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Synthesis of Potassium 2,4 and 2,6-bis[(4,6-dimethoxypyrimidin-2-yl)oxy]benzoate

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ABSTRACT

The synthesis of Potassium 2,4 and 2,6-bis[(4,6-dimethoxypyrimidin-2-yl)oxy]benzoate , which belongs to the agrochemical field. The preparation method includes using 2-methylsufonyl-4, 6-dimethoxypyrimidine and 2,4- and 2,6-dihydroxy benzoic acid to directly react in aromatic hydrocarbon and in presence of potassium carbonate and potassium hydroxide to obtain above compounds . Both the compounds have herbicidal activity.

Key words: Synthesis, Potassium 2,4 and 2,6-bis[(4,6-dimethoxypyrimidin-2-yl)oxy]benzoate, herbicidal activity.

INTRODUCTION

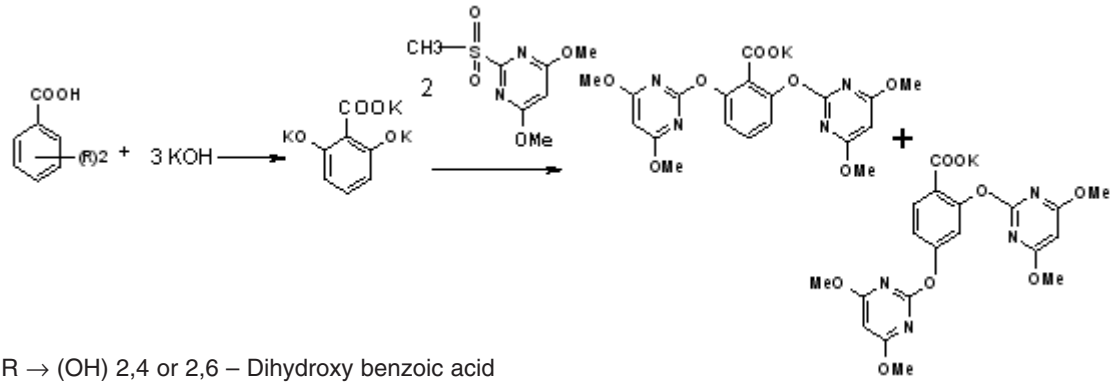
Chemical weed control is a commonly used and reliable method to control weeds in direct seeded rice (DSR) and planted rice fields. Appropriate use of both pre-emergence and post emergence herbicides has been found effective in the paddy fields[3]. Since, DSR fields are characterized by floristically diverse weed communities[4]. The synthesis relates to a process for synthesis of a herbicidal active potassium salt of pyrimidinyloxy benzoic acid.

MATERIALS AND METHOD

N/2,4 and 2,6-dihydroxy bezoic acid (aldrich), 2-methylsulfony-4,6-dimethoxy pyrimidine (Fulka) , potassium hydroxide (Sdfine) , toluene (Sdfine) and benzyltriethyl ammonium chloride (Aldrich) has been used in the reaction.

Toluene was charged in to 100ml RBF fitted with Dean& strack apparatus , mechanical stirrer and condenser Charged Dihydroxy Benzoic acid (1.0 gm-mole) followed PTC 5% and potassium hydroxide (3.0 gm-mole) at room temperature. Reflux for 2 hrs and cooled the reaction mass to 70 ^{O}C and then 2-Methylsulfonyl - 4,6-dimethoxy pyrimidine(2.0 gm-mole) was added. Reaction was maintained at Reflux temperature for 10 hrs. Product was isolated by filtration and recrystalized form ethyl acetate. Purity of the product >99.0% having yield 30.0%.

Here PTC has been used for the reaction are tert-Butly ammonium bromide and Benzyl



R → (OH) 2,4 or 2,6 – Dihydroxy benzoic acid

Scheme 1:

triethylammonium chloride. Both the catalyst have identical yield.

DISCUSSION

10% and 7% Suspended Concentration (SC) Formulation of Potassium 2,4 and 2,6-bis[(4,6-dimethoxypyrimidin-2-yl)oxy]benzoate sample was prepared and tested in rice crop having weeds 2,6 isomer gives good results then 2,4- isomer. The structure of the compound has been confirmed by NMR, IR and LCMS.

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