Aureobasidium pullulans: How much is known about its effect on grape juice composition?

Hi there! My name is *Aureobasidium pullulans*. I am a ubiquitous fungus thriving in many environments including the surface of fruits, plants, grape juice and even your kitchen! Little is known about my effect on grape juice composition; however, recent investigations at the AWRI have shown I can produce several extracellular compounds while growing in grape juice.

I prefer fructose over glucose (1) and produce interesting polymers if I have enough oxygen available (2) including:

- poly (β-malic acid) – a polymer of malic acid
- pullulan – a polysaccharide made of glucose monomers.

My versatile lifestyle is partially explained by my ability to produce a wide range of extracellular enzymes. In grape juice, I can have an impact on polysaccharides through pectinase activity and release aromatic compounds (terpenes) using my β-glucosidases (3). I can even eat tannins, using tannin acyl hydrolases, releasing free gallic acid (3). If Fe and Zn levels in grape juice are low, I can potentially slow down alcoholic fermentation (4) by competing with *Saccharomyces cerevisiae*.

(1) Fructophilic

Abundant in freshly pressed grape juice!

(2) Production of polymers

(3) Enzymes

(4) Competition