

81. 雞糞加工肥料產製設備研發與探討

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本研究之目的為建置「雞糞加值產品處理套組」，專為蛋雞場開發之雞糞加工處理設備，套組以蛋雞場之乾燥雞糞為原料（含水率 20% 以下），依序經粉碎、製粒、加熱及保溫殺菌製程，製粒粒徑設定為 6 mm，產能達 200 kg/h 以上。製程扣合 5-08 雞糞加工肥料品目規範，製粒後搭配關鍵之加熱處理技術，讓雞糞維持 70°C 以上至少 30 分鐘進行殺菌，產製之高品質粒狀雞糞加工產品，符合雞糞加工肥料品目標準及限制事項，其中大腸桿菌群固態每公克低於 1×10^3 最確數，並經「作物毒害試驗」確認為無毒害性。以套組年處理量 550 公噸推算，每公斤雞糞加工肥料成品之生產成本約為 5.2 元，扣除乾燥雞糞原料每公斤 2 元，則生產所投入之機械設備、人工及維護等費用支出計 3.2 元。本套組之開發提供蛋雞場雞糞處理模式之參考，期能紓解雞隻排泄物處理及去化問題，利於產品後續多元化利用。

關鍵語：雞糞、製粒、加熱處理

Research and development of fertilizer production equipment for chicken manure processing

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The project set up a set of poultry manure value-added production treatment kits for laying hen farms, to produce high-quality pelletized poultry manure fertilizer. The raw material of the processing kit is dry poultry manure (moisture content below 20%). The kit is mainly composed of feeder, grinder, pelletizer, heater and electrical control equipment. The diameter length of pelletized was 6 mm, with a production capacity of more than 200 kg/h. The production process is in line with the No. 5-08 poultry manure processing fertilizer product specification. After granulation, it is equipped with key heating treatment program to keep above 70°C for at least 30 minutes for sterilization. The finished product solid count of coliforms count were less than 1×10^3 MPN per gram, and confirmed to be non-toxic through the "Crop Toxic Test". Calculated based on the annual processing capacity of 550 tons, production cost per kilogram of poultry manure processed fertilizer is about 5.2 NTD. After deducting 2 NTD per kilogram of dry poultry manure, the cost of mechanical equipment, labor and maintenance is calculated 3.2 NTD. In conclusion, the set provides a reference for the treatment mode of chicken manure in laying hen farms, which is expected to alleviate the problem of chicken excrement treatment, and is conducive to the subsequent diversified use of products.

Key Words: Chicken manure, Heat treatment, Pelletize