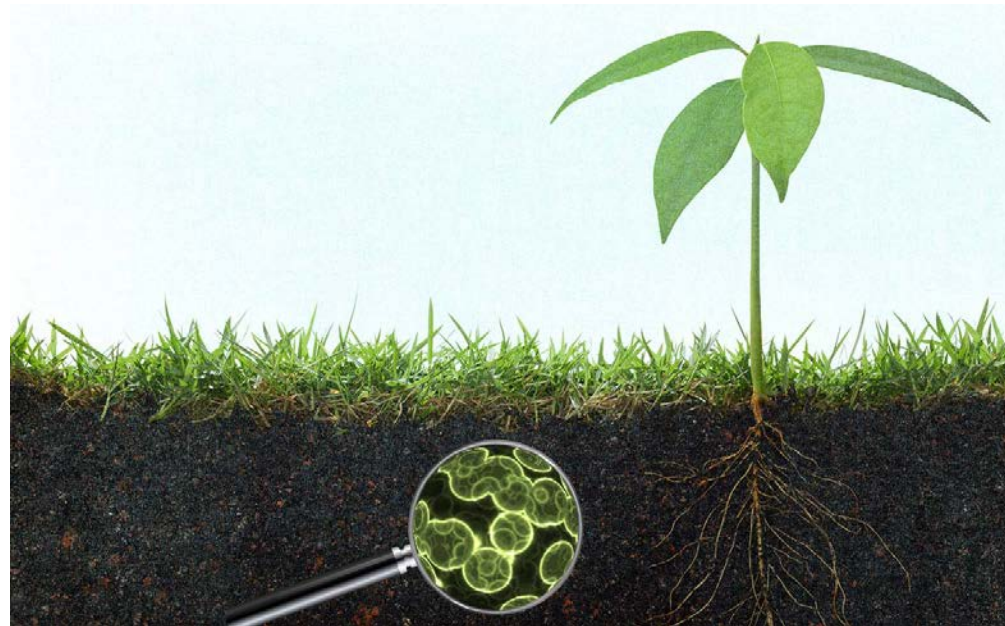


# INFLUENCE OF AGRICULTURAL SERVICE CROPS ON THE FLUCTUATIONS OF THE SOIL MINERAL COMPOSITION

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We are not growing plants,  
soil is growing plants!



# SoilVeg

Improving soil conservation and resource use in organic cropping systems for vegetable production through introduction and management of Agro-ecological Service Crops (ASC)



Agroresursu un  
ekonomikas  
institūts



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CORE Organic Plus and Latvia Ministry of Agriculture

# Agricultural service crops (ASC):

- are not yielding a cash crop (in our case - vegetable crops)
- have indirect influence on the yield by improving the soil properties and increasing availability of nutrients for following crops in a sustainable way
- is the way of no-tillage approach



# The task of ASC

prevent leaching of mineral nutrients from the soil during the winter-early spring period, when precipitation exceed evaporation and low temperature slows down vegetation



# Roller crimper

Terminates ASC growth by minimal energy consumption and ensures mulching effect for cash crop



# Materials and methods

Institute of Agricultural Resources and Economics, Latvia

2015/2016

The aim - to clarify the influence of ASC on cabbage and onion crops and compare with traditional soil management systems.







