can be converted into valuable products such as biofuels, chemicals, cheap energy sources for fermentation, improved animal feeds and human nutrients. However, the treatment to which it must undergo, due to the lignin content, tends to be drastic, which has limited its extensive use. The microorganisms capable of breaking up this macromolecule are diverse — from bacteria to fungi, through the use of their battery of hydrolytic and oxidative enzymes. The white-rot fungi are able of producing lignolytic and cellulolytic enzymes. The objective of this work was to evaluate the capacity to produce xylanases and cellulases by 12 native white-rot fungi isolated from Nuevo Leon, Mexico and three collection strains (*Pleurotus ostreatus* ATTCC 58053), Pch (*Phanerochaete chrysoporium*) and Ba (*Bjerkandera adusta*). A primary assay was conducted in solid media with carboxymethyl cellulose (CMC), as the carbon source. The strains which showed the greatest halo of degradation were Sc (*Schysophyllum commune*), S2, SL2 and the reference strain Pch. In liquid medium the production of cellulases, based on the release of glucose, was determined, as well as the production of xylanases, utilizing xylan as substrate. Cellulases activity ranged from 0.56 to 1.5 mg glucose/mL. The strain with the maximum production was CH8 with 1.5 mg glucose/mL, while Po exhibited the minimum activity with 0.56 mg glucose/mL. The xylanases results showed that Sc was the strain with the highest activity at 38 U/mg-protein followed by CC2 and Cu2 with 17.7 and 15 U/mg-protein respectively, while the strains which showed the least xylanase activity were Ba, CH1, S2 and SL2, with 1.15, 3.9 and 4.6 U/mg-protein, respectively. In spite of the solid mediums being amply utilized as a mechanism for preselection, it is necessary to conduct trials in liquid medium because the production of cellulolytic enzymes undergoes different regulation mechanisms — the culture medium being one of the most determinative. Finally, the production attained by Sc was similar or superior to that obtained with other strains and makes it an option for being utilized in the production of xylanase, optimizing the culture mediums for such effect.

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Pigment production by New Zealand microbes: screening and industrial application

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Industrial production of natural food colorants by microbial fermentation has several advantages such as cheaper production, possibly easier extraction, higher yields through strain improvement, no lack of raw materials and no seasonal variations. Development of microbial food grade pigments are likely to cut down the high production cost of natural pigments, thus leading to a cheaper source of natural food colorants among the modern consumers. Until recently, the use of plant extracts is known to be expensive and uncompetitive to synthetic dyes due to their high production costs. We, therefore, have screened 284 microbial strains from our New Zealand environmental strain collection. Among those, 166 strains produced colored pigments when growing in liquid medium. Twenty-eight pigments were found to be extracellular pigments while 89 presented intracellular pigments. HPLC results showed that 33 purified pigments (approximately 28%) were water-soluble. On the basis of color shades and water solubility of pigments, 39 microbial strains have been selected for further studies. We have used ribosomal RNA sequences to identify the selected strains. Preliminary results showed the presence of representatives from 20 different genera (*E*-value = 0, Max Ident = 93—100%) namely *Paracoccus*, *Saccharomyces*, *Cladosporium*, *Brevundimonas*, *Microbacterium*, *Pseudomonas*, *Flavobacterium*, *Leifsonia*, *Chryseobacterium*, *Sphingopyxis*, *Serratia*, *Erythrobacter*, *Pedobacter*, *Micrococcus*, *Stenotrophomonas*, *Pantoea*, *Janthinobacterium*, *Methylobacterium*, *Sandarakinorhabdus* and *Mycobacterium*. Tests for biological activity and pigment stability are being carried out to shortlist those natural pigments with greatest potential for industrial application.

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Pectinases yeast production using grape skin as carbon source

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Pectinases are used in Enology for some different utilities. Enzymatic preparations from moulds are a mixed of different enzymes with strong and unspecific activities. Some *Saccharomyces cerevisiae* produce pectinases which can be used instead of commercial preparations.

Objectives:

1. Study of enzyme secretion by one *S. cerevisiae* (CECT 11783) for growing on grape skin.
2. Determination of the some factors on enzyme secretion as medium components (carbon source and nitrogen source), time of growth, agitation, temperature, used of detergent.
3. Statistical prediction to obtain the maximum excretion of pectinases in the culture medium.

CECT 11783, a genetically modified yeast, was used for the production of pectinases enzymes using grape skin (industry oenological by-product) as carbon source. Preliminary experiments were carried out to study the influence of carbon source in the culture medium.

Statistical studies were used for determination of the significant variables in enzyme production using factorial designs. Response surface methodology was employed for prediction of the maximum activity with the best culture conditions.

The enzymatic activity was evaluated in all cases by hydrolysis of pectinase from apple.

Preliminary experiments in this study showed that the strain produced pectinases for growing on grape skin without any other carbon source. Statistical treatment (factorial design 2^5) was applied to evaluate the influences of related factors (agitation, temperature, presence of peptone and detergent in the medium and