Antagonism TESTS Botrytis sp. VS CHEMICAL AND BIOLOGICAL FUNGICIDES FUNGICIDES MADE IN BIOQUIRAMA S.A.S.

Introduction

Gray mold caused by the fungus Botrytis cinerea is one of the most common diseases, causing losses in more than 200 plant species in the world (Williamson et al. 2007). This fungus affects stems, fruits and flowers (Elad et al., 2007); usually enters through wounds or attacks plants that are under some kind of biotic or abiotic stress. it can also infect healthy plants, especially in high humidity conditions.

There are some fungicides with a high level of activity against gray mold (Markoglou and Ziogas 2002); however, chemical protection negatively affects the environment and human health. The use of fungicides can allow the occurrence of new resistant strains of phytopathogenic these. Globally, the trend to use more friendly methods with the environment for the protection of plants is presented (. Hajieghrari et al 2008;. Bogumił et al, 2013). Biological control includes, for example, antagonistic microorganisms that live naturally in the soil. Trichoderma is a group of filamentous fungi are well known for their antagonism against some soil pathogens and plant phyllosphere (Jabnoun-Khiareddine et al. 2009). The purpose of this study was to study the effectiveness of some active ingredients and Trichoderma harzianum for inhibition or antagonism against Botrytis sp.

2. Methodology

twenty-one. Isolation of Botrytis

Isolation of the fungus Botrytis sp was conducted from a sample of thyme (Thymus vulgaris) affected by this disease in a crop of aromatic plants in the region of Eastern Antioquia (Cultivation Florida, Vereda El Tambo, La Ceja).

2.2. Antagonism of chemical fungicides vs Botrytis sp.

The test was performed under in vitro conditions using a nutrient medium (acidified PDA). Table 1 shows the evaluated products and doses normally used for application.

Table 1. Active ingredients of chemicals and dose evaluated for antagonism with Botrytis sp.

Active ingredient	Dose x Liter
Kasugamicina	0,5 cc
Azoxystrobin	0,6 cc
Carbendazim	1 cc
Chlorotalonil	1,5 cc
Benomil	1 cc

The culture medium (PDA) was dispensed in Petri dishes and in the center of these sowing isolated pathogen (Botryitis sp) it was performed. The preparation of chemical fungicides was carried out by diluting the product in one liter of water according to the concentrations of Table 1. Then, a disk filter paper was taken and immersed in the mixture and placed around the middle where was planted the Botrytis sp.

The samples were incubated at a temperature of 20 ° C ± 2 ° C for 48 hours to determine the growth of phytopathogenic fungicidal agent against. For ten repetitions tests were used per treatment.

2. 3. Antagonism BIOHAR (Trichodrema harzianum) vs Botrytis sp.

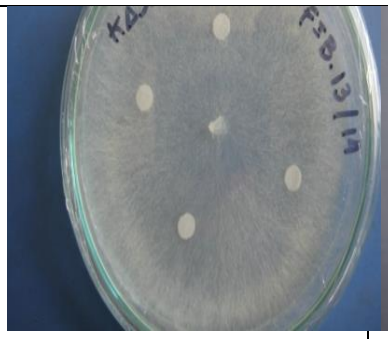
Using the same strain of Botrytis sp, antagonism test was developed with the commercial product BIOHAR (Trichoderma harzianum) in doses of 1 cc / liter. At each end of the culture medium (PDA) Botrytis sp and the fungus T. harzianum was seeded. These were incubated for 72 hr at 20 ° C ± 2 ° C.

3. Results

3. Antagonism of chemical fungicides vs Botrytis sp.

According to the results presented in Figure 1, it is observed that the active ingredients corresponding to carbendazim, kazugamicina, azoxystrobin and benomyl (in the doses tested) did not inhibit fungal growth and evidence complete colonization of the medium including the filter paper impregnated with the fungicide. In the case of chorotalonil fungal growth inhibition it was observed.

1. Carbendazim vs *Botrytis sp*



2. Kasugamacina vs *Botrytis sp.*

3. Azoxystrobin vs *Botrytis sp.*

4. Chlorotalonil vs *Botrytis sp.*

5. Benomil Vs *Botrytis sp.*

Figure 1. Response growth of Botrytis against chemical fungicides

3.2 . Antagonism BIOHAR (Trichodrema harzianum) vs Botrytis sp

Figure 2 is noted as T. harzianum initially halts growth of Botrytis sp and then colonizes greater than 70% range .

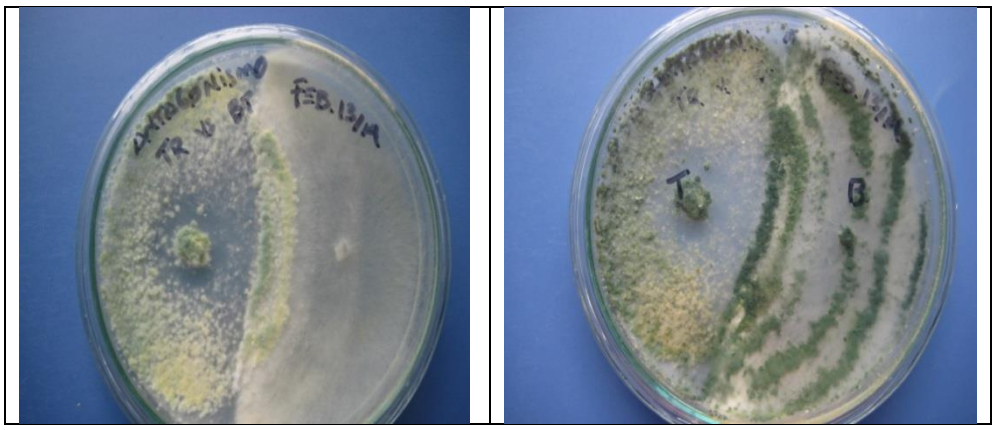


Figure 2. Response growth of Botrytis sp against Trichodrema harzianum

Botrytis sp cause necrosis and rotting of fruit, leaves and foliage in various plants such as mulberry Castilla, strawberries, vines, thyme and others. This disease occurs when fruits or leaves are at the time of maturity and frequent rainfall occur.

For control is used fungicides from groups benzimidazoles, dicarboximides, ergosterol inhibitors, strobilurins, hidroxianilidas, pirimidinamidas, among others. Because the mechanisms of pathogen resistance is necessary strategies disease management are constantly evolving into new control alternatives. They must not only be efficient but also cause minimal negative impact on the environment.

As an alternative to using chemical synthesis fungicides employing biocontrol as BIOHAR which is composed of several strains of Trichoderma native tropical and proposed according to the results showed high activity against Botrytis sp antagonist

4. References

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