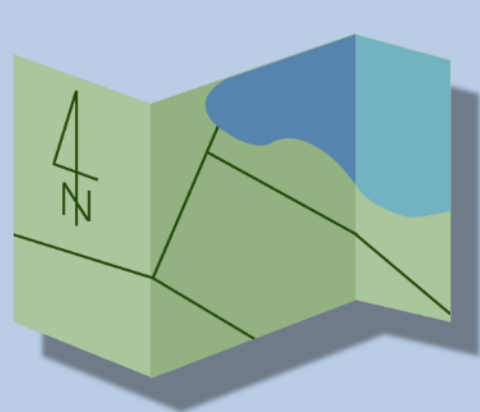




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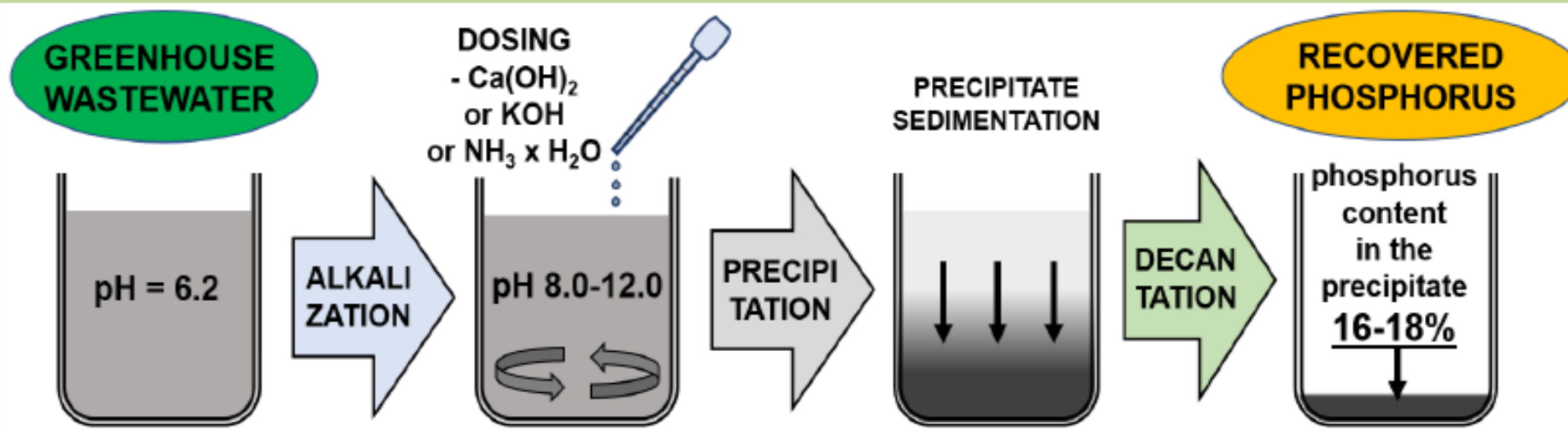
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RECOVERY OF PHOSPHORUS AND OTHER MINERALS FROM GREENHOUSE WASTEWATER FROM SOILLESS TOMATOCULTIVATION BY PRECIPITATION

