

# Thidiazuron stimulates *in vitro* shoot regeneration from cotyledonary node explants in mango

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## INTRODUCTION

The increasing expansion of mango (*Mangifera indica* L.) consumption is resulting in a growing demand for high-quality plants from farmers. Mango is recalcitrant to *in vitro* micropropagation, similar to other species in the family *Anacardiaceae*. Previous studies in our group revealed the cotyledonary node (CN) in mango as a reactive explant (Conde et al., 2023). The use of CN explants was also successful for cashew (*Anacardium occidentale* L.) micropropagation (Nanti et al. 2020). High frequency regeneration from CNs, induced by thidiazuron (TDZ), has been previously reported in other woody plants, such as *Anacardium occidentale*, *Cassia sophera* and *Sterculia urens* (Nanti et al. 2020; Parveen and Shahzad 2010; Hussain et al. 2007).

## AIM OF THE STUDY

We explored the effect of the application of TDZ over CN explants to develop an efficient micropropagation method in mango.



## MATERIAL AND METHODS

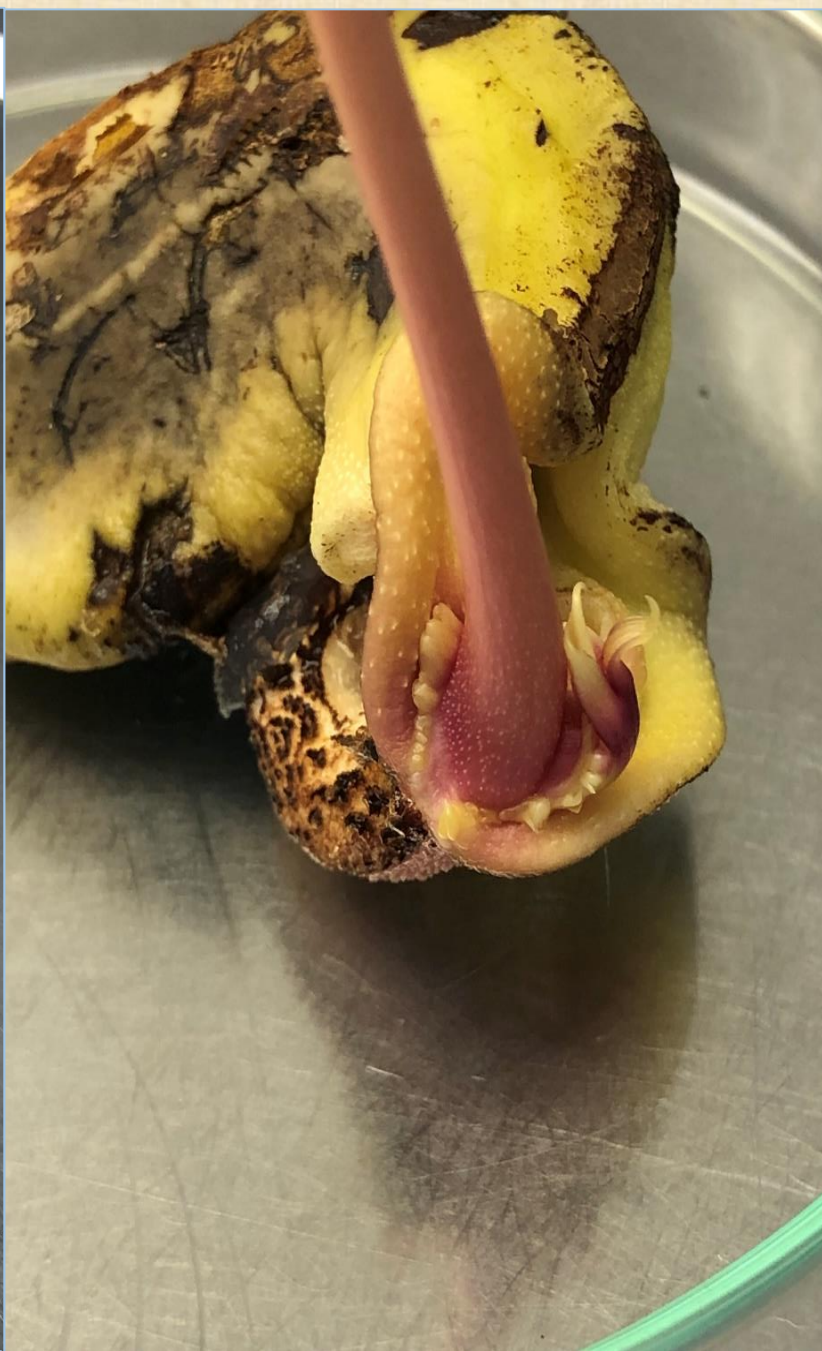
Mature seeds of ‘Ataulfo’ (polyembryonic) and ‘Irwin’ (monoembryonic) genotypes were placed onto germination medium (Conde et al., 2023) with different doses of TDZ. Adventitious shoot regeneration from CN was evaluated after 3 weeks of culture (Tables 1 and 2). Student’s t-test was applied to analyze data.

