



## INHIBITION KINETICS OF *B. cinerea* USING *Syzygium aromaticum*, AND *Larrea tridentata*

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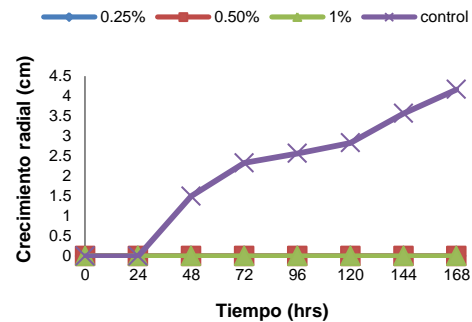
*Key words: clove, phytopathogens, vegetable extracts*

**Introduction.** Fungal pathogens cause considerable losses in fruits and vegetables in postharvest stage (Wills, 2007). The fruit, due to its low pH and high moisture, are highly susceptible to attack by various fungi, which, besides causing decay, can produce mycotoxins, which makes the fruit unfit for consumption (Moss, 2000). It is difficult to determine the extent of post-harvest losses due to decay, however, is significant and vary widely depending on the product (Agrios, 2005). In recent years there has been increased the use of natural plant extracts as alternatives for the control of microorganisms pathogenic to man (Davidson, 1996).

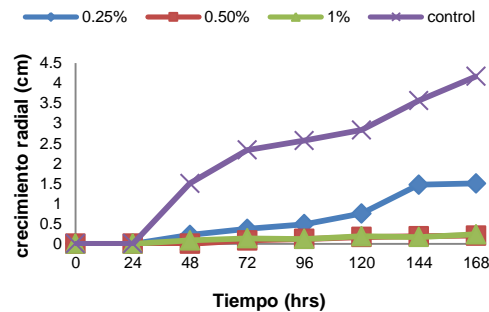
The objective of this work was to evaluate the inhibition kinetics of *Botrytis cinerea* using different vegetable extracts.

**Methods.** *Botrytis cinerea* was proportionated by Biorganix Mexicana SA de CV. The strain was cultured in PDA at 25±2°C. The *Syzygium aromaticum* (clove) and *Larrea tridentata* extracts were produced by Biorganix Mexicana. Inhibition kinetics of *B. cinerea* was performed in poisoned culture at 0, 0.25, 0.50 and 1% of the extract.

**Results.** The figure 1 shows the growth inhibition curve using clove extract, where it is noted that the microorganism is able to inhibit 100% at all concentrations used this is because the major component is eugenol so the antifungal activity of clove extract is due to its action on the cell membrane, causing destabilization of it and inducing cell death (Hernandez, 2011). Figure 2 shows the growth inhibition curve using *Larrea tridentata* extract, where it can be noted that at 0.25% *B. cinerea* begins to reproduce exponentially with an inhibition of 61.82%; while in the concentrations of 0.5% and 1.0%, the inhibition percentage for both cases were 94.48%. The inhibition power of *Larrea tridentata* should be for the phytochemical components like lignans. Significant differences were observed in the concentration of 0.25% with *L. tridentata*.



**Fig 1.** Inhibition growth curve using *Syzygium aromaticum* (clove) over *B. cinerea* in PDA



**Fig 2.** Inhibition growth curve using *Larrea tridentata* over *B. cinerea* in PDA

**Conclusions.** Phytopathogens fungi in post-harvest fruits can be inhibit by vegetable extracts.

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