



# THE EFFECT OF PLANT GROWTH REGULATORS ON IN VITRO CUCUMBER (*Cucumis sativus* L.) REGENERATION



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## INTRODUCTION

The main objective of this study was to establish a culture of different explants from cucumber (*Cucumis sativus* L.), genotypes SV0091 and Nomia F1, to determine their efficiency for regeneration into a whole plant.

## MATERIALS AND METHODS

- ❖ **Starting explants:** apical buds, hypocotyls, cotyledon cuts (K1, K2, K3)
- ❖ **MS medium + plant growth regulators:**
  - MS1 (MS+0.1 mg/l IBA+0.5 mg/l IAA+3.0 mg/l KIN),
  - MS2 (MS+0.5 mg/l IAA+3.0 mg/l BAP),
  - MS3 (MS + 0,1 mg/l IBA + 1,5 mg/l BAP + 0,5 mg/l KIN) and
  - MS4 (MS + 0,1 mg/l NAA + 1,0 mg/l BAP).
- ❖ The cultures were grown in a climate chamber under controlled conditions at a temperature of 25 °C and a photoperiod of 16 hours light and 8 hours dark.
- ❖ After 60-70 days, *de novo* plants and well-rooted shoots were transferred to plastic pots filled with sterilized peat mixed with perlite and they were put through acclimatization process.

## CONCLUSIONS

- ✓ The ***de novo* plants and shoots** in different percentages were obtained from apical buds from genotypes cultivated on MS1.
- ✓ The **apical buds** from Nomia F1 on MS3 and MS4 responded with *de novo* plants, shoots, calluses and roots formation.
- ✓ The **hypocotyls and cotyledon** segments from both genotypes responded mostly with callus and roots on MS1, MS3 and MS4 media.
- ✓ The MS2 medium was unsuccessful for micropropagation from all initial explants from both genotypes.

## RESULTS & DISCUSSION

Table 1. SV0091 explants response to different plant growth regulators.

Genotype SV0091					
Starting explant	Apical bud	Hypocotyl	K1	K2	K3
MS1 (MS + 0,1 mg/l IBA + 0,5 mg/l BAP + 0,5 mg/l KIN)					
<i>De novo</i> plants (%)	50,0	4,0	1,0	0	1,0
Shoots (%)	100,0	0	0	0	0
Callus (%)	90,0	98,0	83,0	45,0	49,0
Roots (%)	38,0	4,0	5,0	2,0	1,0
Acclimatization (%)	100,0	50,0	0	0	0
MS2 (MS+0,5 mg/l IAA+3,0 mg/l BAP) did not induce any response for the starting explants.					

