

## ***In vitro* regeneration and *Agrobacterium*-mediated transformation system of jojoba *Simmondsia chinensis* (Link.) Schneider**

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### **Abstract**

Jojoba [*Simmondsia chinensis* (Link.) Schneider] is an oil crop that has received much attention in recent years for its valuable oil. Combinations of 6-benzyladenine (BA) and thidiazuron (TDZ) were used to establish *in vitro* regeneration protocol from nodal segments of jojoba. Regenerated shoots were cultured on root induction media containing different concentrations of indole-3-butyric acid (IBA). Supplementing TDZ to regeneration media increased the rate of sprouting buds as well as number of shoots per explant. For root induction from the shoots, indole-3-butyric acid (IBA) was effective to increase the root number. An established *in vitro* regeneration protocol from nodal segments is suitable for a large-scale propagation, genetic transformation and conservation of elite jojoba cultivars. Foreign gene was introduced into jojoba via *Agrobacterium*-mediated transformation, and demonstrated that regeneration of multiple shoots from nodal segment could be an efficient tool for the jojoba genetic transformation. Shoots with transgenic cells were selected by 30 mg L<sup>-1</sup> of hygromycin. Results of this study will provide the way to generate transgenic jojoba plants. Establishment of the transformation method in jojoba should facilitate improvement of this unique oil crop via generating transgenic plants with genes of biological or agricultural interest.