Activity of amylases, pectinases and xylanases produced by different strains of *Aspergillus* group *flavus* from different types of corn.

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Introduction. *Aspergillus flavus*, and *A. parasiticus* belong to a group of saprophytic filamentous fungi capable of using a wide range of materials as carbon source. Particularly *A. flavus* is frequently found in crops such as corn, peanuts and cotton (1).
The degradation of complex materials requires that fungi produce and secrete various enzymes to help them to grow and also used in the case of plants, plant tissue colonize. These fungi produce aflatoxins, which have been widely studied because they are highly toxic and potentially carcinogenic, making the presence of *Aspergillus flavus* and their toxins in any type of food is undesirable(1,2).
The study of enzymes (xylanases, pectinases and amilases) that degrade the polysaccharides constituting the cell wall of plants, secreted by the fungus, is not fully covered and is of great interest because they play an important role in the mechanism of pathogenicity, and are considered as virulence factors(3,4).
Usually represent slightly more than 71.5% of the total weight of the grain. The major polysaccharides in maize are the structural and reserve (starch). The carbohydrates are structural components that form part of the structure of cell walls of grain. These carbohydrates are substances such as pectin, hemicellulose, cellulose and lignin (5).The aim of this work was to analyze the activity of polysaccharide degrading enzymes growing in different kind of corn.

Methods. Cultivation was in 100mL medium liquid (crushed corn kernels 1% in water) for 72 h to 37°C and 300 r.p.m. Samples were taken every day (0,24,48 and 72h) Strains were incubated: *Aspergillus flavus* 6541, *Aspergillus flavus* CECT 2687 y *Aspergillus parasiticus* 502 in three different types of corn, (white red and blue). Enzyme activities were determined xylanolytic, exopectinolytic and amylolytic, quantifying reducing sugars released by the enzyme activity by DNS technique. The reaction product was quantitated spectrophotometrically at a wavelength of 575 nm.

Results.

Table 1. Enzime Activities from *Aspergillus flavus* CECT 2687 at 24h in three different types of corn

Enzyme	Enzyme Activity U/mL		
	White Corn	Red Corn	Blue Corn
amilases	14.74	1.01	6.66
pectinases	12.08	16.28	21.29
xilanases	0.80	0.00	0.67

Table 2. Enzime Activities from *Aspergillus flavus* 6541 at 48h in three different types of corn

Enzyme	Enzyme Activity U/mL		
	White Corn	Red Corn	Blue Corn
amilases	3.72	5.51	4.40
pectinases	9.81	20.18	9.64
xilanases	0.50	1.30	1.73

Table 3. Enzime Activities from *Aspergillus parasiticus 502* at 48h in three different types of corn

Enzyme	Enzyme Activity U/mL		
	White Corn	Red Corn	Blue Corn
amilases	2.05	0.00	2.88
pectinases	3.16	16.91	9.75
xilanases	0.00	1.61	0.00

Conclusions. There are important differences in the enzymatic activities of each strain in the different types of corn. There is a higher enzymatic activity the pectinases and amylases but very little activity of the xylanases. Increased pectinases activity in the maizes containing colored anthocyanins (blue and red).

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