# Results

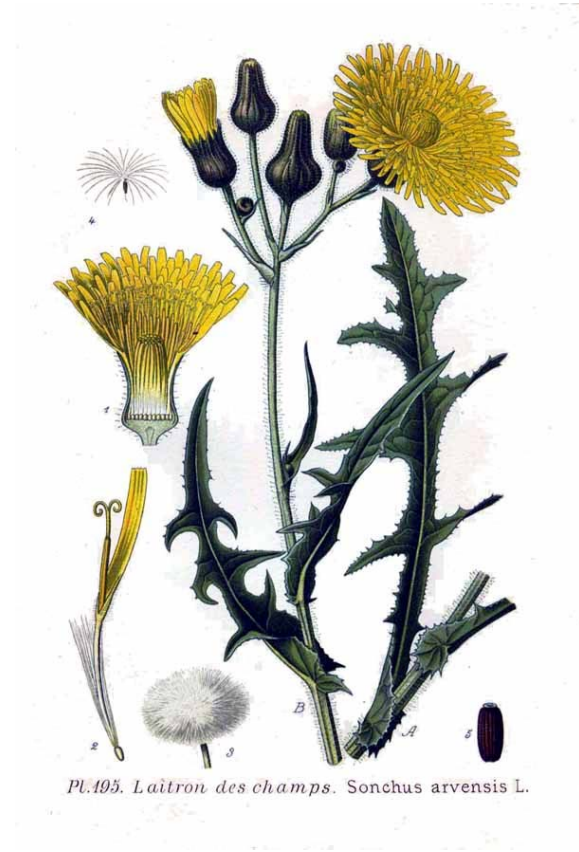
The DM biomass of incorporated plants was quite high, 2.64 t ha<sup>-1</sup> for rape and 7.01 t ha<sup>-1</sup> for rye

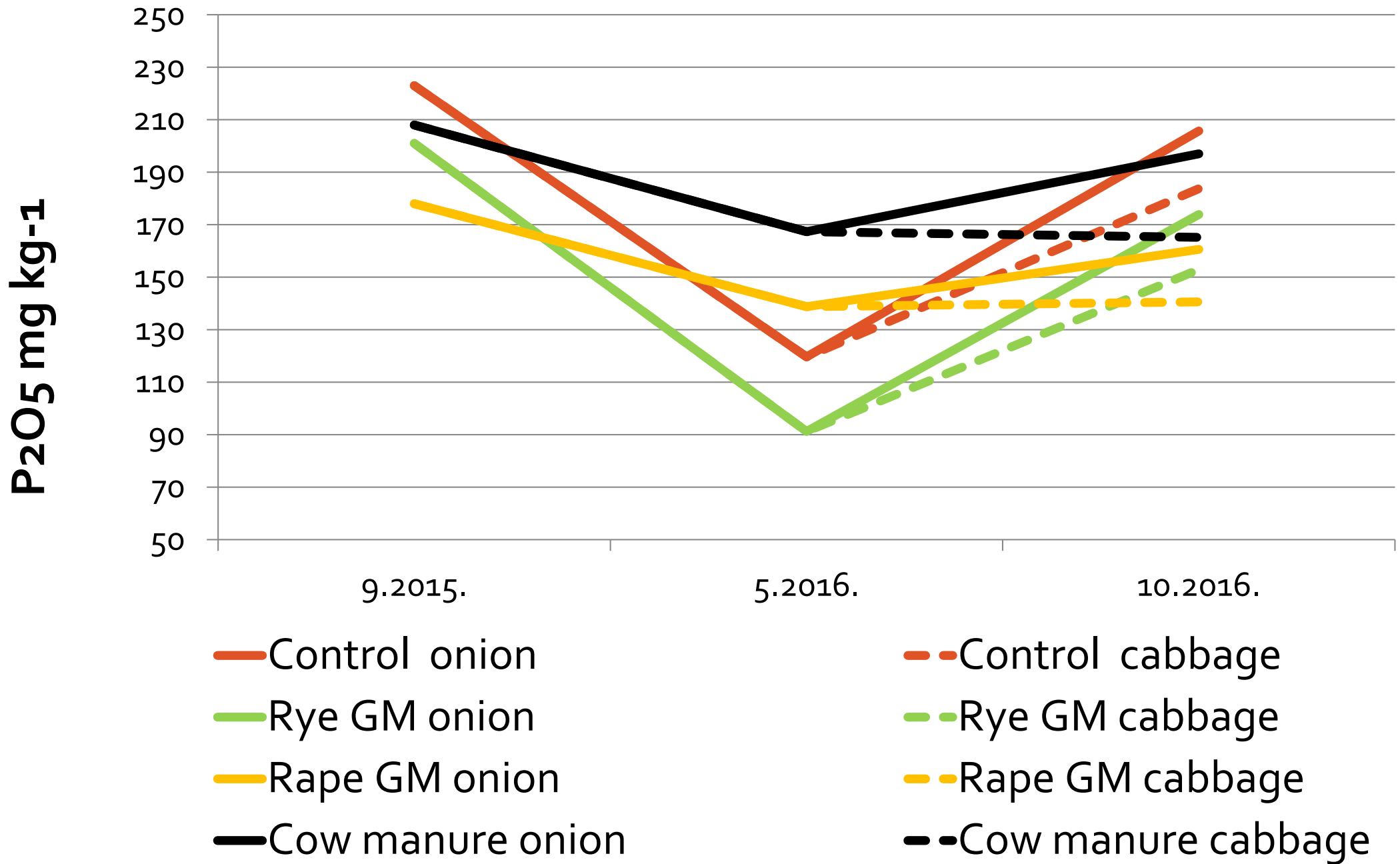
The recommended biomass of live mulch plants in RC technology is 5 t ha<sup>-1</sup>