SCHEME OF PHOSPHORUS RECOVERY FROM GREENHOUSE WASTEWATER



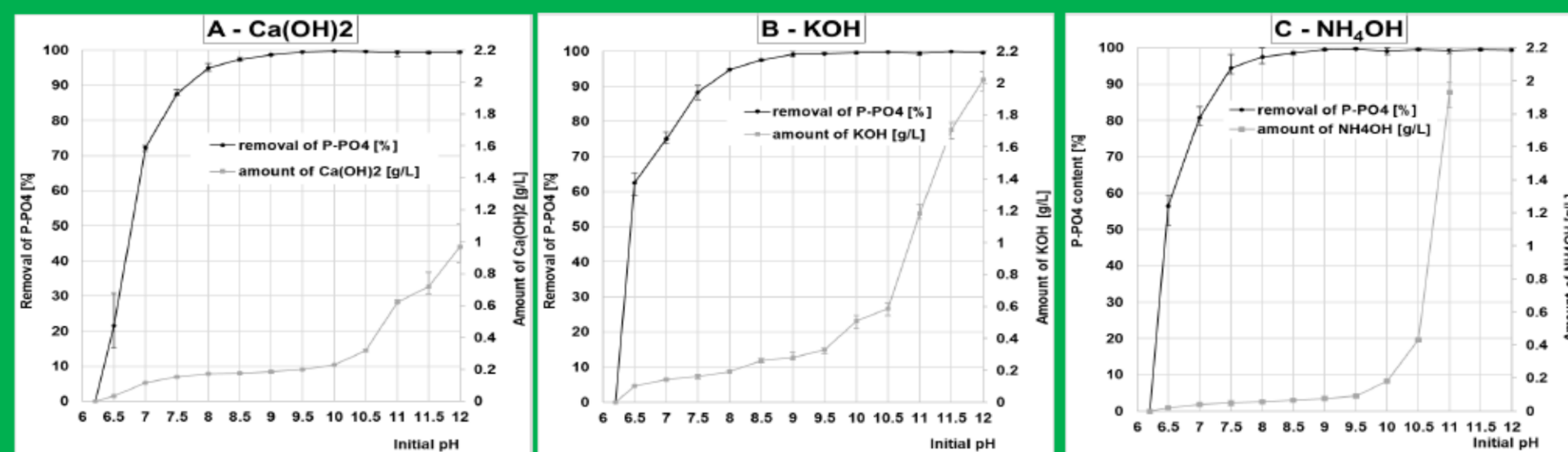
SCOPE OF RESEARCH

Effect of greenhouse wastewater alkalization:

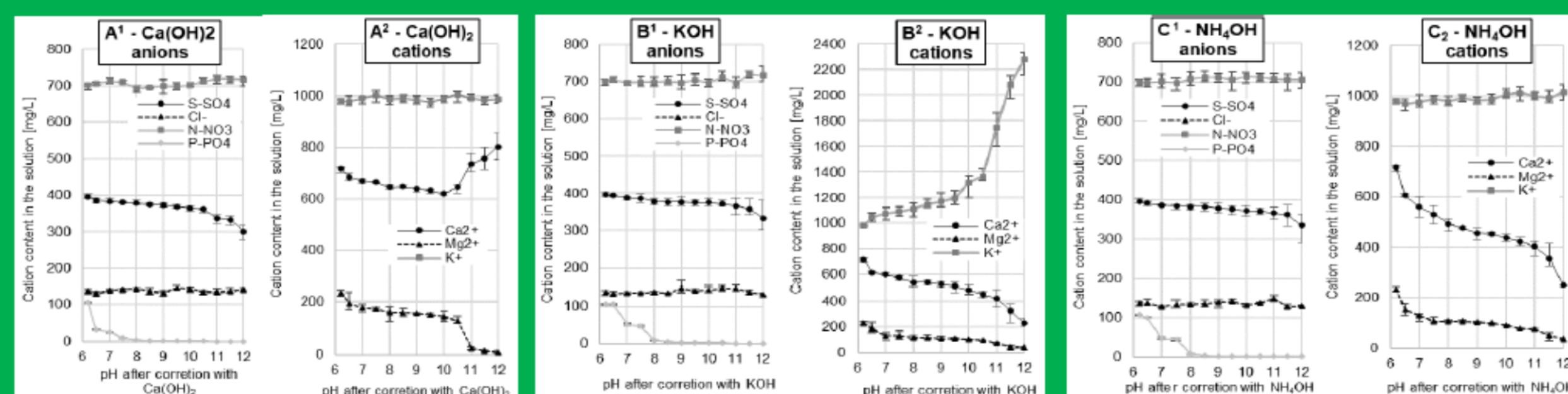
- on wastewater composition
- on the sludge parameters :
 - composition
 - volume
 - sedimentation capacity

