

Ekotoxikologické hodnocení organických hnojiv

Martin Váňa
NRL-OMB

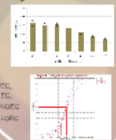


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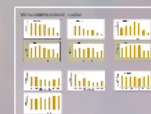
Na co se zaměříme



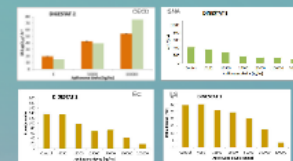
Vyhodnocení dat



Hnojiva



DIGESTÁT 2



Závěry

nelze zobecňovat závěry pro danou skupinu (digestáty, komposty ...)

důležité složení vstupních surovin u digestátů a kompostů

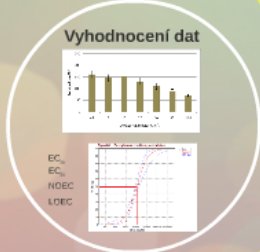
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www.nrlomb.cz

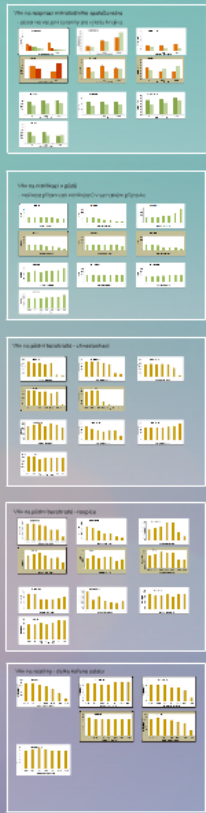
Na co se zaměříme

- testy a jejich technika
- vyhodnocení výsledků
- aplikace ve realitě (příklady)
- závěrečné sdělení



Hnojiva

- digestáty
keřky
- komposty
- recyklovaný odpad



Ekotoxikologické hodnocení organických hnojiv

Martin Váňa
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Brno 01/2016

Na co se zaměříme

- testy a jejich možnosti
- vyhodnocení výsledků
- testované materiály (hnojiva)
- konkrétní příklady



Na co se zaměříme

- testy a jejich možnosti
- vyhodnocení výsledků
- testované materiály (hnojiva)
- konkrétní příklady



Testy



Dekompozitoři

- půdní mikroflora



- *Arthrobacter globiformis*



Producenti

- nitrifikace



- salát



Konzumenti

- chvostaskok



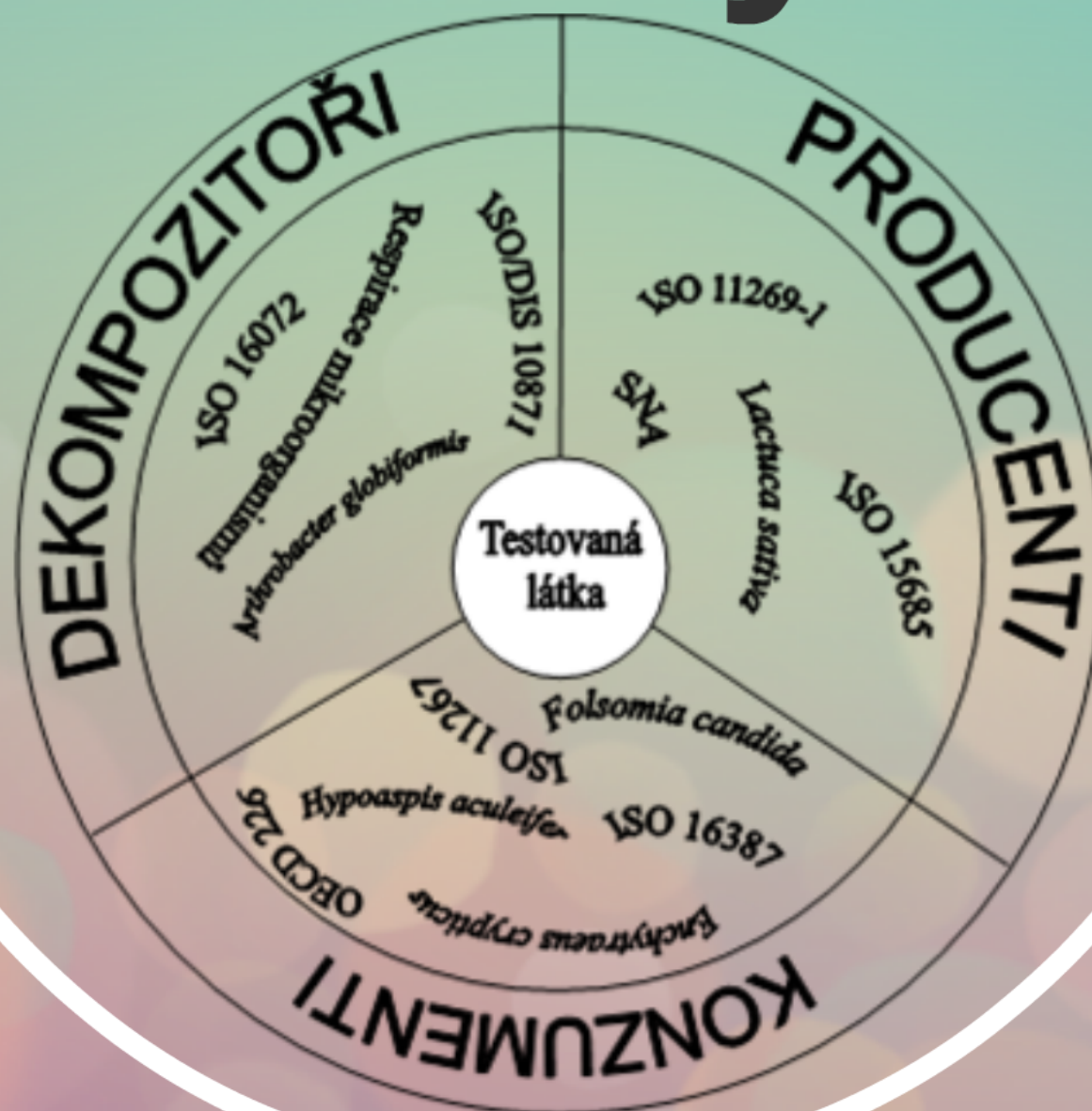
- roupice



- dravý roztoč



Testy



Dekompozitoři

- půdní mikroflora



- *Arthrobacter globiformis*



Producenti

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Konzumenti

- chvostoskok



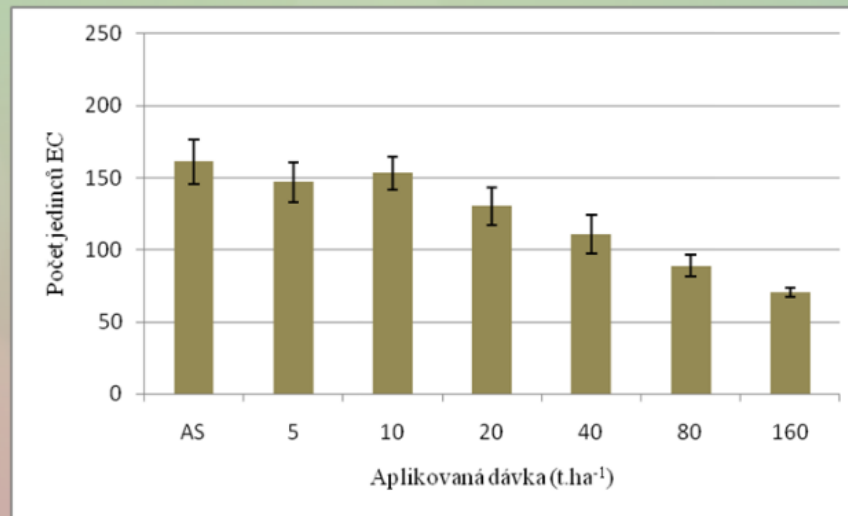
- roupice



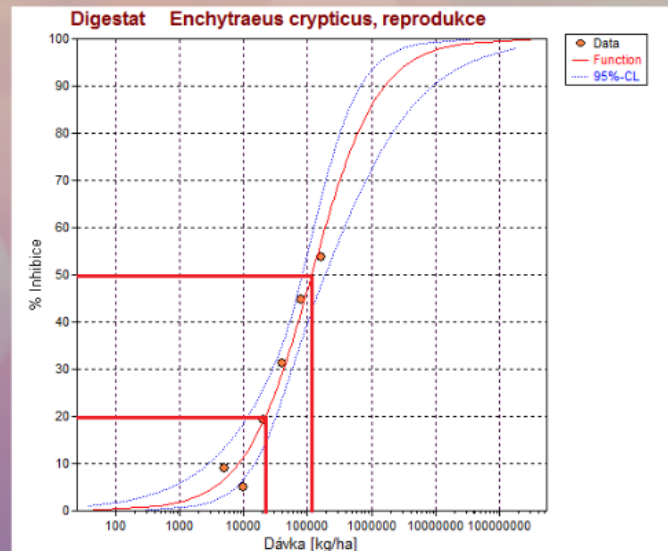
- dravý roztoč



Vyhodnocení dat



EC₂₀
EC₅₀
NOEC
LOEC



Hnojiva

digestáty

kejdy



komposty

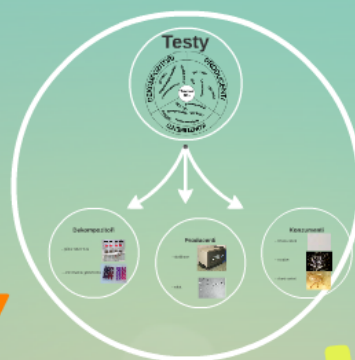


recyklovaný odpad

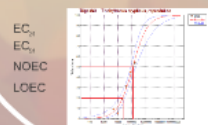


Waña
OMB

- ústny a jehož realizaci
- vyhodnocení výsledků
- testovací materiály (hrajou)
- konkrétní příklady



Salinity (‰)	Growth (log CFU)
0	~1.4
5	~1.35*
10	~1.4*
15	~1.3*
20	~1.2
25	~1.1
30	~1.0



