to the differences in transport and metabolism of the two synthetic auxins, more free auxin accumulates in the floret AZ following 2,4-D treatment, thereby activating continuously the *Aux/IAA* genes, and reducing floret abscission.