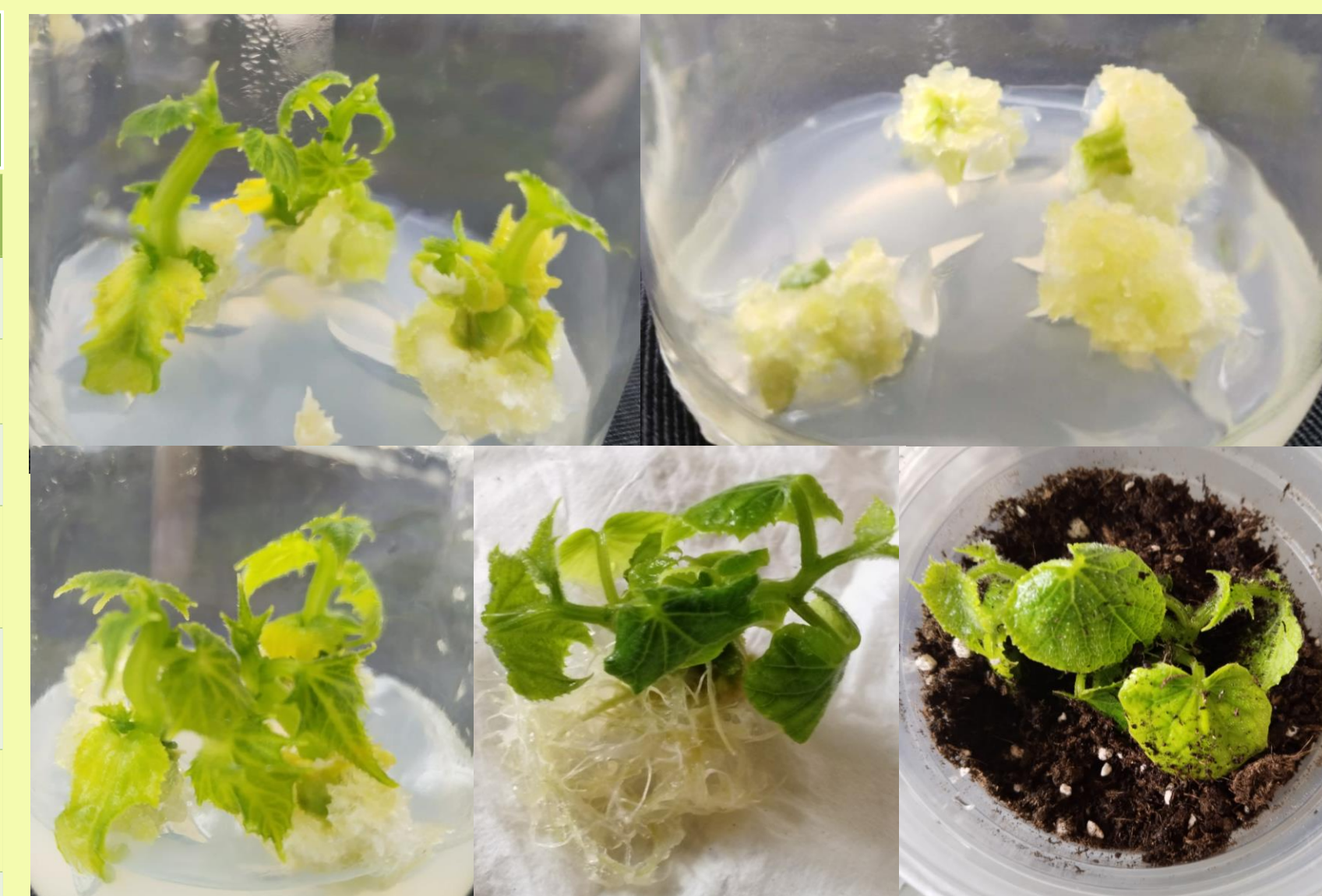


Figure 1. Formation of *de novo* plants, shoots, roots and regenerants acclimatization.