**Table 1:** Effect of TDZ on the regeneration of mango cv. ‘Irwin’ CN explants after 3 weeks in culture

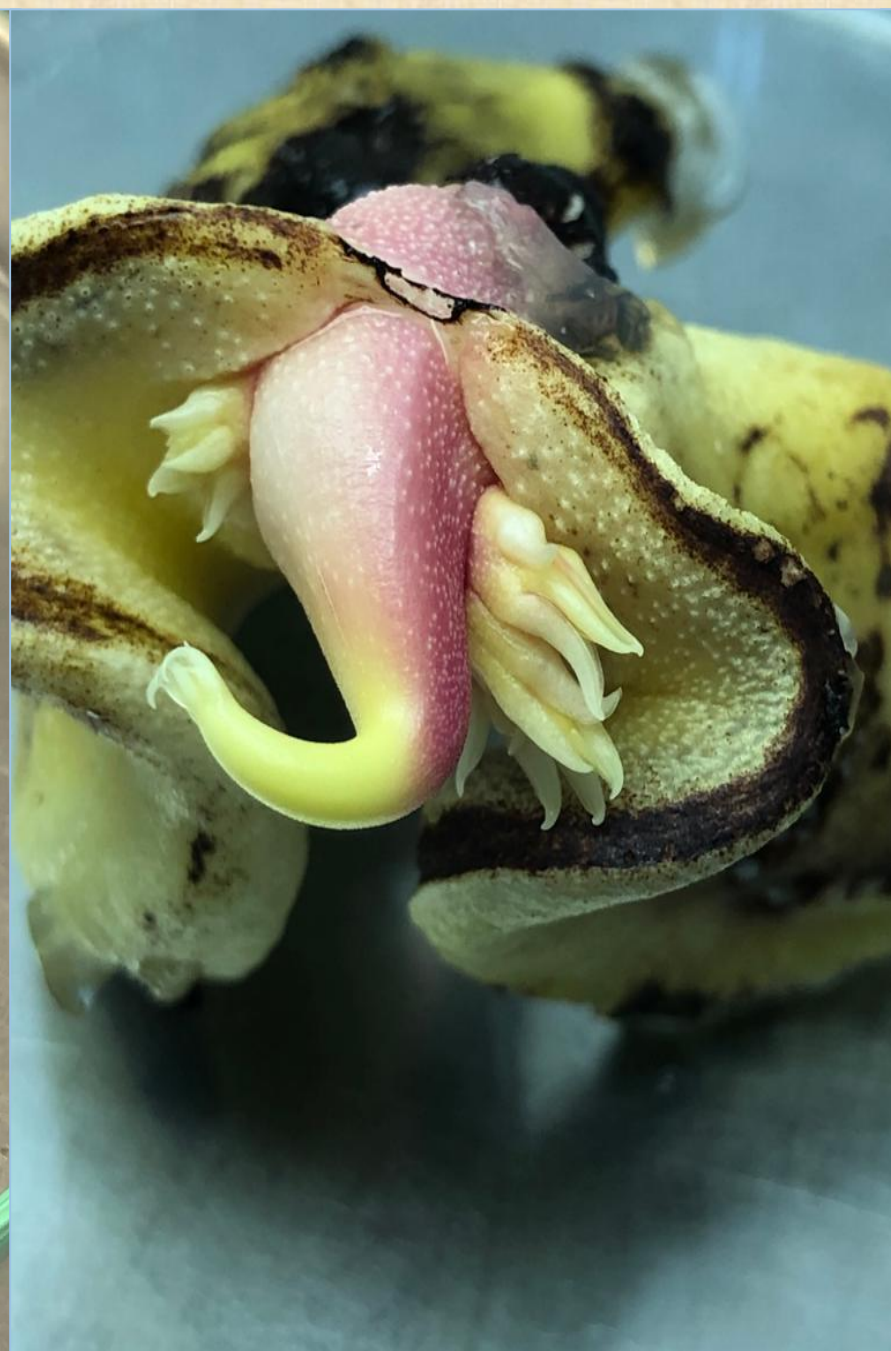
TDZ (mg/L)	NUMBER OF EXPLANTS	EXPLANTS WITH SHOOTS (%)	Nº EVENTS/ REGENERATING EXPLANTS	EXPLANTS WITH MULTIPLE BUD (CLUSTERS) REGENERATION PATTERN (%)
0.0	29	48.27 a	2 a	0 a
1.0	29	95.24 b	5.1 b	70.59 b
2.0	26	90.48 b	6.74 b	75 b
3.0	28	95 b	5.8 b	69.09 b