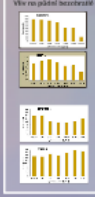
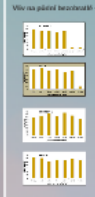
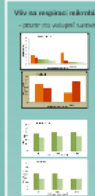
digestáty
kejdý



komposty



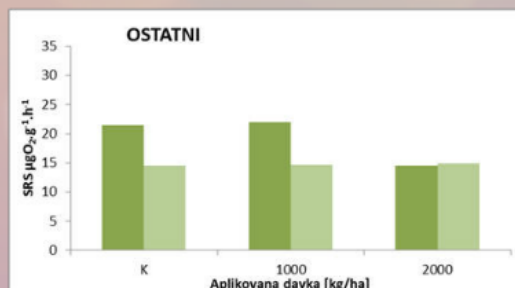
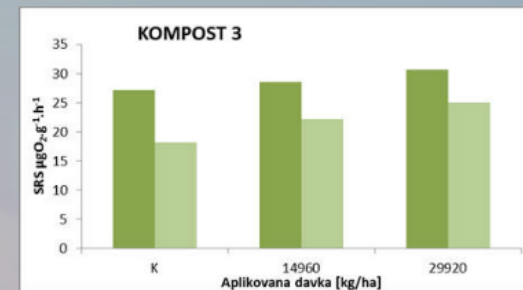
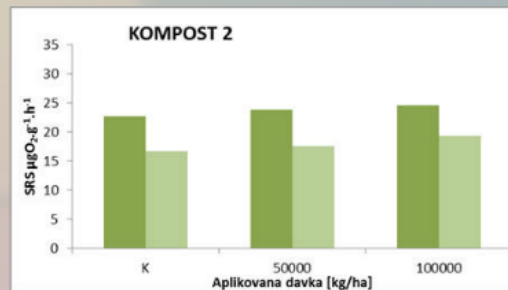
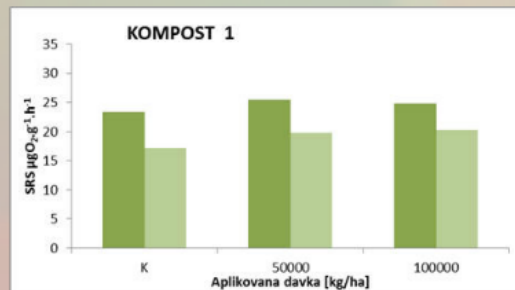
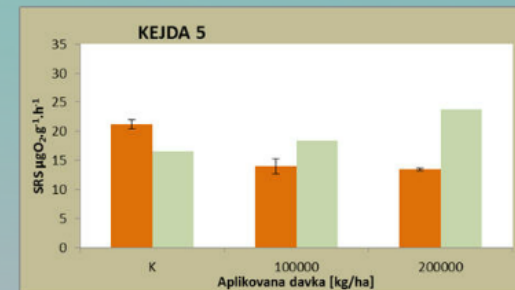
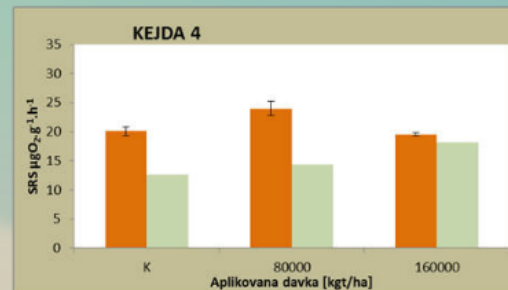
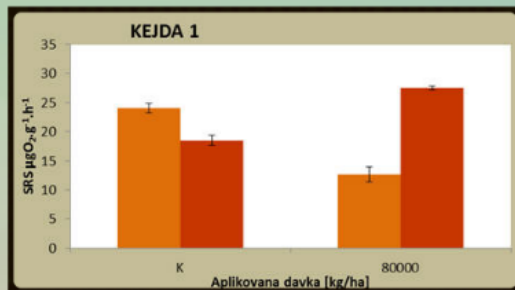
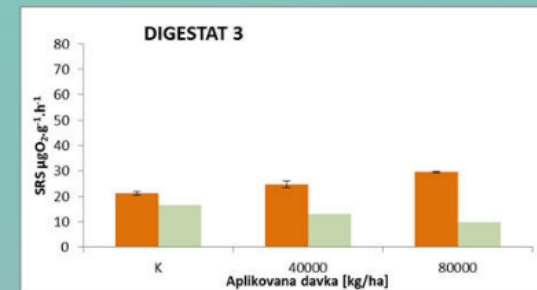
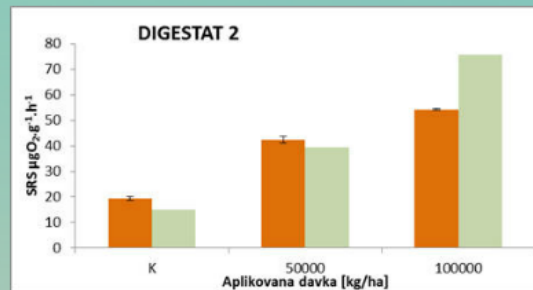
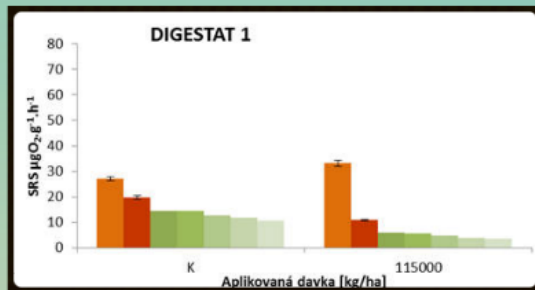
recyklovaný odpad





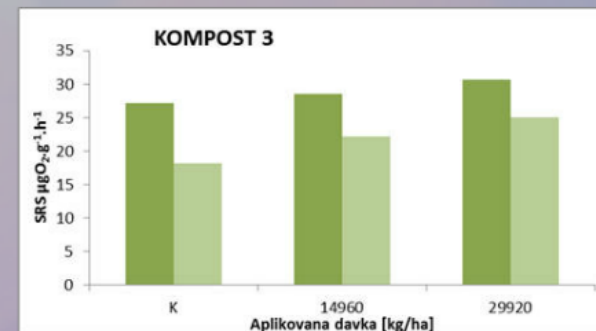
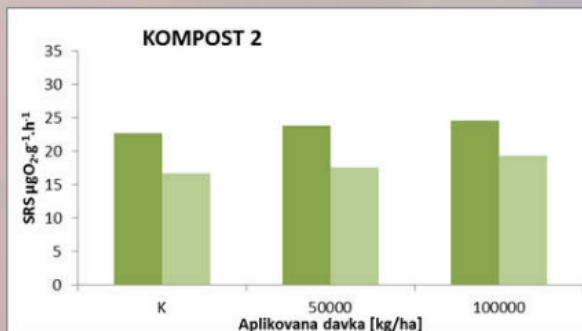
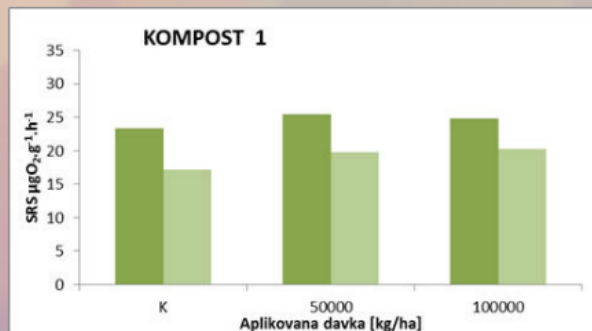
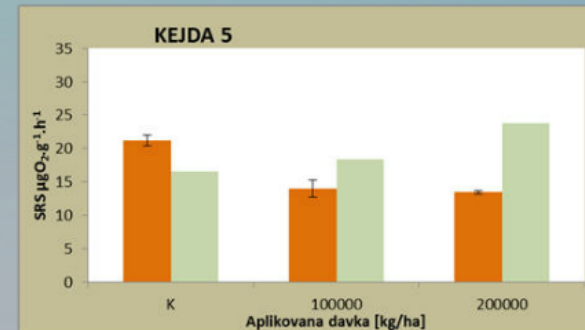
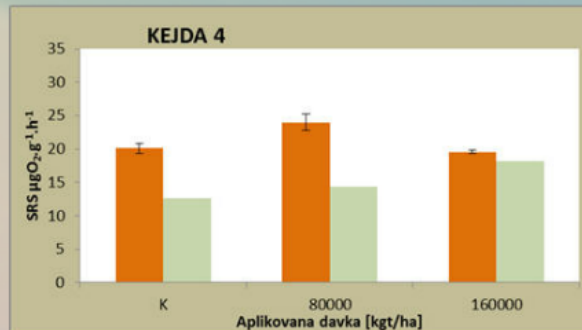
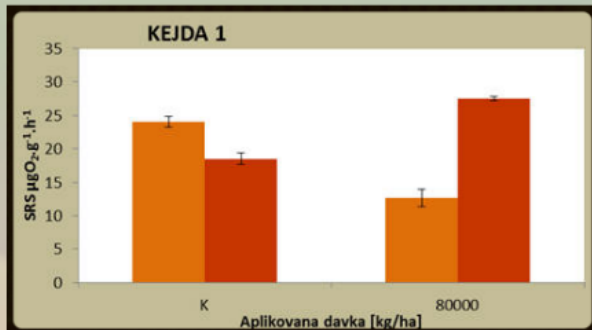
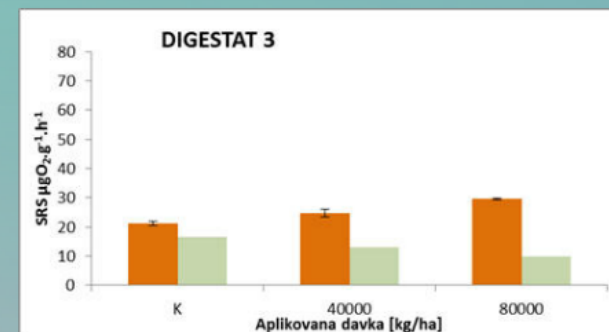
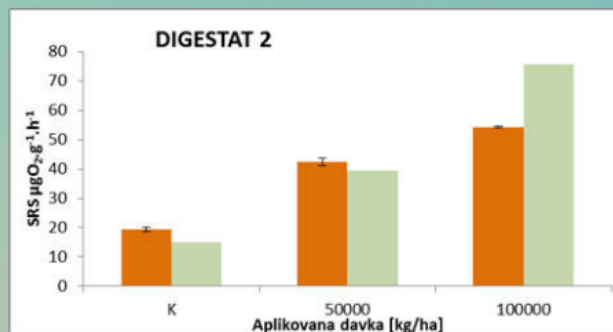
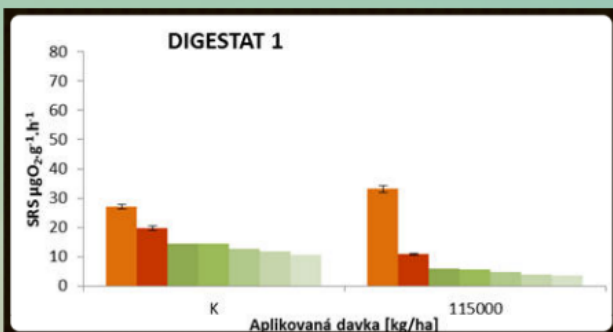
Vliv na respiraci mikrobiálního společenstva

