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## INTRODUCTION

Rapid multiplication of cassava is very important in production of cassava planting material. The success of plantlet acclimatization and field survival depends on the medium used for propagation. Semi-Autotrophic Hydroponics (SAH™), a SAHtechno technology, was adapted for rapid multiplication of cassava in 2016 at the International Institute of Tropical Agriculture (IITA). SAH™ has demonstrated a high cassava propagation ratio compared to other methods.

## PURPOSE

The study was designed to evaluate the effect of growth nutrients and a powdered rooting hormone, IBA, on growth of SAH™ plantlets.

## METHODOLOGY

Two improved cassava varieties released in Nigeria, (IITA-TMS-IBA011368 and IITA-TMS-IBA010040) were used as test genotypes using three treatments; (i) SAH™ nutrient solution (NS), (ii) indole-3-butyric acid (IBA) and (iii) a combination of both NS and IBA. All plantlets were recut twice. Sixty (60) plantlets were tested for each treatment using a completely randomized design. Percentage plantlet survival and growth data were collected. These data were analysed in SAS 9.4 using GLM model procedure.

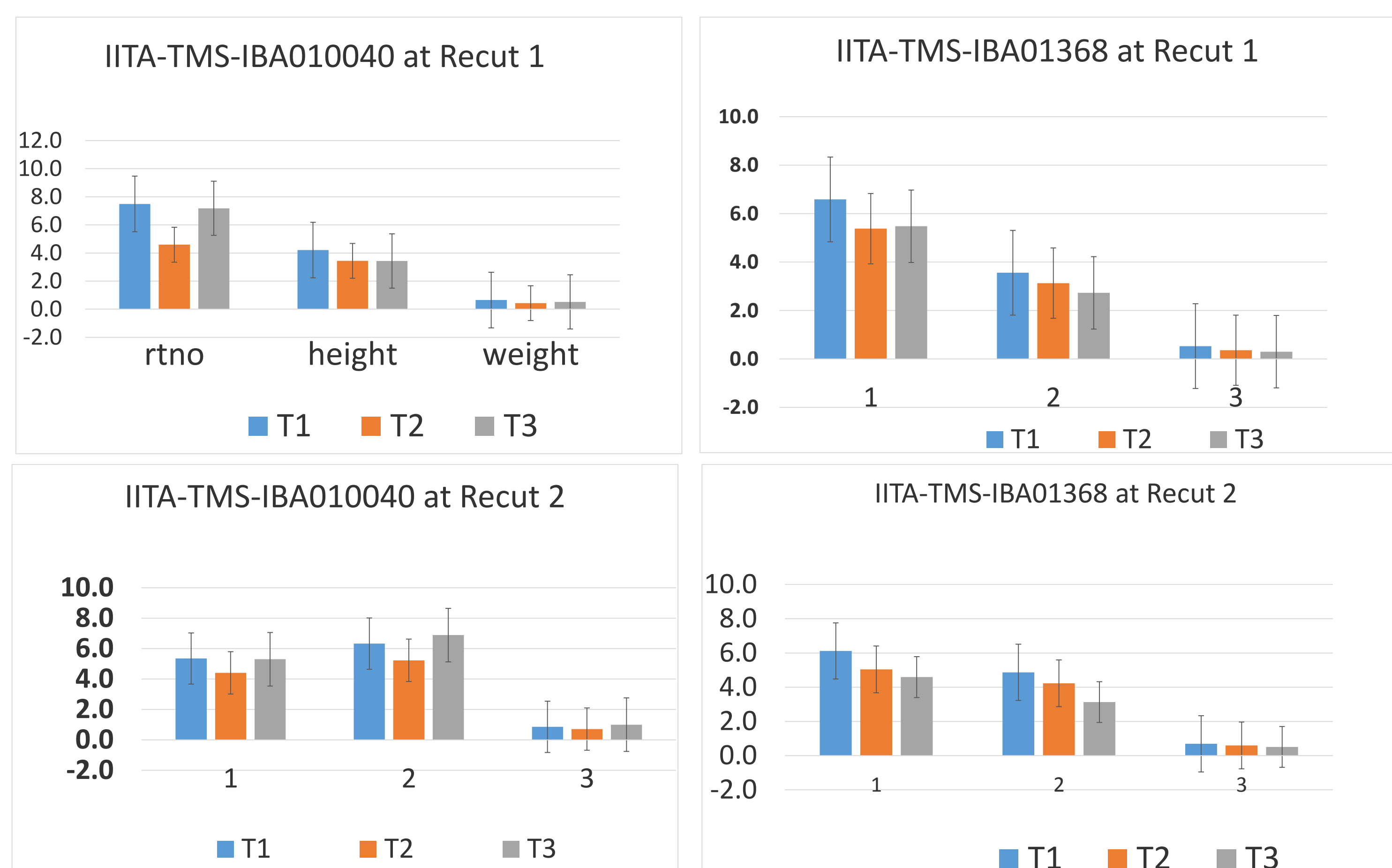
## RESULTS AND DISCUSSION

There was a significant effect of treatments on root number, plantlet height and weight were significant ( $P < 0.05$ ) for recut time (Table 1). Mean values for all treatment combinations are illustrated in Figure 1. IBA010040 with the rooting