Studies on the Yeast Growth.

By

Takeo SHIMODAIRA.

(Received March 5, 1932.)

The problem of the yeast growth was treated in the present investigation. When the amount of the pitching yeast in a certain fermenting solution is small, its yield calculated on the ratio to the pitching yeast cells, is considerably effected by the quantity of the initial cells. I have therefore adopted in my experiment relatively a large number of cells under which condition a slight difference between the quantities of the pitching yeast for a series of experiments insignificantly upon the ratio and the result can be undoubtedly determined.

I have undertaken at first to determine the most favorable concentration of sugar of Hayduck's solution and beer wort for the yeast growth and found 6~7% for the former and 15~16% for the latter.

Researches on the Electrolytic Reduction Potentials of Organic Compounds. Part XIII.

Reduction Potential of Azobenzene.

By

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(Received April 10, 1932.)

Summary.

(1) The electrolytic reduction potentials of azobenzene were measured by the polarographic method with the dropping mercury, stationary mercury and platinum cathode.

(2) From R. P. measured by the dropping cathode, the electrolytic reduction of azobenzene may be regarded as a reversible azohydrazo system in the range of 1.2 to 5.0 by pH.

(3) R. P. measured by the stationary mercury cathode with a cathodic surface area of 0.785 mm² gave the same value as that of the dropping

cathode.

(4) The polarograms obtained with the stationary mercury cathode has always maximum and this maximum was due to the accumulation of the reduction product on the cathode.

(5) R. P. measured by the platinum cathode with a surface area of 0.785 mm² were about 150~200 mV more negative than other two cases.

Researches on the Electrolytic Reduction Potentials of Organic Compounds. Part XIV.

Reduction Potentials of Dinitrophenols.

By

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(Received 10, April 1932.)

Summary.

(1) The electrolytic reduction potentials of α -, β - and γ -dinitrophenols were measured by the polarographic method.

(2) The reduction of dinitrophenols took place in two stages as dinitrobenzenes due to their two nitro groups.

(3) The reducibilities of dinitrophenols are arranged in order of $\gamma > \beta > \alpha$ in the first stage and $\beta > \alpha > \gamma$ in the second stage.

(4) The comparison of the reduction potentials of dinitrophenols, dinitrobenzenes, nitrobenzene and nitrophenols was made and their mutual relation was found to obey our negativity rule.

(5) The solubilities of dinitrophenols by the polarographic method at 25° C are as follows :

2,4 (or α)-dinitrophenol 0.0865 g/L
2,6 (or β)-dinitrophenol : 0.2853 g/L
2,5 (or γ)-dinitrophenol : 0.1123 g/L