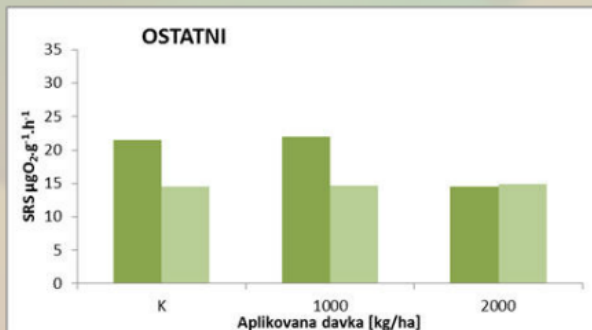
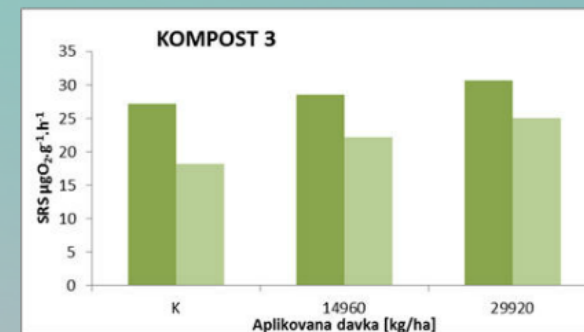
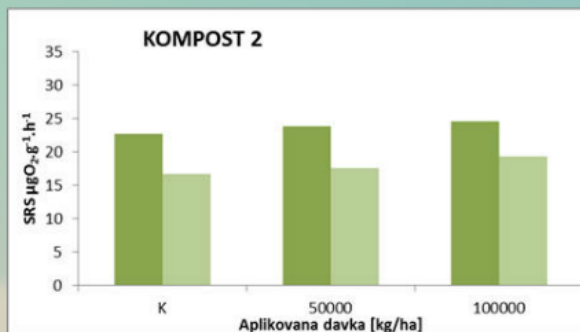
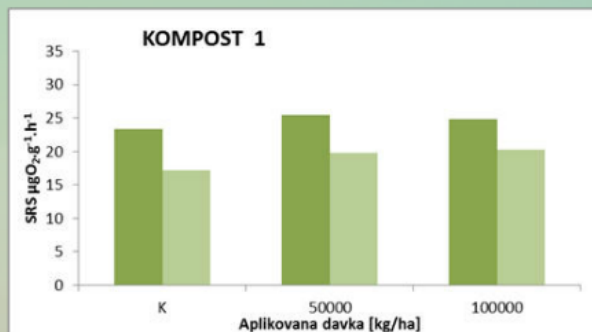
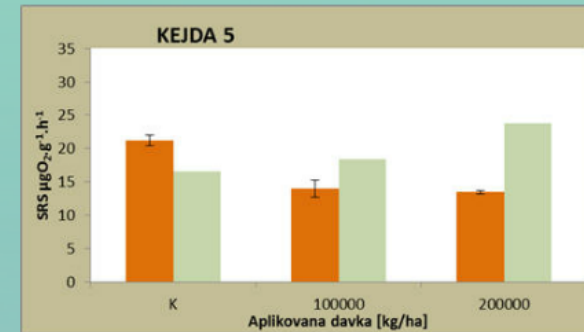
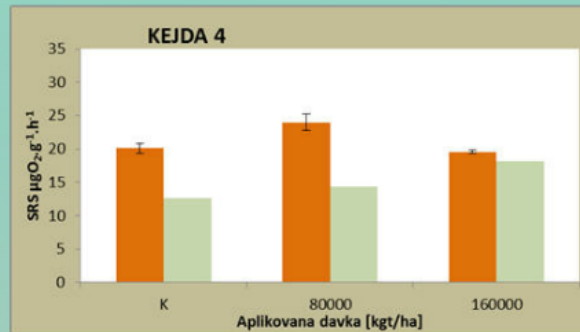
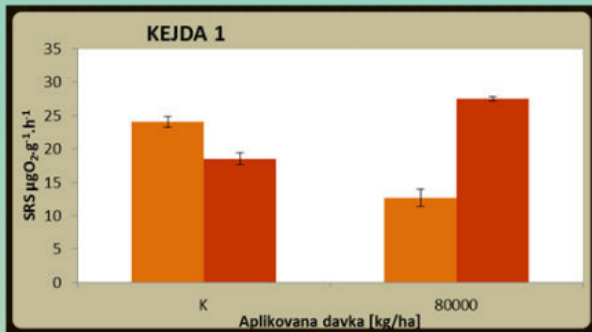
- pozor na vstupní suroviny pro výrobu hnojiva



Vliv na respiraci mikrobiálního společenstva

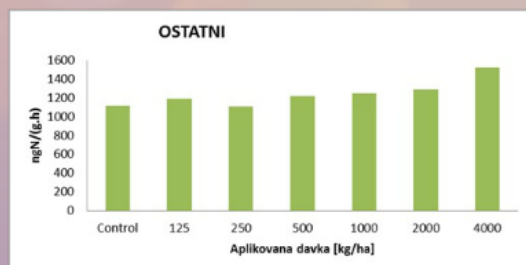
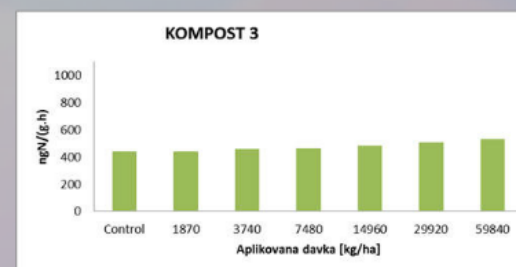
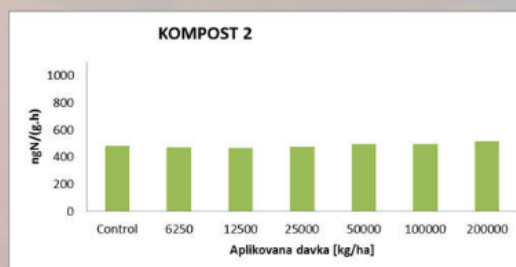
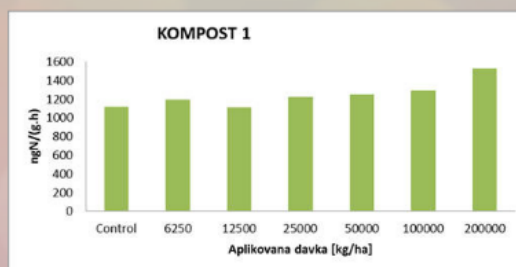
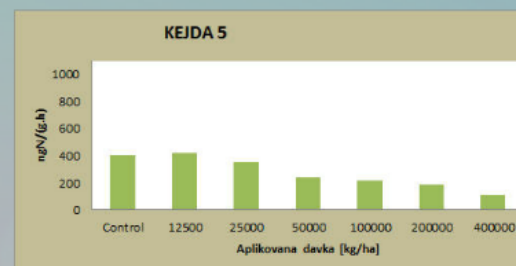
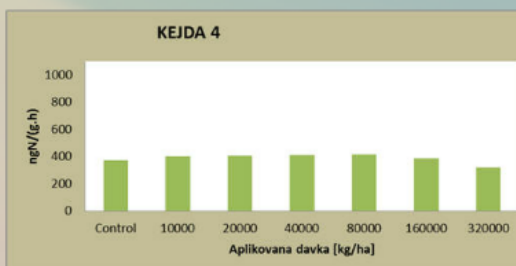
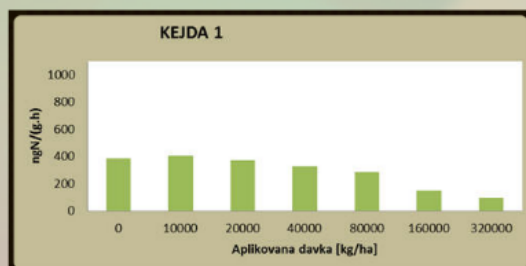
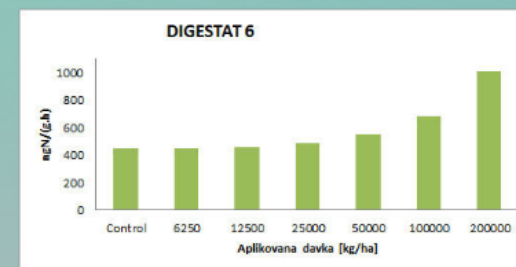
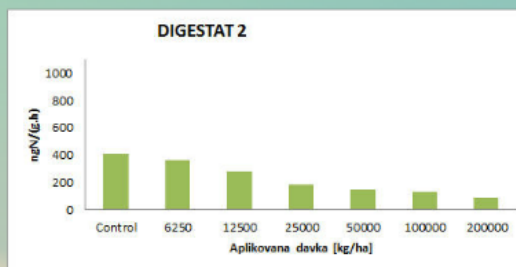
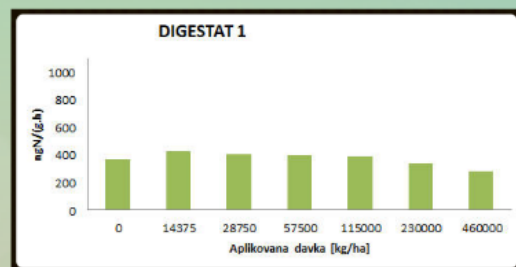
- pozor na vstupní suroviny pro výrobu hnojiva





