Solution of Mixture Problem Prioritized Raw Materials Using Mixed Integer Linear Programming

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***Abstract*— Mixture problem is the problem of obtaining one or more products from by-products having different contents under the required constraints. Mixture problems should be organized in a way to optimize a given objective function. This is generally a cost optimization, fulfilling specific constraints and conditions and this kind of problems mostly solved with linear programming models. Decision makers want to have the solutions for mixture problems under the different scenarios. One of these scenarios is to use the raw materials which have different priorities in the solution. In this study, a new mixed integer linear programming (MILP) model which finds a solution according to high priorities is developed. The priorities are determined according to raw materials availabilities between 1 and 4. The developed model is practiced on a feed mix problem as a mixture problem and the model is coded by object-oriented programming language C#.**

***Index Terms*— Mixing Problem, Linear Programming, Feed Mixing, Optimisation Application, Cost Optimisation**

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