



Regenerative Agriculture and Eco-Efficiency: An On Farm Study in Goiás, Brazil

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INTRODUCTION

- Eco-efficiency has been studied for the last 30 years;
- Regenerative agriculture has re-emerged as another sustainable approach;
- Objective: Analyze the soybean farms' eco-efficiency and the impact of regenerative practices.
- Question: How eco-efficient are soybean farms from the municipality of Rio Verde and how does Regenerative Agriculture influence the results?

METHODOLOGY

- 30 soybean field plots' eco-efficiency was analyzed (17 regenerative);
- SBM-DEA + Econometric Regression;
- 2 cropping years: 2022/2023 and 2023/2024.

STUDY AREA LOCATION

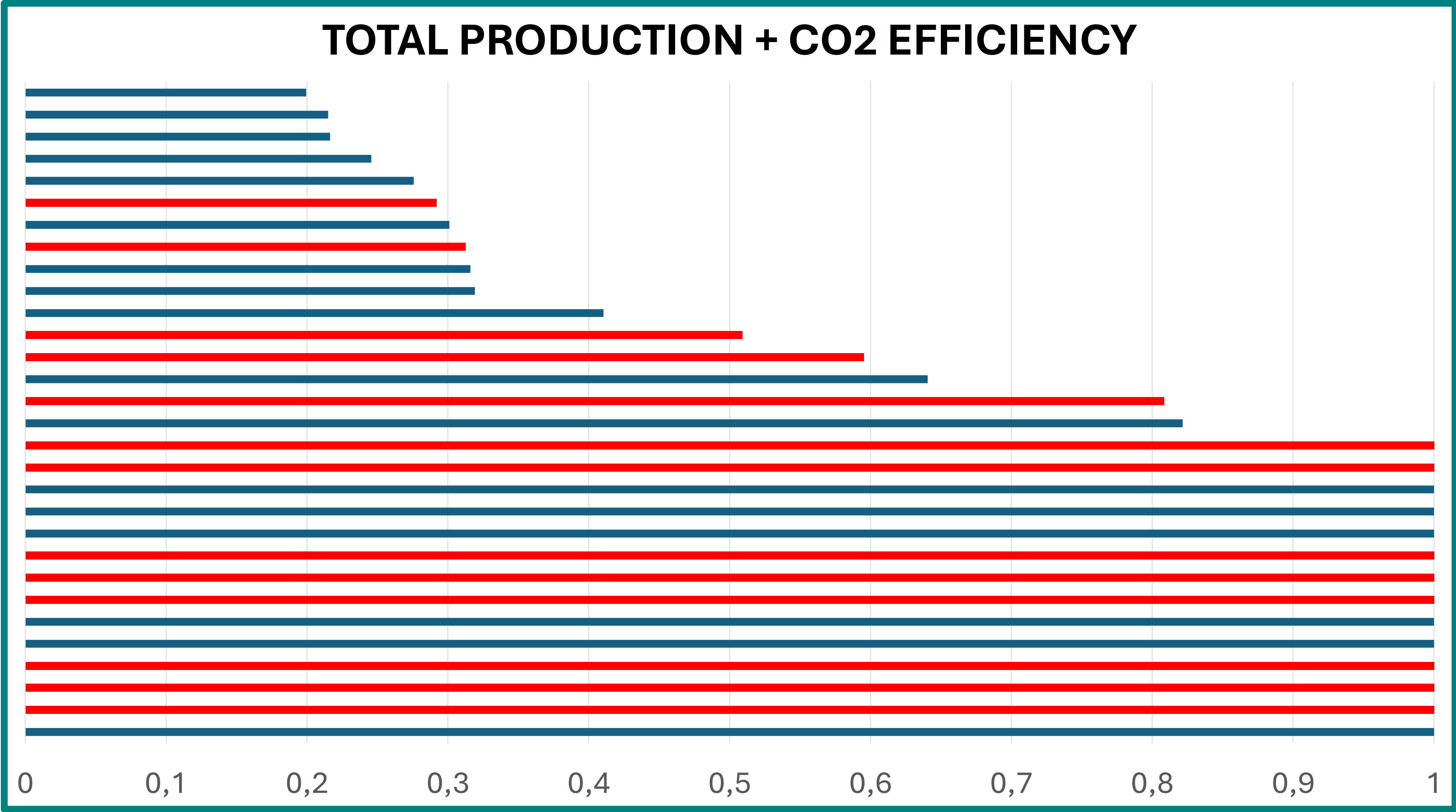