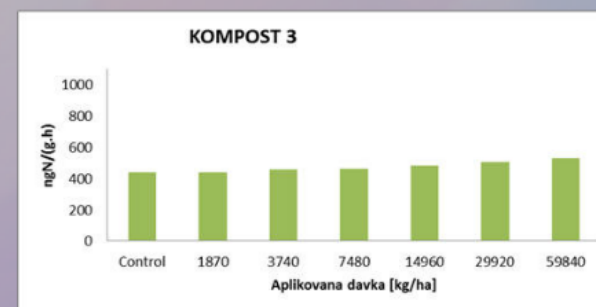
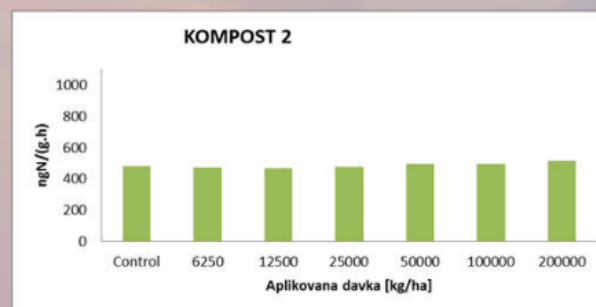
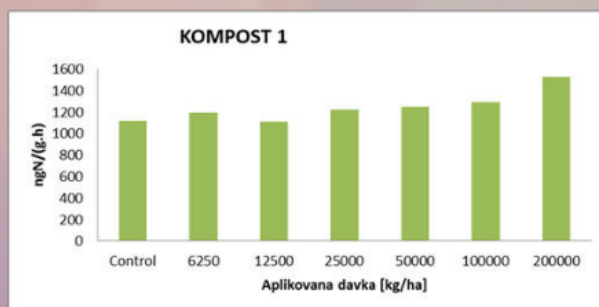
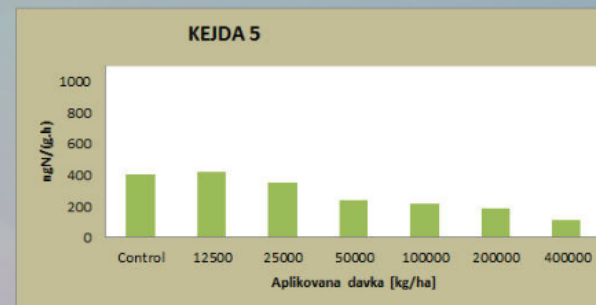
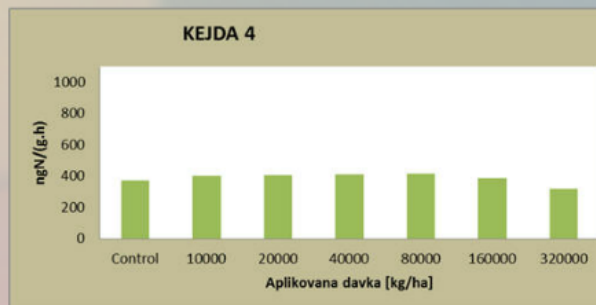
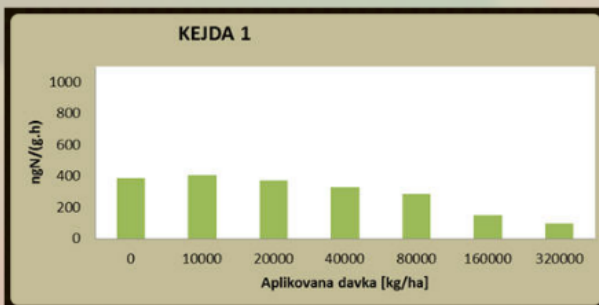
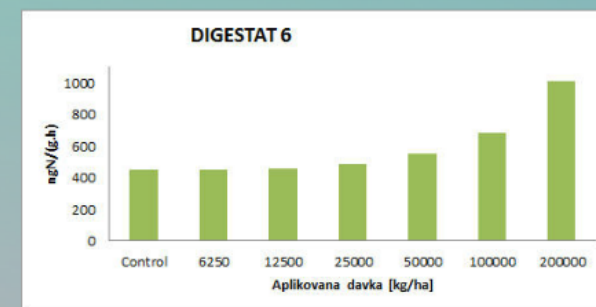
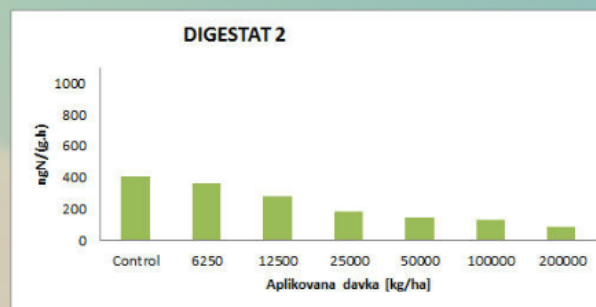
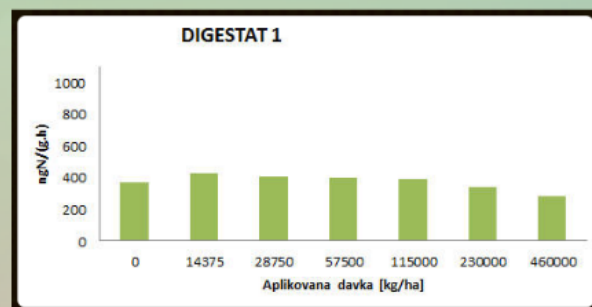
Vliv na nitrifikaci v půdě

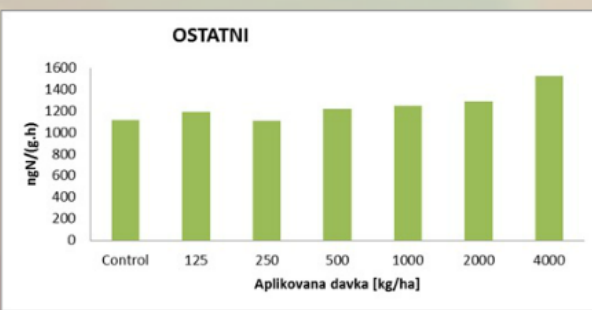
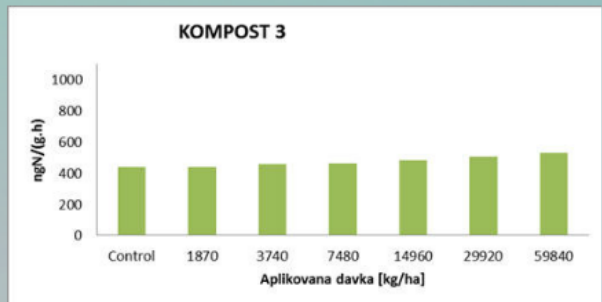
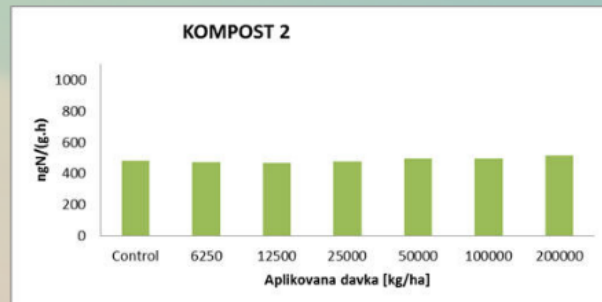
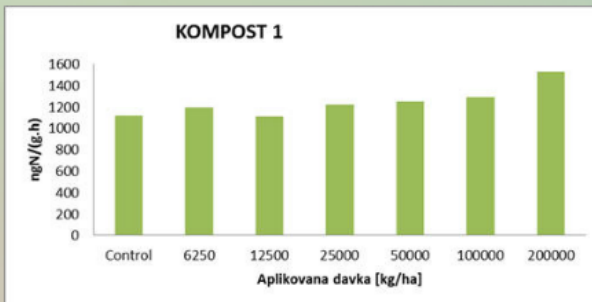
- možnost přítomnosti nitrifikátorů v samotném přípravku