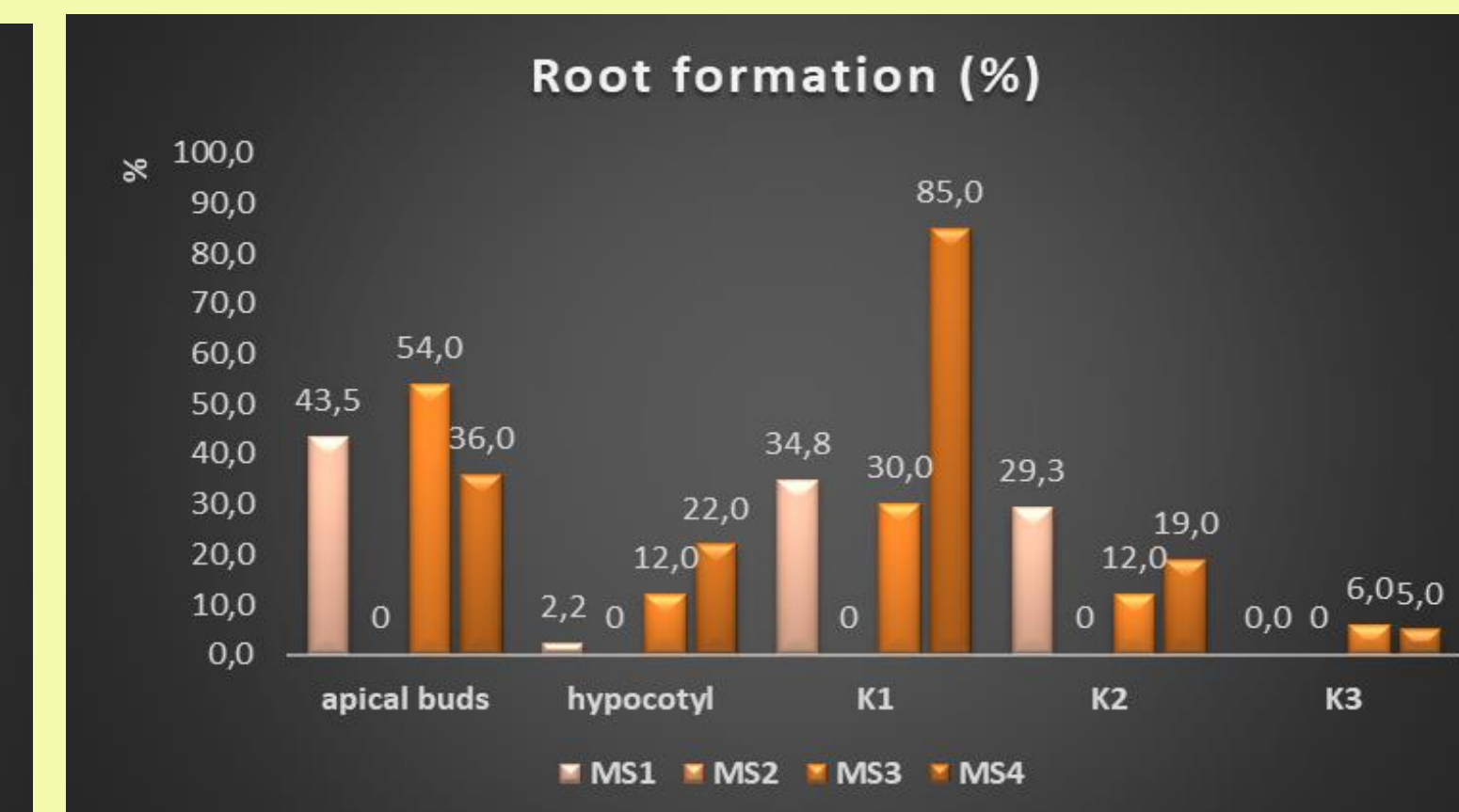
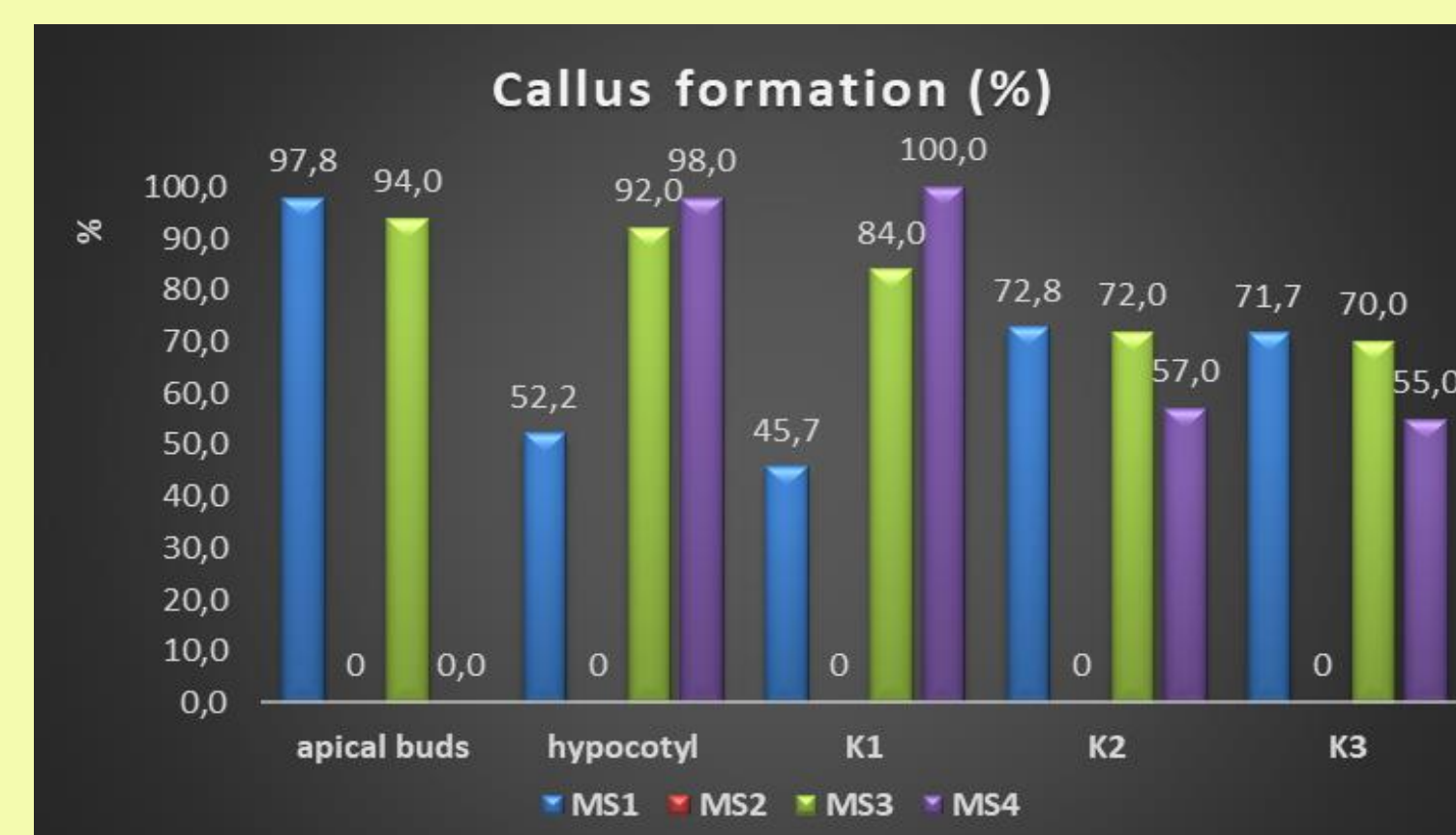
