

SAT-80

## Direct Regeneration And Assessment Of Somaclonal Variation Using Inter Simple Sequence Repeat Analysis (ISSR) In *Orthosiphon stamineus* Benth

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**Abstract**—*Orthosiphon stamineus* has been widely used as traditional remedies. Tissue culture technique was used in this study to induce production of direct regeneration through nodal segment of this species using various concentration of Kinetin (6-furfurylaminopurine) and IAA (Indole-acetic acid) hormones (0 - 2.0 mg L<sup>-1</sup>) either supplemented singly or in combination. Data was collected after 4 weeks of culture. 1.5 mg L<sup>-1</sup> Kin supplemented singly observed to produce the highest mean number of shoots (3.21 ± 0.30) and leaves (15.10 ± 0.15) per explant while 2.0 mg L<sup>-1</sup> IAA observed to produce the highest number of roots per explant (4.60 ± 0.65). Overall, the combination between 2.0 mg L<sup>-1</sup> Kin plus 0.5 mg/L IAA was found to produce highest mean number of shoots (4.57 ± 0.42) and leaves (20.53 ± 1.91) per explant, nevertheless the production of root was relatively low (0.73 ± 0.27 per explant). Inter-simple Sequence Repeat (ISSR) were used in this study to detect genetic diversity among *in vivo* and 25 *in vitro* regenerant of *O. stamineus* after subcultured trice. 18 working primers produces polymorphic bands, which averaged 7.11 bands per primer. The percentage of polymorphism was high (60% and above). Most samples are ranging between 0.83 to 1.0 indicating high genetic distance among these samples. This result indicates that somaclonal variation occur involves genome alteration and not epigenetic as high polymorphism detected in this study.

### Abbreviations

IAA Indole-acetic acid

Kin Kinetin

**Keywords**—indole-acetic acid; kinetin; *Orthosiphon stamineus*; somaclonal variation; ISSR