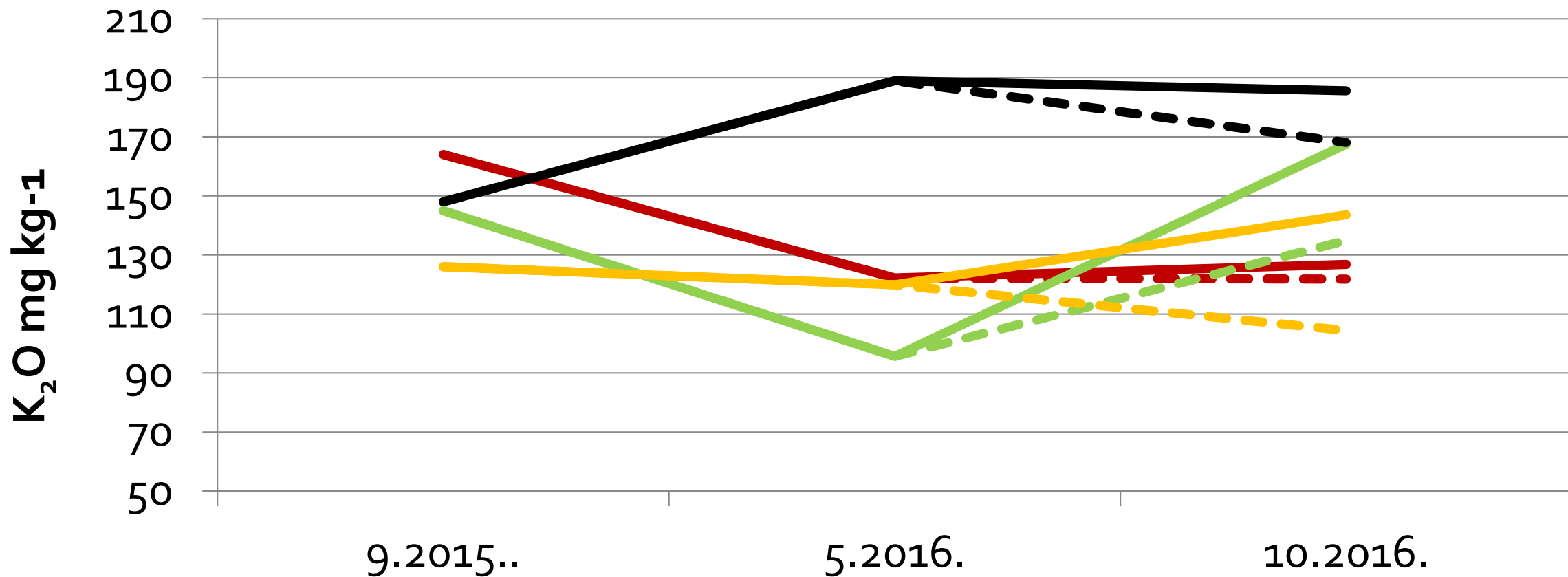


# Perennial weed infestation

*Equisetum arvense* L. and *Sonchus arvensis* L.