Vliv na nitrifikaci v půdě

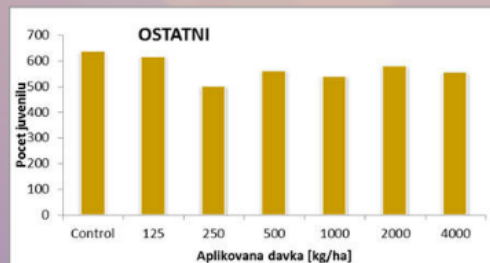
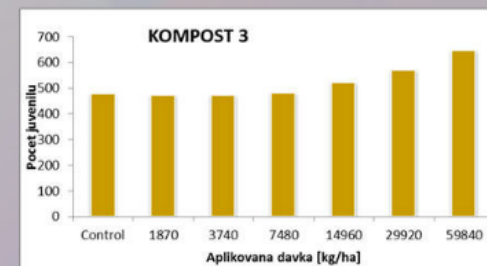
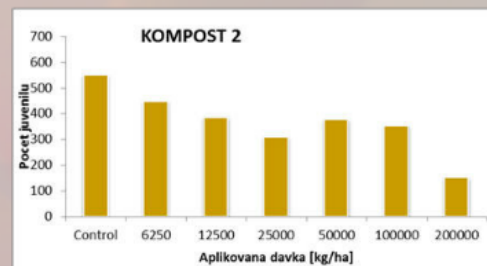
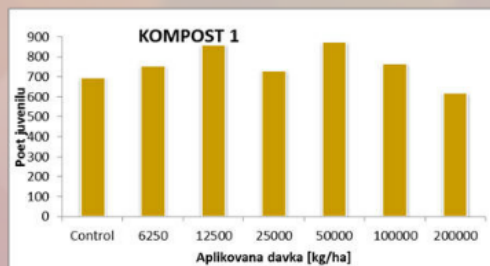
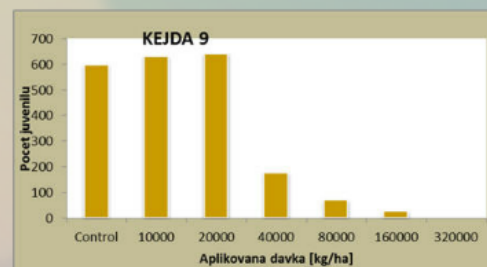
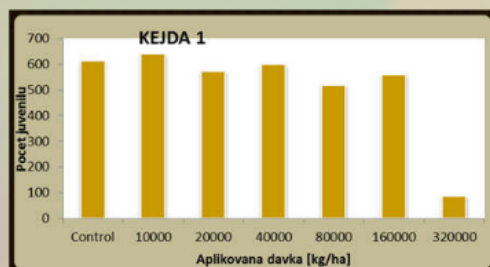
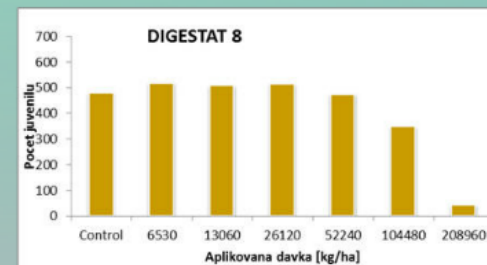
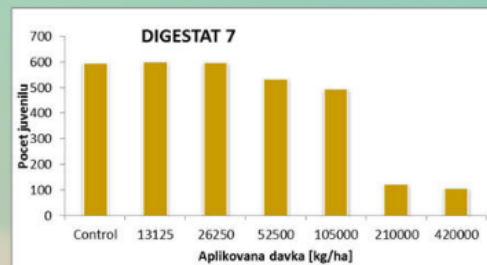
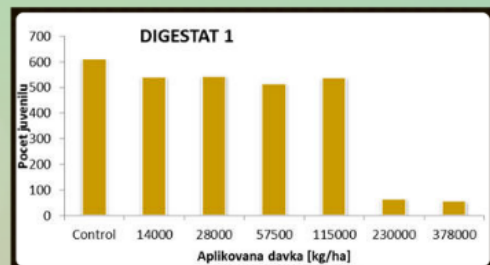
- možnost přítomnosti nitrifikátorů v samotném přípravku



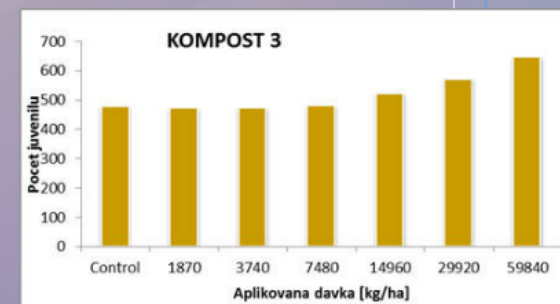
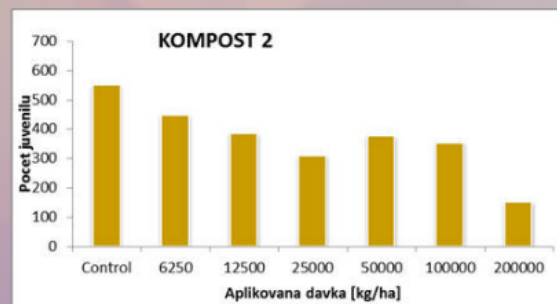
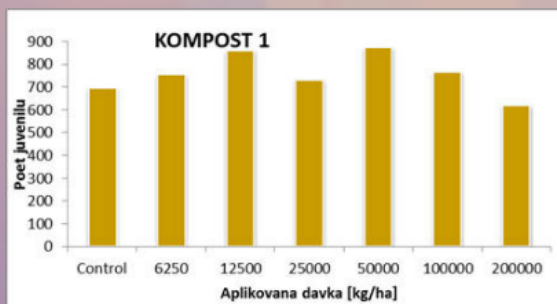
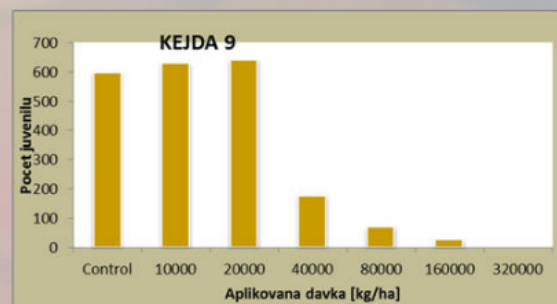
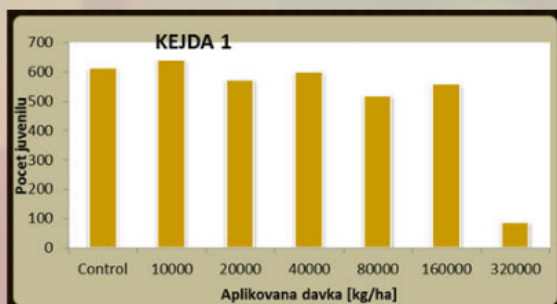
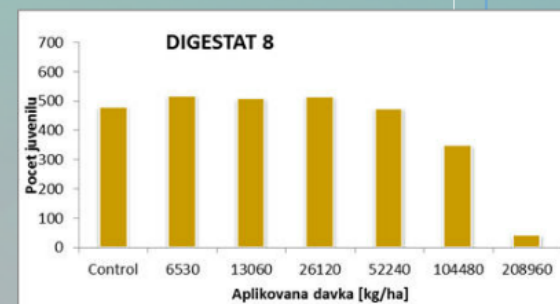
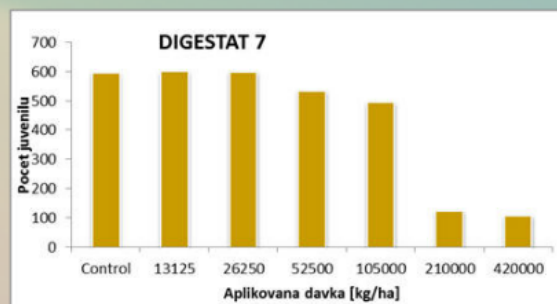
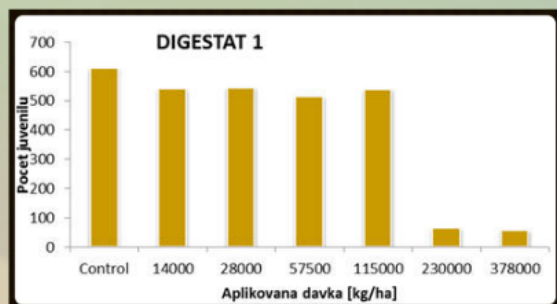


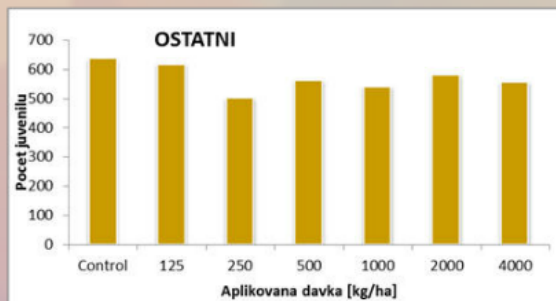
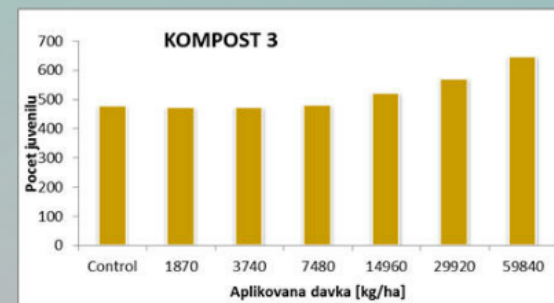
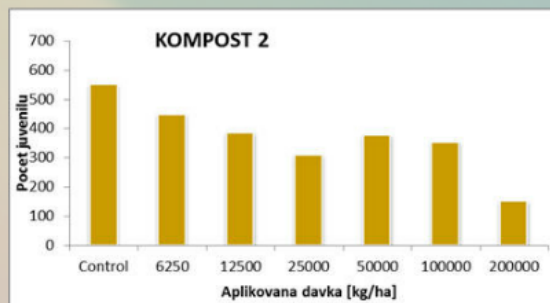
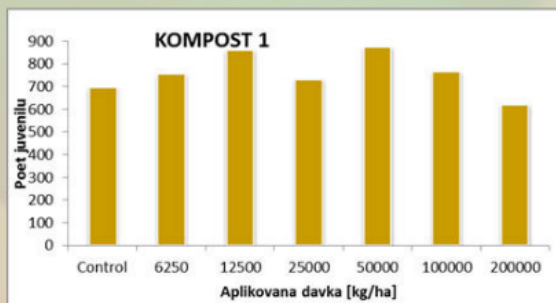
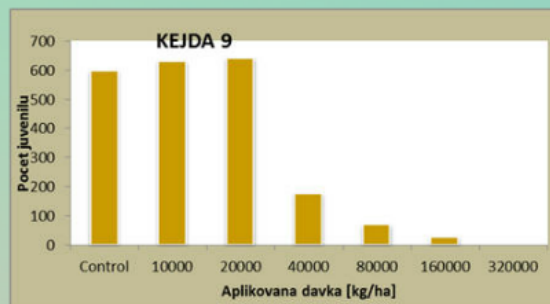
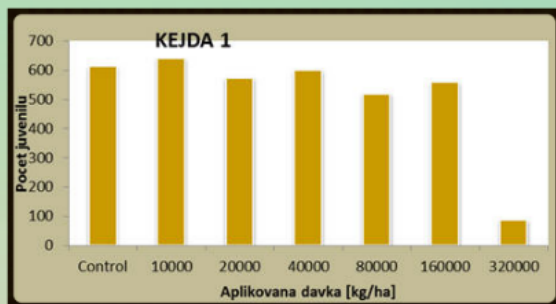
liv na půdní bezobratlé - chvostoskoci

