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Reducing ground water consumption in Pakistani distillery through very high gravity technology

Muhammad Arshad
University of Veterinary and Animal Sciences, Pakistan

Very high gravity technology (VHG) was implemented on industrial scale fermenters to study the reduction in fresh water consumption in the process as well as ethanol and by products formation during molasses fermentation. Different brixº 32, 36 and 40 with aeration rates 0.00, 0.20, 0.40, and 0.60 vvm has been applied. The maximum ethanol production was 12.2% (v/v) at 40º brix with 0.2 vvm aeration. Byproducts have the increasing trend with the brixº but aeration rate 0.2 vvm was found to be optimum for byproduct formation throughout the study. The high ethanol % attained had eased the distillation process and steam consumption reduced significantly. More over water consumption was reduced by 35% decreasing the stillage volume. Reduction in steam consumption decreases the overall water utilization by improving the economics of industrial ethanol production process significantly. Decrease in stillage volume is helpful in combating this environmental pollutant efficiently.

e: muhammad.arshad@uvas.edu.pk