

# Manure Happens: Delmarva's Distribution of Poultry Litter

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## RESEARCH ABSTRACT

The Delmarva (Delaware, Maryland, and Virginia) region has a rich history in the poultry industry and produces over 575 million broilers (chickens) annually. Litter (manure) is a byproduct of poultry production that is rich in nutrients; however, efficient utilization of litter is challenging due to logistical issues associated with its distribution. Litter is commonly spread on cropland as an alternative to commercial fertilizers, but due to its high phosphorus (P) content, it cannot all be applied where it is produced. Transporting litter from areas with high soil P levels to areas with low soil P levels can benefit both agricultural production (by supplementing nutrient-deficient soil) and the environment (by reducing nutrient runoff). The objective of this study is to understand the poultry production industry and what happens to the byproduct of it. We constructed a survey that was sent to poultry growers around Delmarva to determine how many flocks farmers raise each year, the quantity of litter produced, what litter management practices are used, and where litter is transported and how it is used after it is removed from poultry houses. This information will be analyzed along with data from manure broker interviews and a crop producer survey to identify ways to improve regional utilization of litter. Results from this study will inform the development of a market platform where Delmarva poultry litter producers, brokers, and crop farmers can come together to connect the people who have litter to the people who want it.

## DATA COLLECTION

During the summer of 2019, we began the first phase of research with manure brokers. By interviewing manure brokers, we learned that crop growers in non-poultry producing areas, with low soil nutrient levels cannot find farmers who are willing to sell and transport manure at a reasonable price. The farther away they have to travel, the higher the cost of the manure. For those farmers, it is more feasible to buy cheaper synthetic fertilizers.

The poultry grower survey invitations were sent out on the week of April 27th, 2020 and over the next month the majority of the responses should be received. From this survey we hope to learn about the quantity of litter produced by flocks, where the litter is transported to after removal, and current and historically management practices.

The National Agricultural Statistics Service (NASS) has distributed the crop producer survey and expects to have a data file by June 2020. This survey will detail information regarding the amount of acres farmed, varieties of crops, any conservation practices, sources of nutrients

(fertilizers, animal manures, or other bio sources), and their knowledge and usage of poultry litter.

## NEXT STEPS

As the spring semester winds down to an end, there is still much to do for this project. As a graduating senior I plan to continue my education at the University of Delaware as a M.S. student in Agriculture and Resource Economics, where I will carry on with this project. In the meantime, I am a part of Spin-IN, a student based program run by University of Delaware's Office of Economic Innovation and Partnerships (OEIP). This project focuses on one of the end goals of this research, to create and design a tool that will help individuals in the poultry industry. As a student who has been working with Dr. Palm-Forster and Dr. Shober, I am the leader of my peer cohort and try to help them understand the importance of what we're doing, get them in touch with the right contacts, and reach out to our leads with any of their questions and concerns.

## REFLECTION

Over the time working on this project I have been able to reach out to different communities and learn how the moving facets of the poultry industry interconnect to fabricate the billion dollar industry on Delmarva. Through this research, I've come to understand how important it is for efficient communication from the scientific world to the producers down to the consumers. For our specific project, it's important for the researchers and government agencies to inform and educate farmers on best management practices to ensure the protection of the environment and the sustainability of the market. Consumers influence the market by their preference in what they buy; what they want, the farmers try to produce.

The most valuable experience I've gained from working under Dr. Palm-Forster and Dr. Shober is creating documents for the survey, whether it's the documentation needed for the IRB protocols or designing the survey and crafting well-worded questions. This experience has taught me how to be inclusive and concise in my writing, emphasize the important pieces we want to communicate but also include information that can be understood by a vast audience.

It was challenging when everything became switched to an online format. Many of the questions I was researching I was expecting to reach out to someone to interview or chat with, once the world became virtual it was harder to make those personal connections. Another challenge was some weeks I would have hardly any work to complete while we were in a waiting game to get approval from third parties, and other weeks it was all I could do to keep on top of my school work and my research. But as the data collection portion of the project winds down, the hectic days are fewer.

## REFERENCES

Georgie Cartanza UD Extension May 4th, 2020 Presented Poultry Housing to the Spin-In group