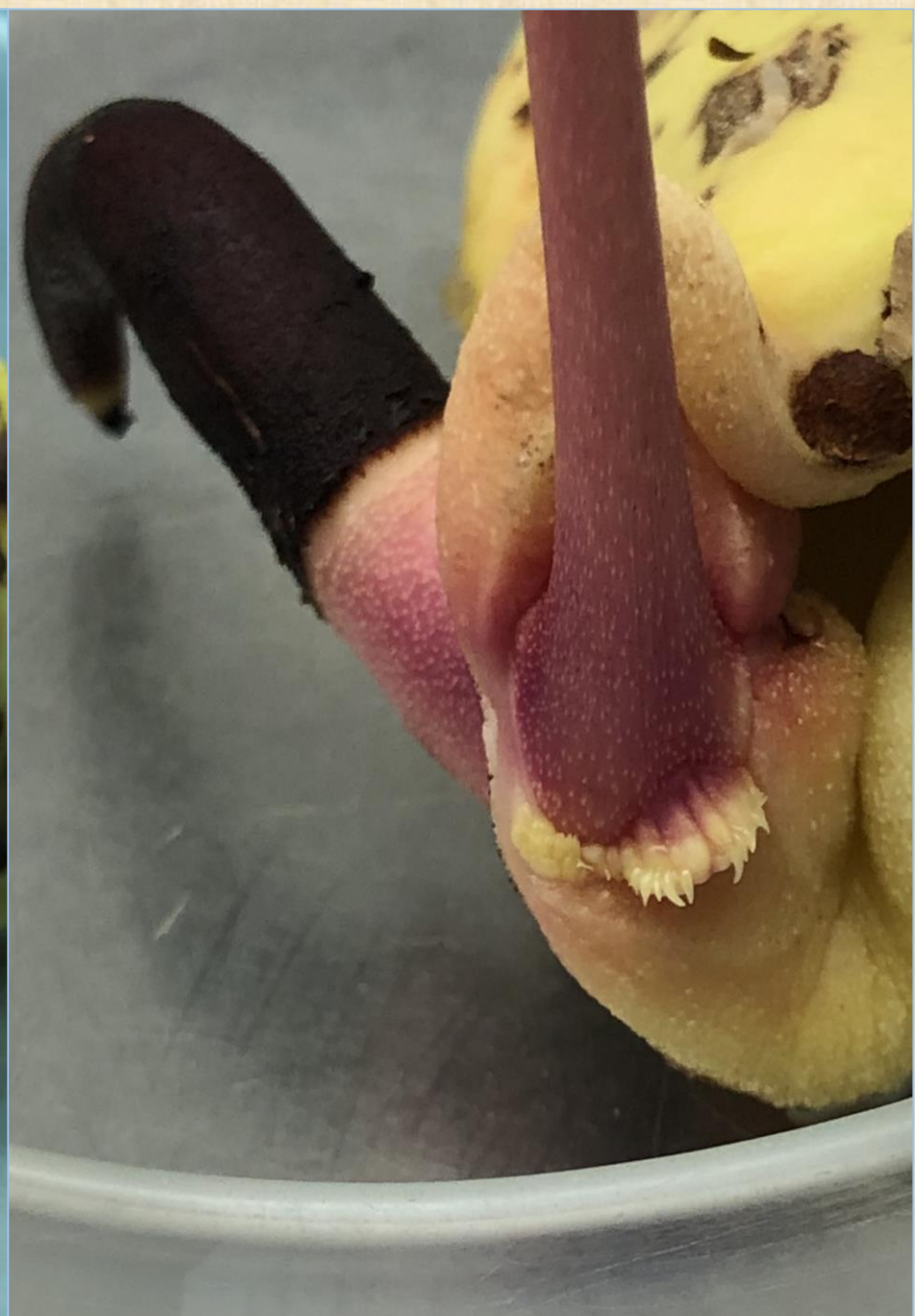
IRWIN 0.0 mg/L TDZ



IRWIN 1.0 mg/L TDZ



IRWIN 2.0 mg/L TDZ



IRWIN 3.0 mg/L TDZ

**Table 2:** Effect of TDZ on the regeneration of mango cv. ‘Ataulfo’ CN after 3 weeks in culture

TDZ (mg/L)	NUMBER OF EXPLANTS	EXPLANTS WITH SHOOTS (%)	Nº EVENTS/ REGENERATING EXPLANTS	EXPLANTS WITH MULTIPLE BUD (CLUSTERS) REGENERATION PATTERN (%)
0.0	33	9 a	1.25 a	0 a
1.0	33	87.87 b	4.03 b	82.05 b
2.0	31	92.86 b	6.27 b	86.42 b
3.0	38	81.81 b	5.11 b	69.56 b



ATAULFO 0.0 mg/L TDZ



ATAULFO 1.0 mg/L TDZ



ATAULFO 2.0 mg/L TDZ



ATAULFO 3.0 mg/L TDZ

## CONCLUSIONS

TDZ significantly improved shoot regeneration from CN in both genotypes tested. Our results represent a significant improvement for *in vitro* plant regeneration/mass propagation of mango.

## ACKNOWLEDGEMENTS

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