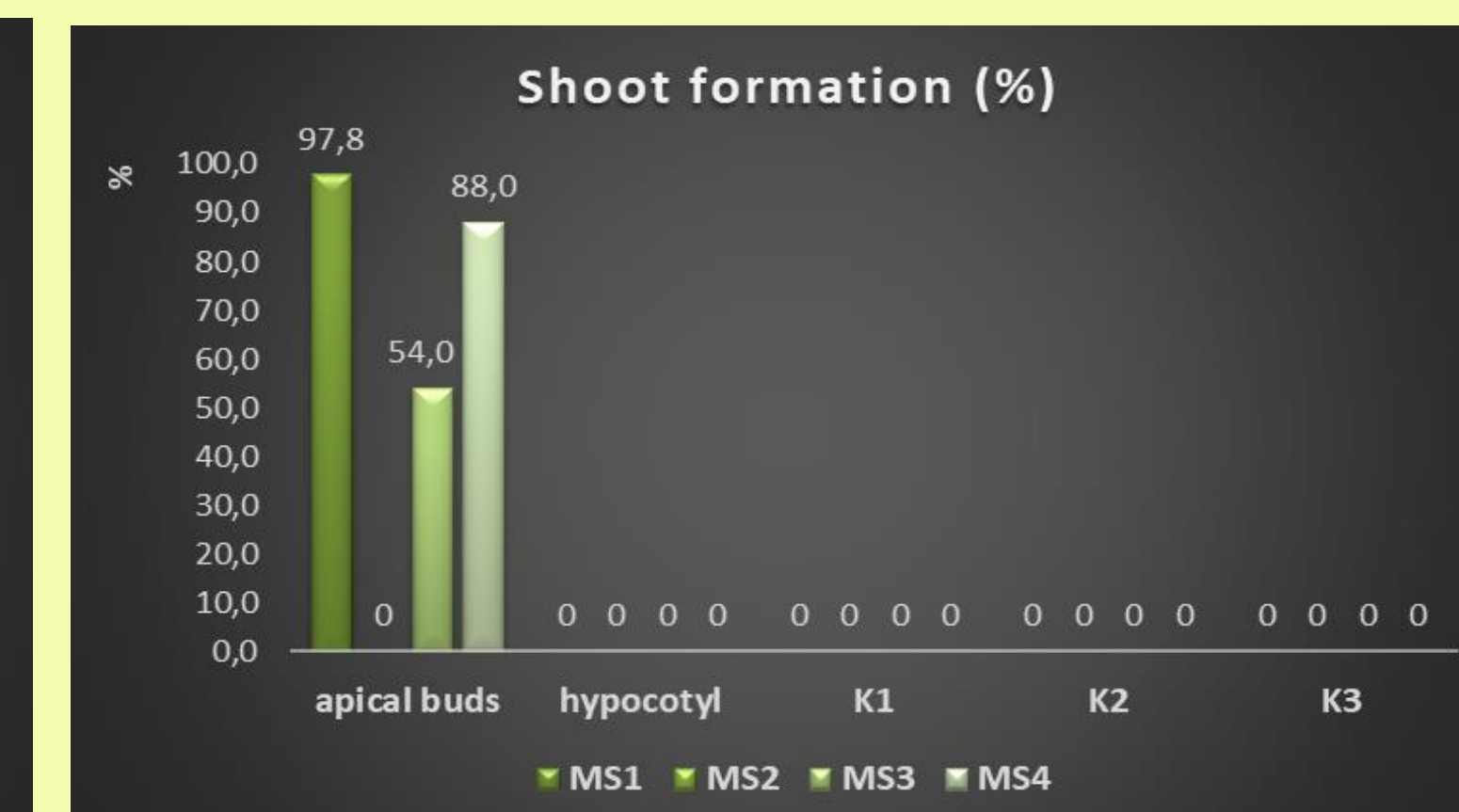
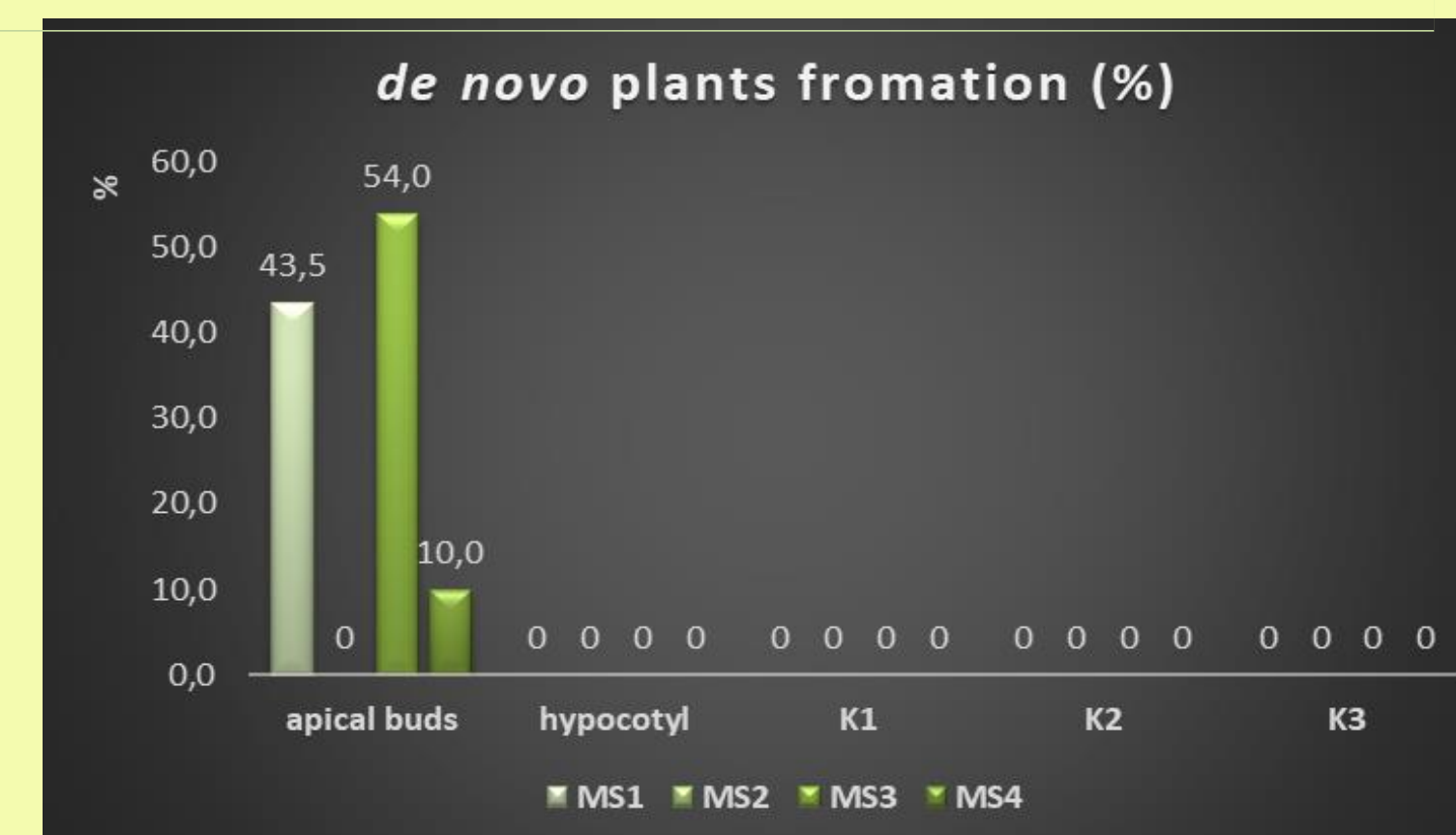


Figure 1. Nomia F1 explants response to different plant growth regulators.