RESULTS

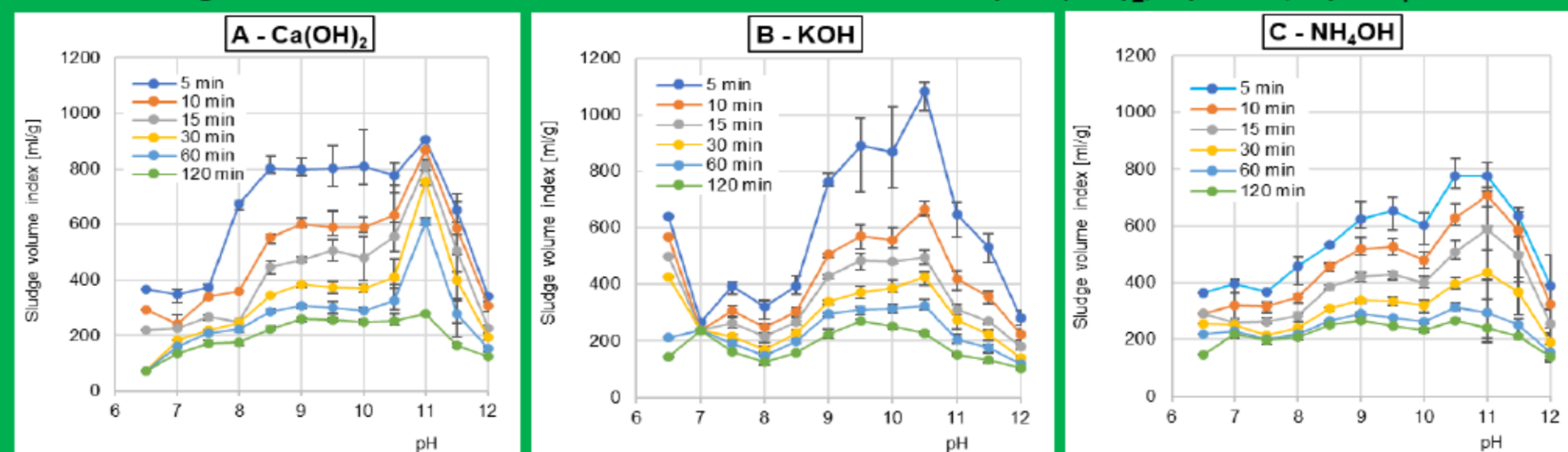
Effect of pH on the efficiency of phosphorus removal from wastewater and a correlation between alkalinizing agent dose and wastewater pH: A) $\text{Ca}(\text{OH})_2$, B) KOH , and C) NH_4OH



