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**Rajgarhia et al.**

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(54) **GENETICALLY MODIFIED YEAST SPECIES, AND FERMENTATION PROCESSES USING GENETICALLY MODIFIED YEAST**

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This patent is subject to a terminal disclaimer.

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| ***C12N 9/92*** | (2006.01) |
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| ***C12P 7/56*** | (2006.01) |

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(58) **Field of Classification Search**

None

See application file for complete search history.

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(57) **ABSTRACT**

Yeast cells are transformed with an exogenous xylose isomerase gene. Additional genetic modifications enhance the ability of the transformed cells to ferment xylose to ethanol or other desired fermentation products. Those modifications include deletion of non-specific or specific aldose reductase gene(s), deletion of xylitol dehydrogenase gene(s) and/or overexpression of xylulokinase.

**22 Claims, 49 Drawing Sheets**