

ผลกระทบของปริมาณการสังเคราะห์แอมโมเนียมซัลเฟตต่อกระบวนการผลิตปุ๋ยเม็ด  
ในระดับอุตสาหกรรม

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วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาวิศวกรรมศาสตรมหาบัณฑิต

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EFFECT OF AMMONIUM SULFATE SYNTHESIS AMOUNT ON INDUSTRIAL-SCALE PRODUCTION  
OF FERTILIZER GRANULES

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เนื่องจากประเทศไทยมีรากฐานมาจากการเกษตร อุตสาหกรรมการผลิตปุ๋ยเคมีภายในประเทศจึงมีความสำคัญสูงต่อการช่วยส่งเสริมด้านเกษตรกรรม ทว่าการแข่งขันเชิงธุรกิจได้กลายเป็นส่วนสำคัญที่ทำให้เกิดการเล็งเห็นความจำเป็นในการลดต้นทุนทางด้านวัตถุดิบซึ่งเป็นต้นทุนส่วนใหญ่ให้ได้มากที่สุด ดังนั้นแนวคิดในการสังเคราะห์แอมโมเนียมซัลเฟตจากก๊าซแอมโมเนียและกรดซัลฟูริกขึ้นเอง จึงมีส่วนสำคัญในการลดปริมาณและต้นทุนการนำเข้าเม็ดแอมโมเนียมซัลเฟตจากต่างประเทศ ทางเลือกนี้จึงมีความสำคัญต่อเศรษฐศาสตร์ของโรงงานและจำเป็นที่จะต้องได้รับการศึกษาเพิ่มเติมเพื่อปรับปรุงประสิทธิภาพของกระบวนการให้ดียิ่งขึ้น งานวิจัยชิ้นนี้จึงเลือกศึกษาความสัมพันธ์ระหว่างความเข้มข้นกรดซัลฟูริกที่ใช้ในการผลิตแอมโมเนียมซัลเฟตกับประสิทธิภาพการปั้นเม็ดและกำลังการผลิตปุ๋ยเม็ด

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THANA DEAWWANICH : EFFECT OF AMMONIUM SULFATE SYNTHESIS AMOUNT ON INDUSTRIAL-SCALE PRODUCTION OF FERTILIZER GRANULES. THESIS ADVISOR : PROF. WIWUT TANTAPANICHAKOON, PH.D., THESIS COADVISOR : SURAPOL PONGSATAT, 104pp. ISBN 974-17-3802-1.

Since the economics in Thailand is established upon agriculture, the domestic fertilizer industrial is very important in supporting agricultural activities. With the business competitions being fierce, reduction of the capital cost of raw materials, which is a major cost, needs to be realized. In this aspect, Thailand's ammonium sulfate synthesis from ammonia gas and sulfuric acid liquid becomes a part that would reduce the significant amount and cost of imported ammonium sulfate granules. The option has a major impact on the economics of the plant while the synthesis process still needs further studies so as to improve its process efficiency. Therefore, this research aims at studying the relationship between the concentration of sulfuric acid used in ammonium sulfate synthesis and the granulation efficiency as well as production capacity of fertilizer granules.

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