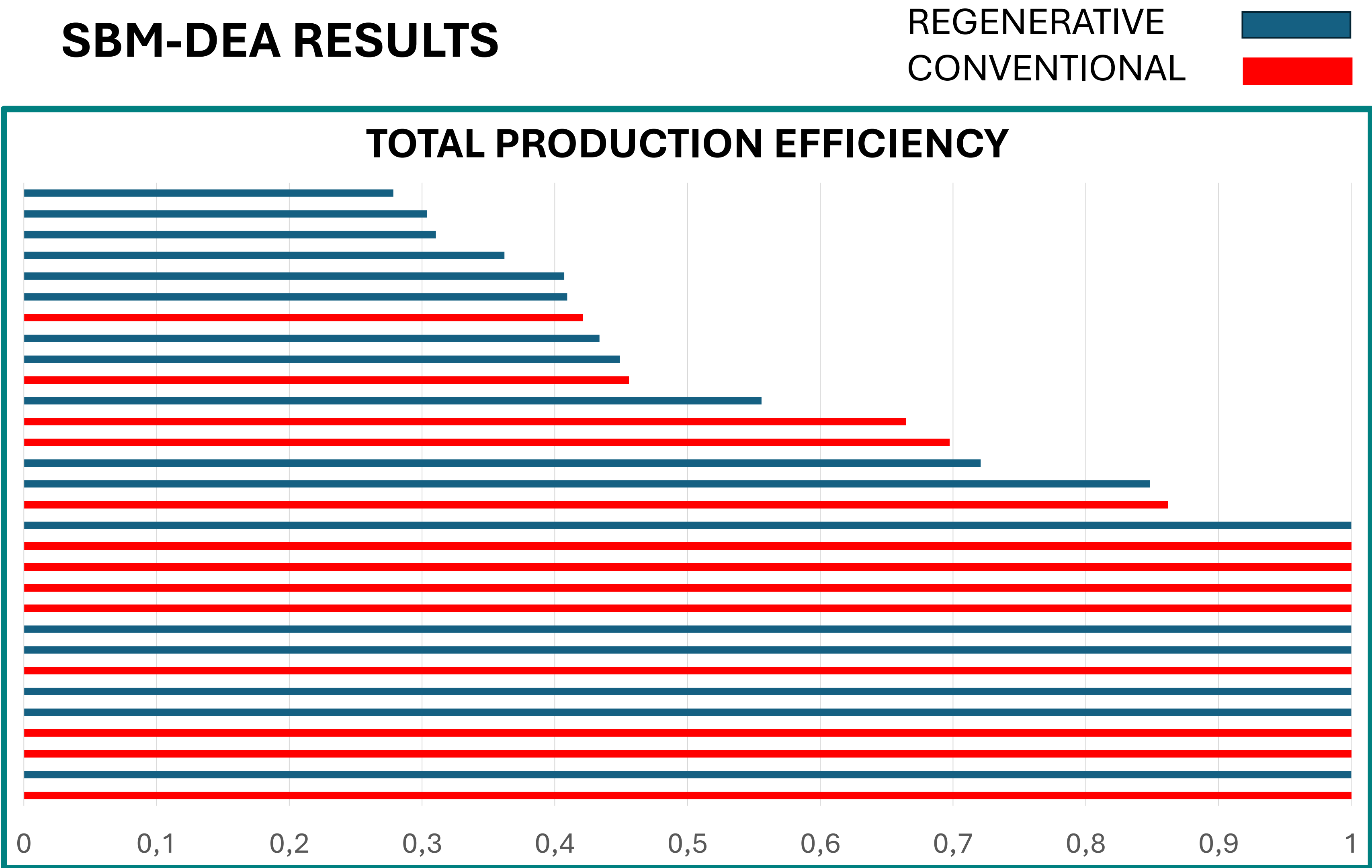


SOYBEAN REGENERATIVE FIELD



RESULTS

SBM-DEA RESULTS



ECONOMETRIC REGRESSION RESULTS

VARIABLES	EFF SBM-DEA	EFF SBM-DEA CO2
FERTILIZER	2.88e-08	5.78e-08
FUNGICIDE	-0.000366*	-0.000466
HERBICIDE	-0.000326*	-0.000390*
INSECTICIDE	0.000174*	0.000220*
HECTARE	0.00213	0.00262
PRECIPITATION	-0.000313	-0.000344
MEAN TEMPERATURE	-0.0213	-0.0258
REGENERATIVE	-0.143	-0.155
CONSTANT	1.657	1.755
OBSERVATION	30	30
R-SQUARED	0.456	0.456

*** p<0.01, ** p<0.05, * p<0.1

CONCLUSIONS

- Regenerative fields were less eco-efficient than conventional farms.
- Regenerative practices did not have a positive impact on eco-efficiency.

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