Vliv na půdní bezobratlé - chvostoskoci

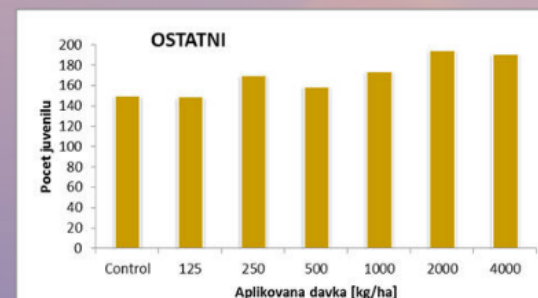
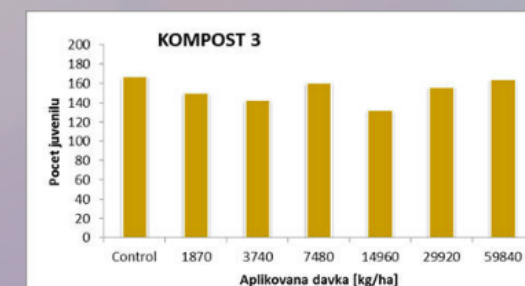
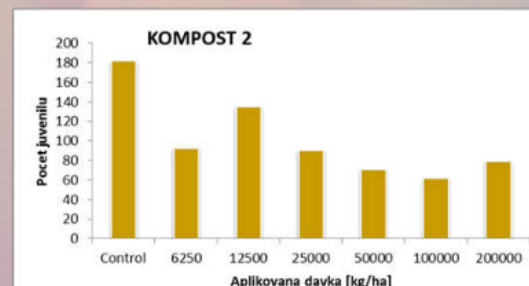
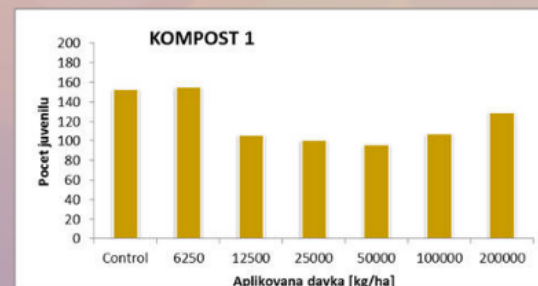
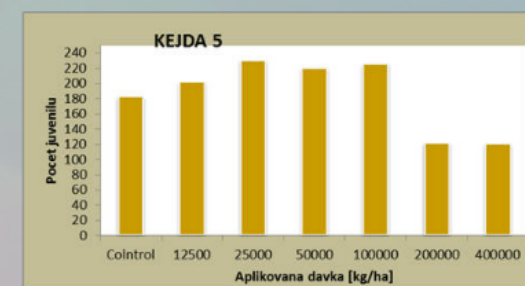
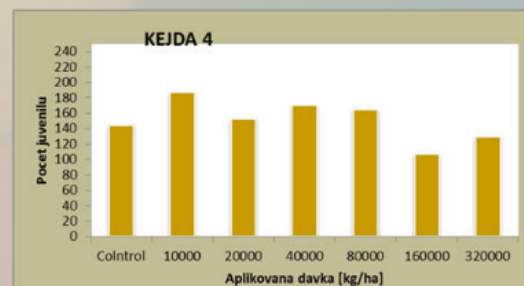
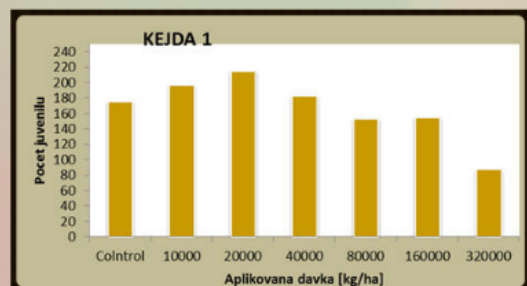
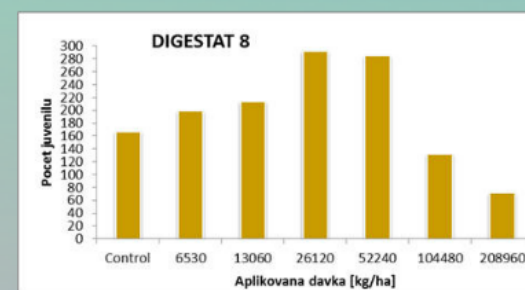
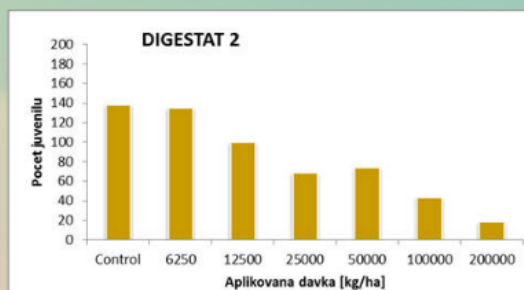
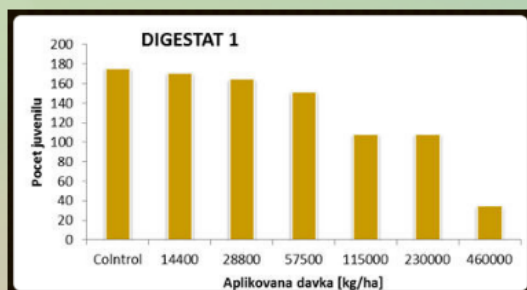


iv na půdní bezobratlé - chvostoskoci

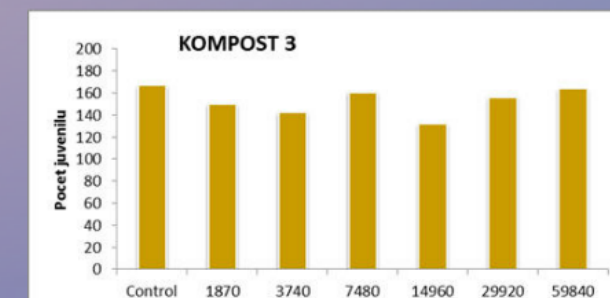
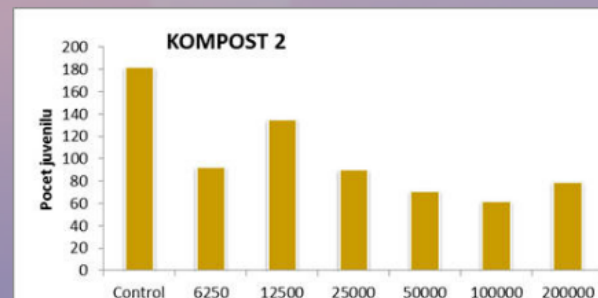
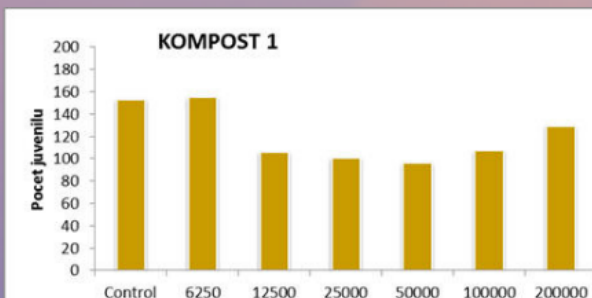
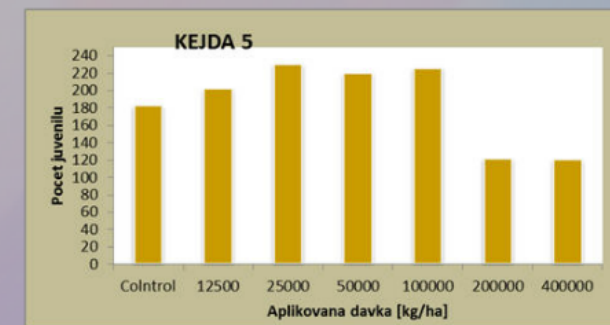
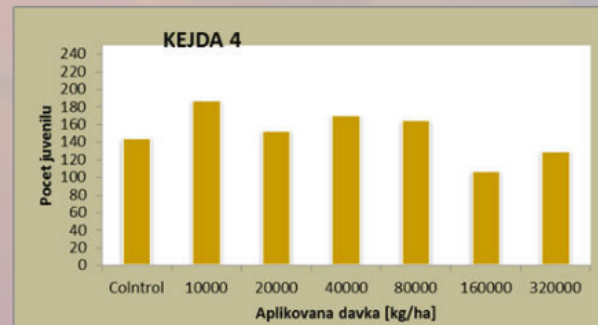
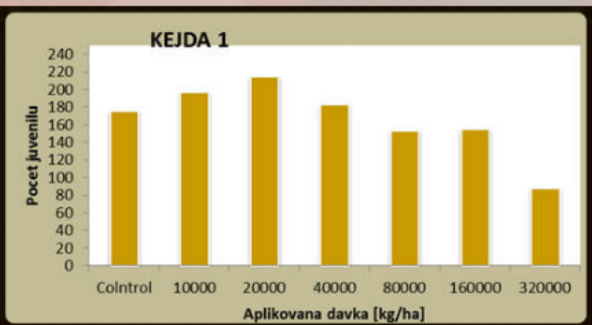
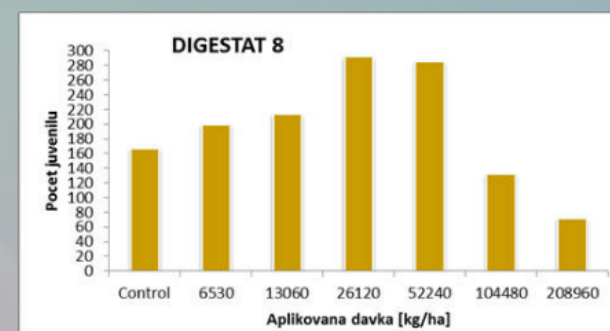
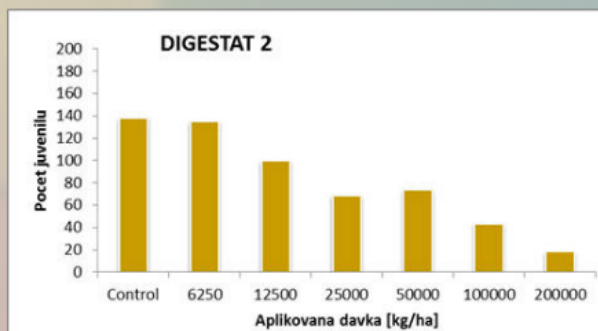
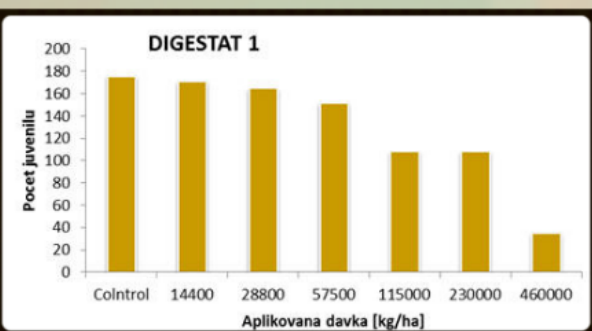