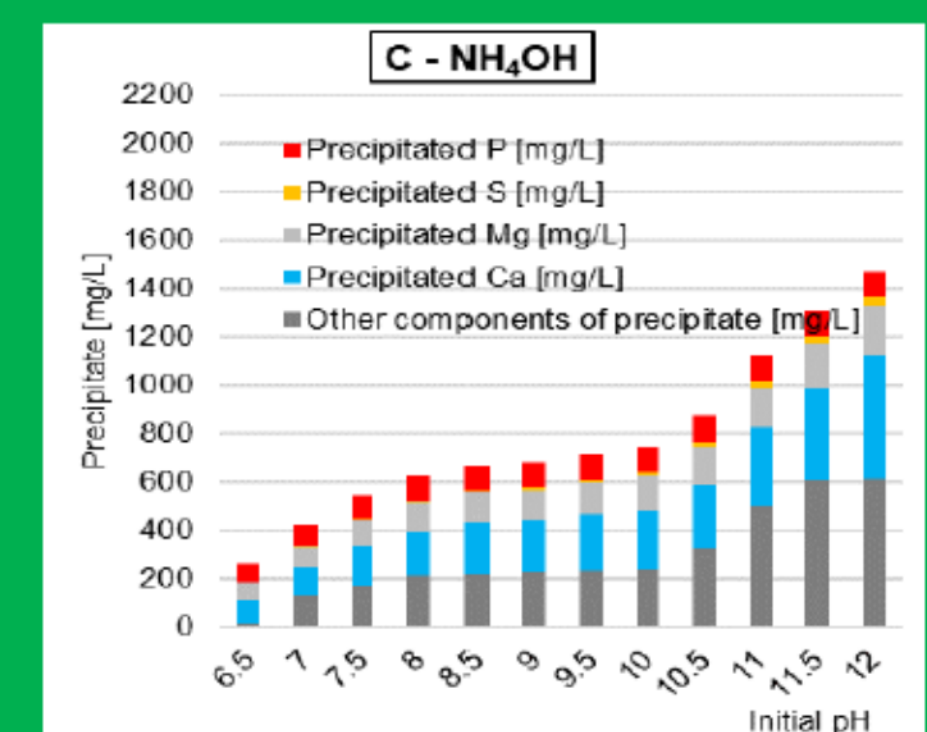
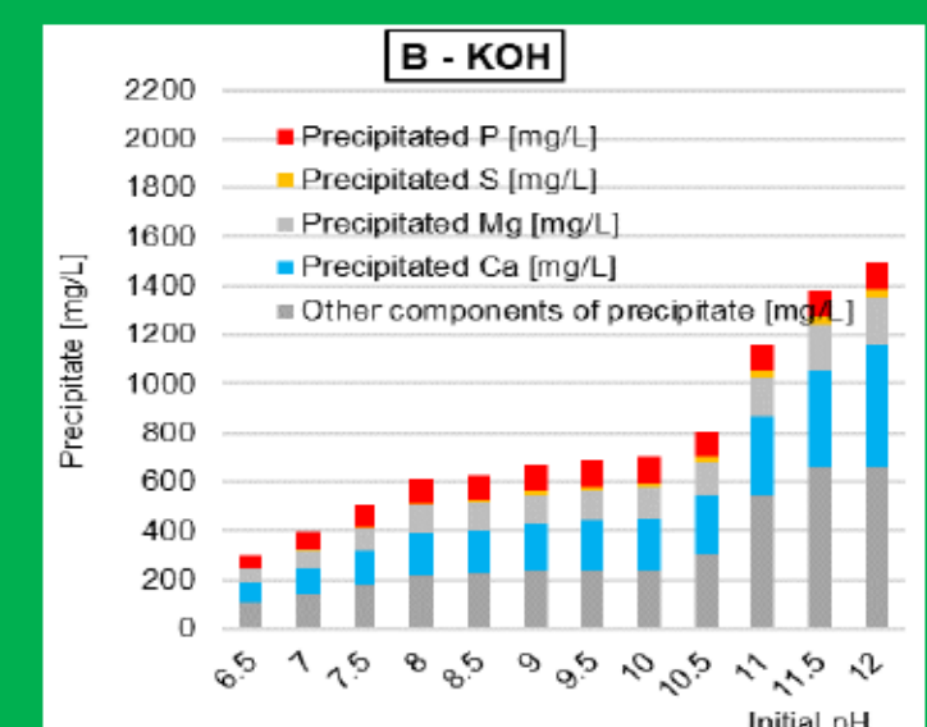
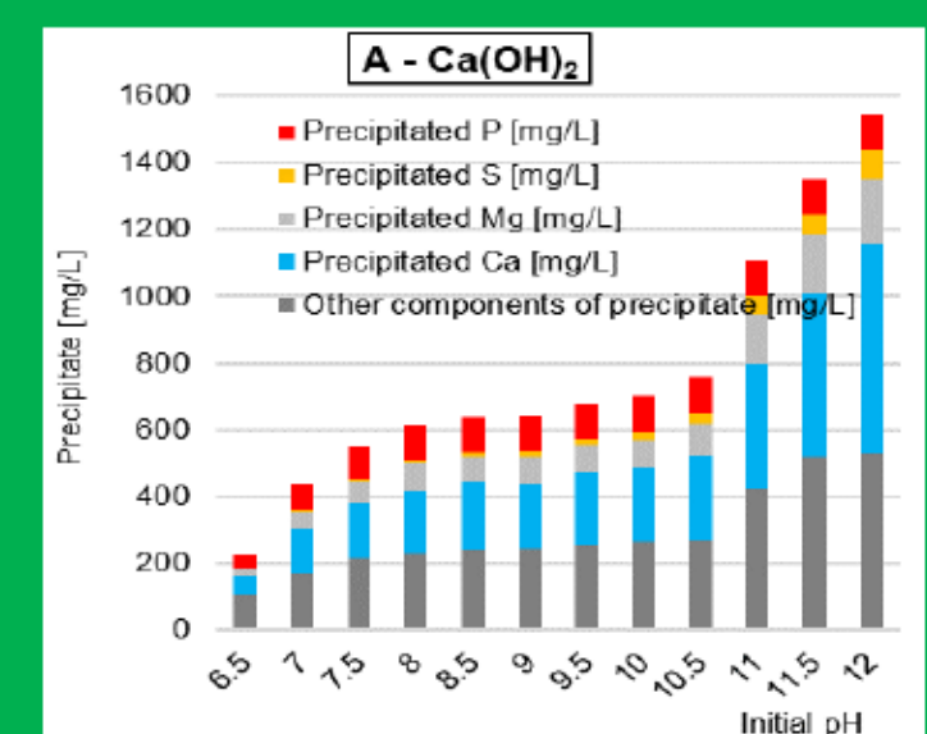
Changes in the content of anions (¹) and cations (²) in greenhouse wastewater depending on pH. Alkalinizing agents: A) $\text{Ca}(\text{OH})_2$, B) KOH , C) NH_4OH .



Sludge volume after alkalization of wastewater with: A) $\text{Ca}(\text{OH})_2$, B) KOH , C) NH_4OH



Effect of pH on sludge composition after greenhouse wastewater alkalization using: A) $\text{Ca}(\text{OH})_2$, B) KOH , C) NH_4OH .



MAIN CONCLUSIONS

The amount of precipitated phosphorus from greenhouse wastewater depended mainly on the pH in the system. The type of alkalinizing agent had a marginal effect on the process of phosphorus precipitation from sewage. The optimum pH of alkalization, guaranteeing high efficiency of phosphorus precipitation from wastewater (>99%), with a relatively small dose of the alkalinizing agent, is pH 9. The most efficient alkalinizing agent (in terms of the amount of reagent used) turned out to be ammonia water.



LIDER

NCBR

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