hormone had the highest root number after the first recut, 7.49. The treatment combination of variety IBA010040 with nutrients at the second recut gave the highest plant height, 6.89 cm and plantlet weight, 1 g. The same treatment showed the lowest plant height, 2.73 cm and weight, 0.3 g, for variety IBA011368 (Figure 1). IBA+NS had the best survival, 95.8%, compared to the sole treatments 88.2% (IBA) and 93.3% (NS) (Figure 2).

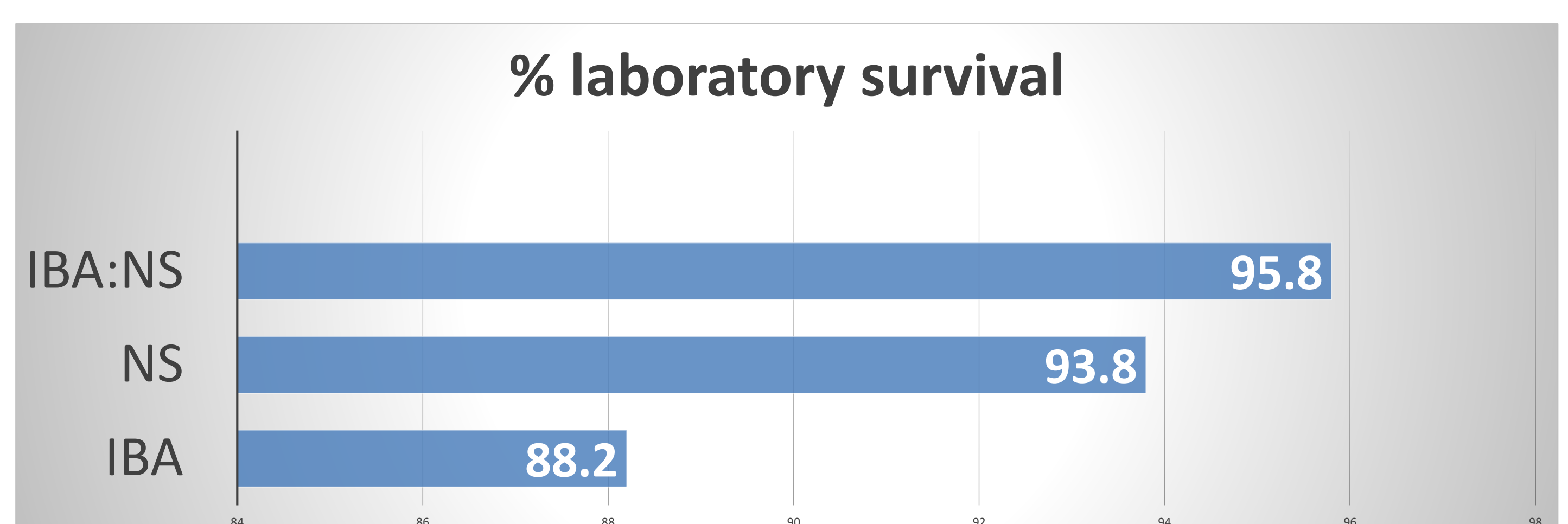
**Table 1:** Mean square values of growth components of SAH™ cassava plantlets

Source of variation	Df	Root number	Plantlet height	Plantlet weight
Genotype	1	0.1 <sup>ns</sup>	11.7 **	0.3 **
Recut	1	7.8**	19.1 **	0.4 **
Rep	2	0.4 <sup>ns</sup>	0.3 <sup>ns</sup>	0.1 <sup>ns</sup>
Treatment	2	6.6 **	2.5 <sup>ns</sup>	0.0 <sup>ns</sup>
Genotype*treatment	2	3.2*	2.5 <sup>ns</sup>	0.0 <sup>ns</sup>
Genotype*Recut	1	0.6 <sup>ns</sup>	3.8 <sup>ns</sup>	0.1 <sup>ns</sup>
Error	9	0.9	1.6	

\*, \*\* significant; ns= not significant



**Figure 1:** SAH™ treatment means for two cassava genotypes and three treatments T1-nutrient solution only, T2-IBA only, and T3-combined NS and IBA.



**Figure 2:** Percentage survival of the SAH™ plantlets under the different treatments

## CONCLUSION

The study documented growth and survival of plantlets with a combination of the SAH™ nutrient solution and the rooting hormone, IBA. Further research is suggested to understand optimal growth conditions for the SAH™ technology

## ACKNOWLEDGEMENT