

## Highlights

- The  $K_a$  and  $K_s$  of AChE inhibited by OP showed mainly species-specific correlations and little correlation with sensitivity to OP.
- Varieties of organic phosphorus pesticides strongly affected the aging constant of Phospho-AChE.
- AChE, from ten different organisms, was much more differentially sensitive to paraoxon than to malaoxon.
- *Cavia porcellus* AChE was sensitive to paraoxon and poorly sensitive to malaoxon.
- The recovery of phosphorylated AChE was greater in Coleoptera than in other insects.
- When insects developed organophosphorus poisoning, they were more inclined to experience aging reactions.