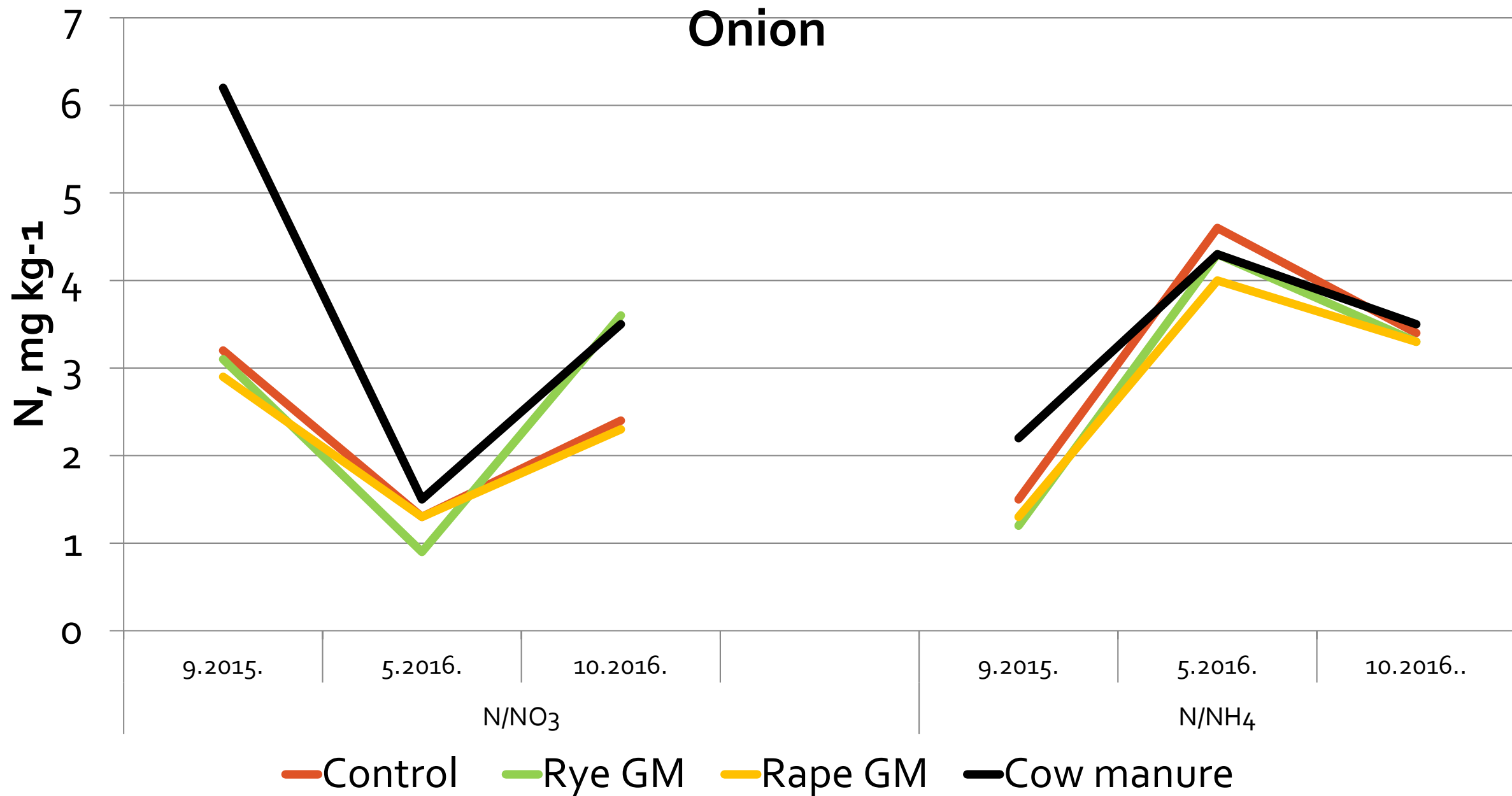




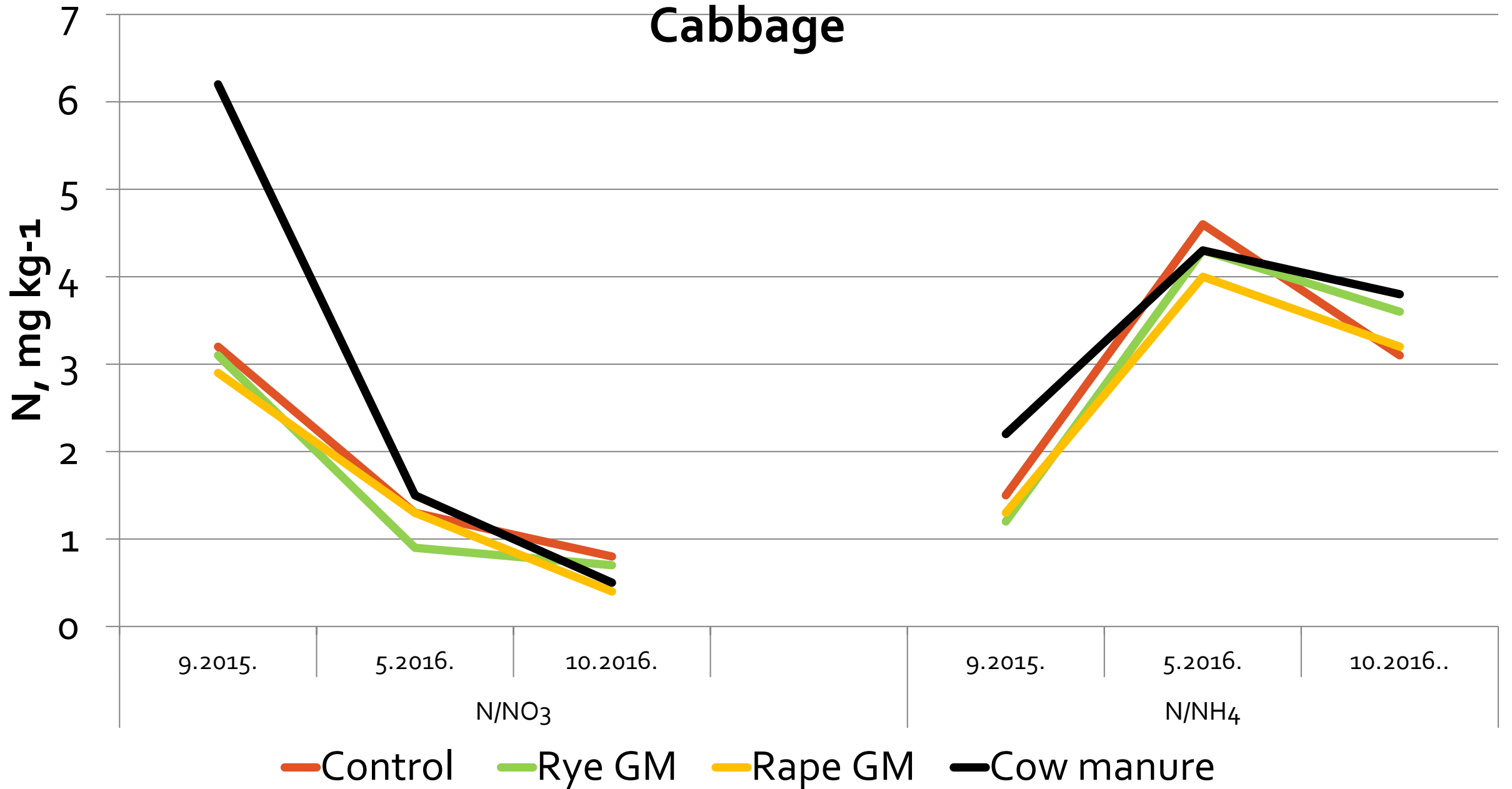
- Control onion
- Rye GM onion
- Rape GM onion
- Cow manure onion

- - Control cabbage
- - Rye GM cabbage
- - Rape GM cabbage
- - Cow manure cabbage

# Onion



# Cabbage



# Conclusions

- There was no sharp difference in agrochemical parameters between treatments.
- The differences between vegetables were more clear – cabbage reduced nitrate content in the soil, whereas onion did not.
- ASC crops have some positive influence on the maintenance of mineral nutrients balances in vegetable cropping systems, but more investigations are needed to find particular regularities

**THANK YOU FOR YOUR  
ATTENTION!**