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Recovery of acetoin, a chemical pre-curser and produced via fermentation of sugar beet extract, using solvents.

Acetoin (3-hydroxybutanone) is a four-carbon ketone-alcohol used in the food industry and is also a precursor to important industrial chemicals such as butanediols and butanols. In this work, we produced acetoin from sugars in sugar beet extract via fermentation using the bacterium *Bacillus subtilis*. The product was recovered from the fermentation broth with acetone, another product that can be produced via fermentation of beet extract. The results show that extraction was feasible and a process was designed and a cost analysis was performed using SuperPro Designer.