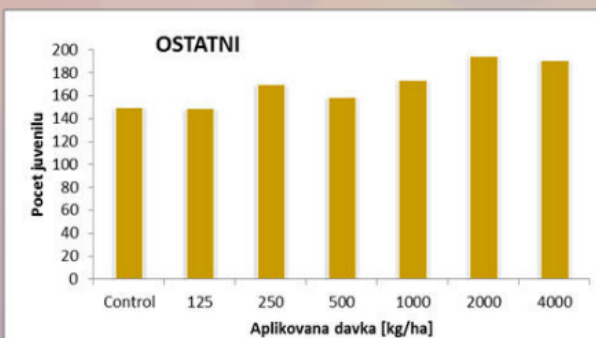
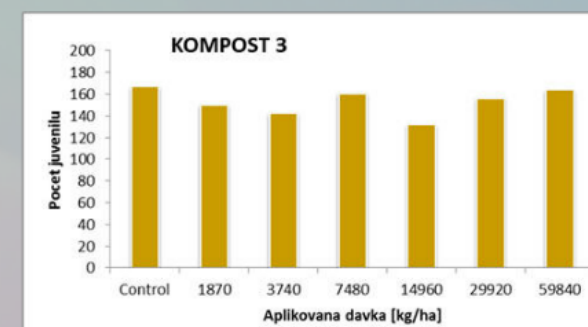
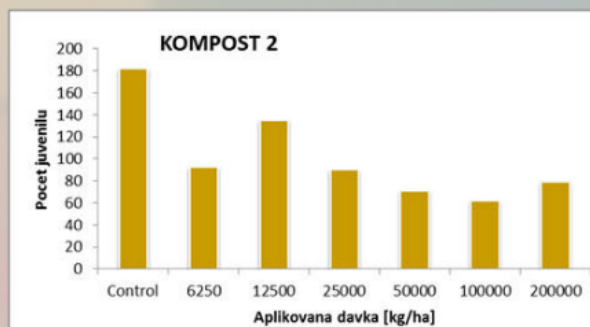
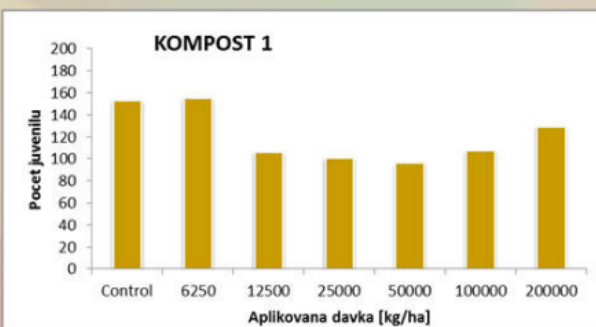
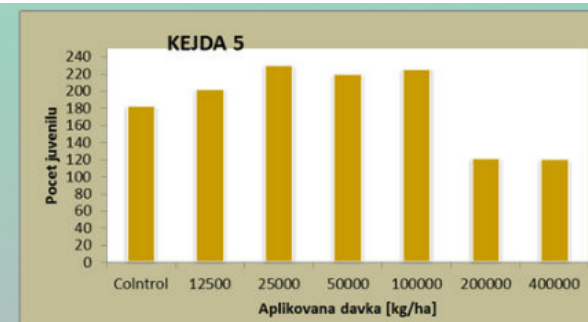
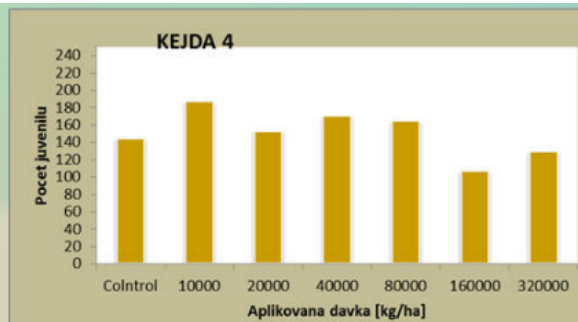
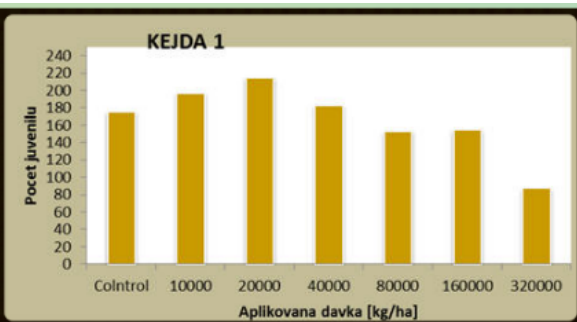


Vliv na půdní bezobratlé - roupice



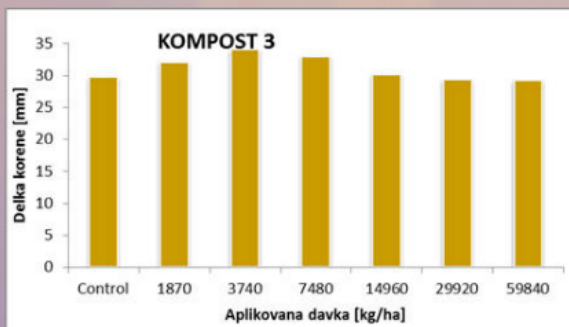
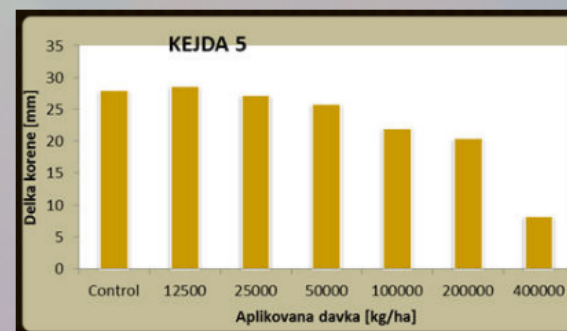
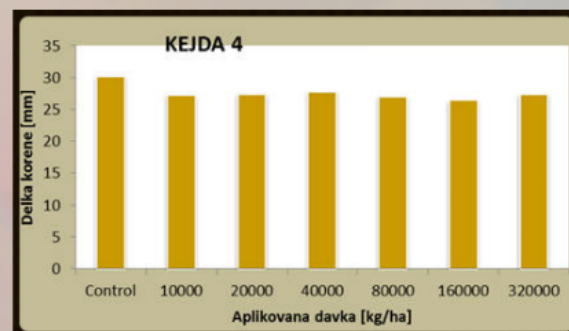
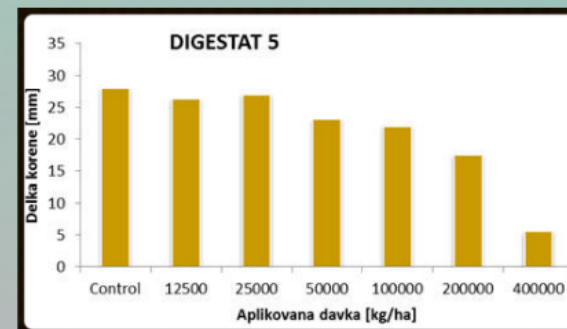
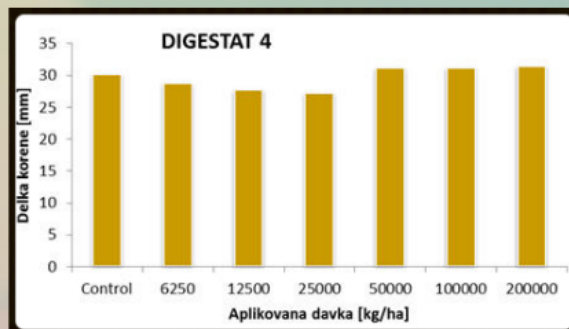
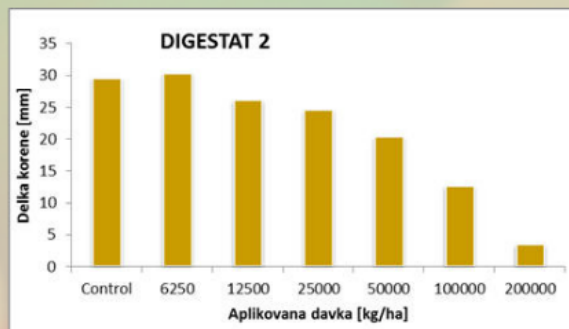
Vliv na půdní bezobratlé - rouspice



