

# Pomen razvoja novih metod za trajnostno kmetijstvo prihodnosti

## Trends in Plant Science

Available online 11 September 2022

In Press, Corrected Proof



Forum

### Toward learning the principles of plant gene regulation

Jan Zrimec<sup>1</sup>, Aleksej Zelezniak<sup>2</sup>, Kristina Gruden<sup>1</sup>

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<https://doi.org/10.1016/j.tplants.2022.08.010>

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First published: 10 August 2022 | <https://doi.org/10.1111/nph.18425>

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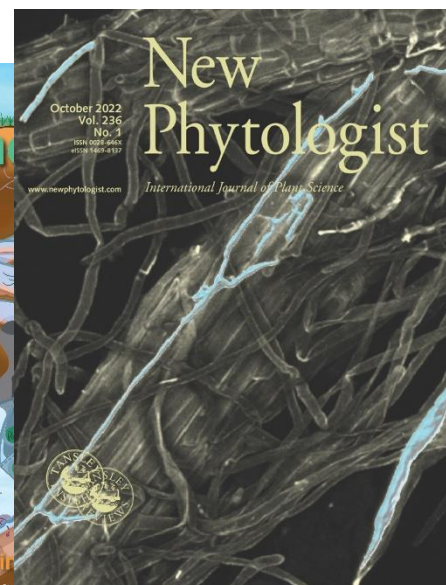
### Controlling gene expression with deep generative design of regulatory DNA

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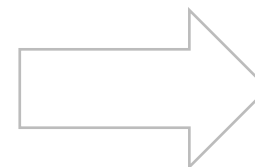


## GROWTH IN GLOBAL FOOD DEMAND TO 2050

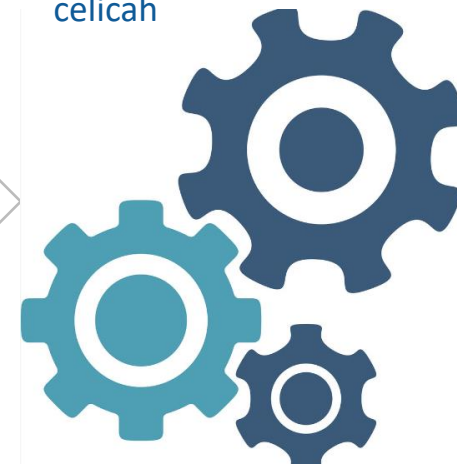
Pridelati bo treba **več** hrane  
**brez povečanja** kmetijskih površin  
z **manjšo** uporabo agrokemikalij

Stres povzroči bistveno izgubo pridelka –  
rešitev **tolerantne sorte**

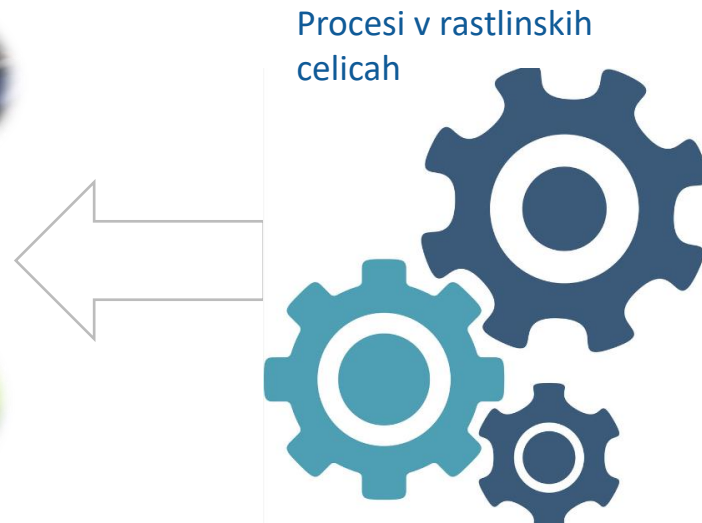
# Toleranca?



Procesi v rastlinskih celicah



# Toleranca?

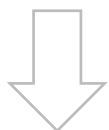


# Procesi v rastlinah

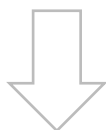


40.000 genov  
100.000 proteinov  
400.000 malih molekul

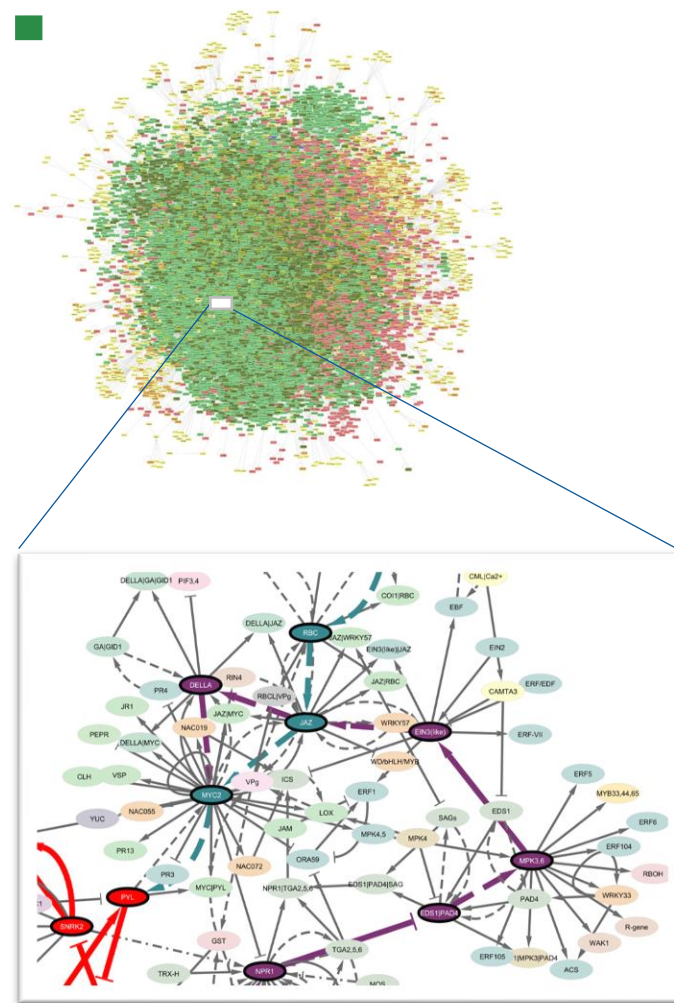
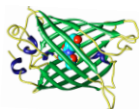
30 vzorcev – 1MIO podatkov



Uporaba AI za boljše razumevanje



Genetski biosenzorji za študiranje *dinamike* omrežij



# Zahvala: Oddelku za biotehnologijo in sistemsko biologijo!