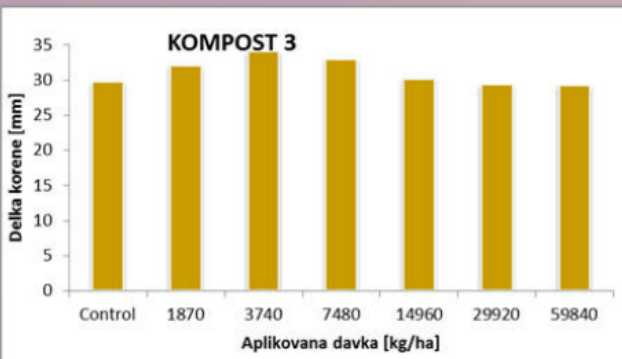
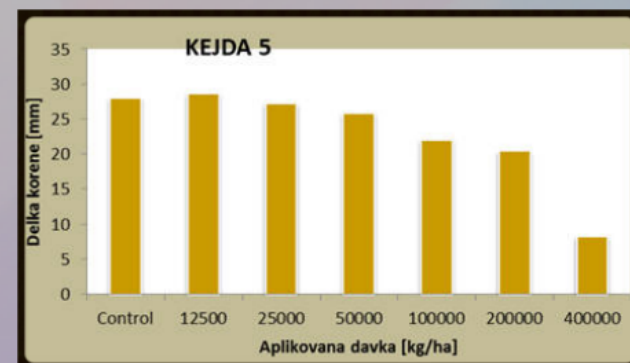
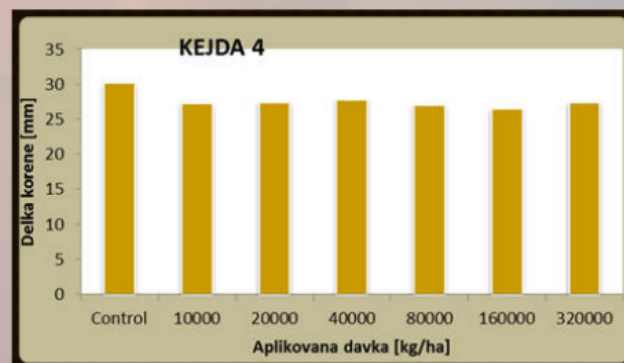
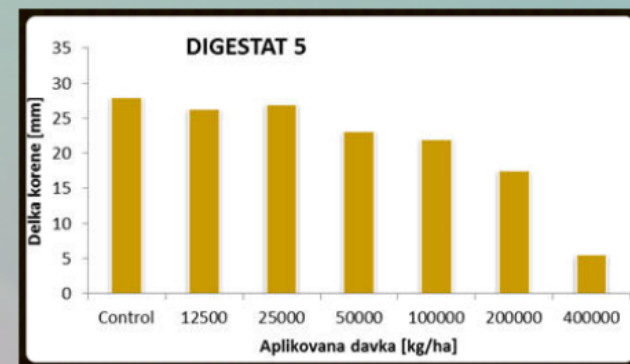
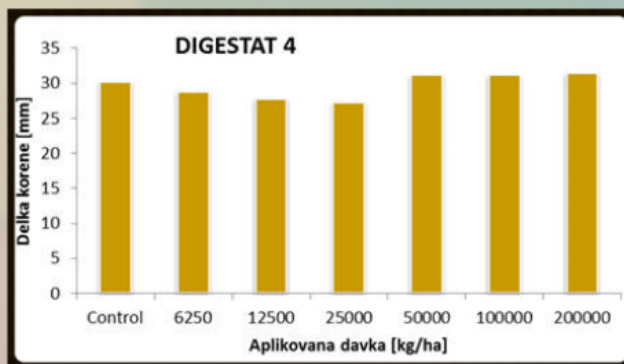
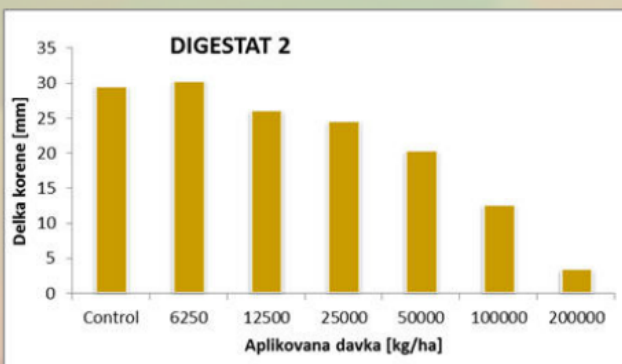


Vliv na rostliny - délka kořene salátu

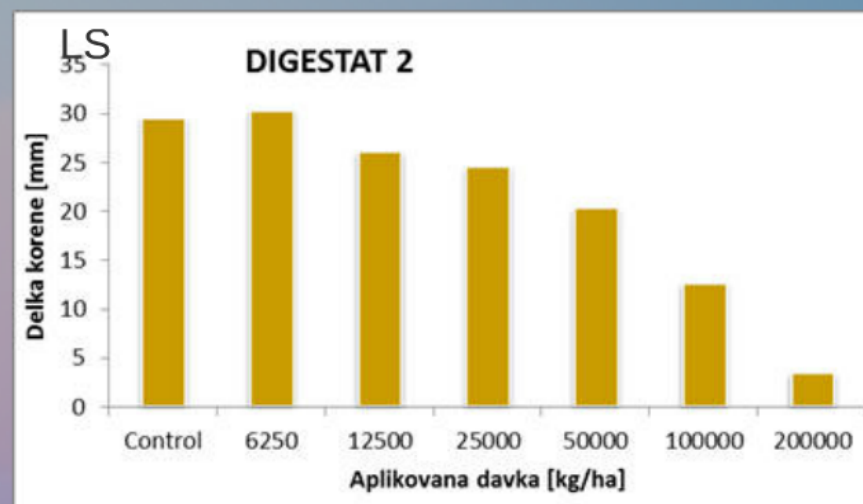
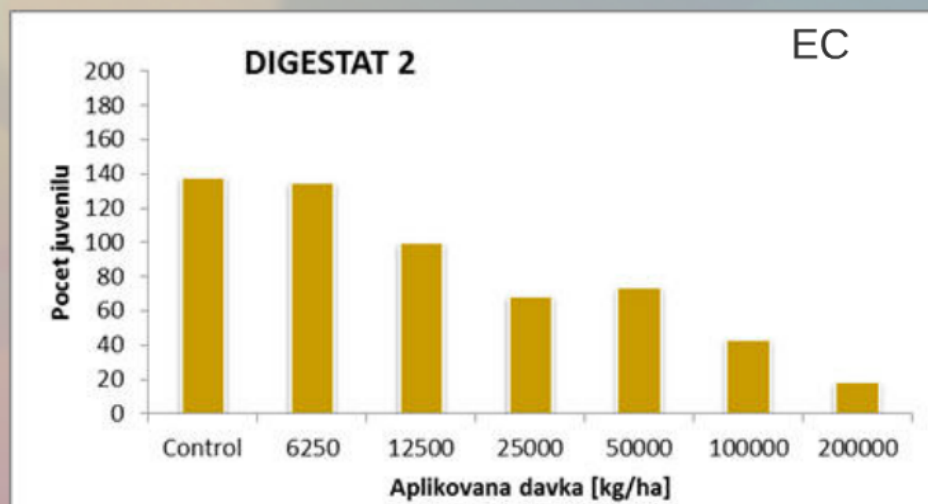
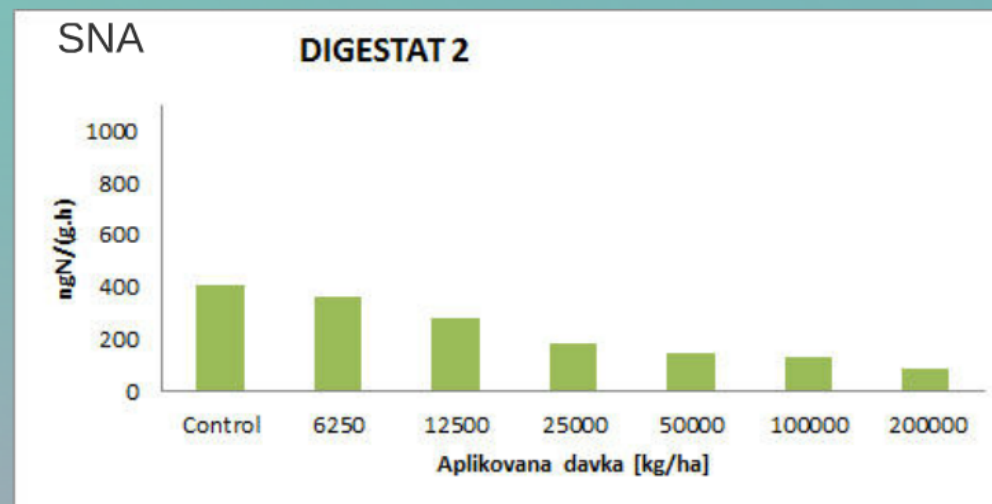
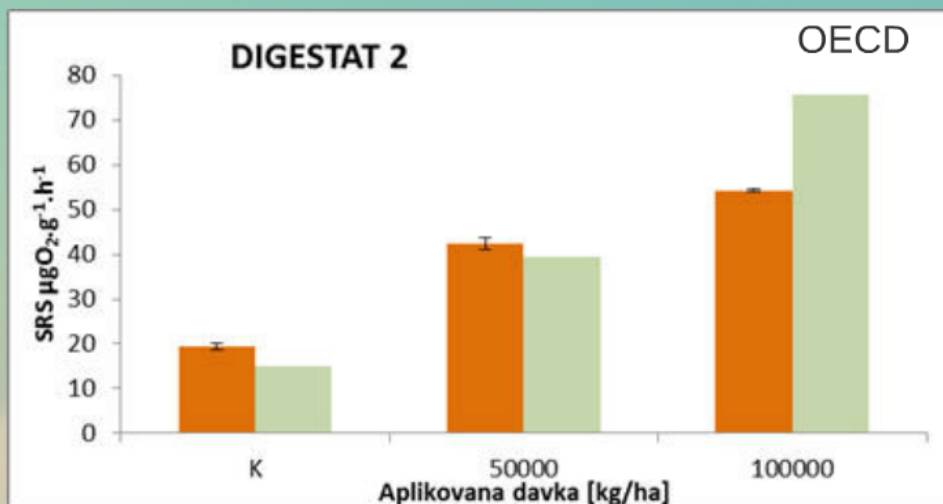
Vliv na rostliny - délka kořene salátu



Vliv na rostliny - délka kořene salátu



DIGESTÁT 2



Závěry

nelze zobecňovat závěry pro danou skupinu (digestáty, kejdy, komposty ...)

důležité složení vstupních surovin u digestátů a kompostů