

# “Summary of How Fertilizer Dealers Integrated Manure Into Their Nutrient Management Programs”.

Jay W. Johnson and Kevin Elder<sup>1</sup>

Two fertilizer dealers established manure brokerages in Ohio in the spring of 1992. One was in Holmes County in Northeast Ohio with Progressive Crop Service, an independent fertilizer dealer. This county is in an area which has a high concentration of poultry located in the eastern part of the county. Most of the row crop agriculture is in the western side of the county. The terrain is rolling and this is an Amish community which tends to have small farms. The second site is in Darke County in western Ohio with Harvest Land Co-op. This area also has a high concentration of poultry. In Darke County the terrain is flat and farm size is above average. Almost all farms produce corn and soybean grains for market. Each of these brokerages was subsidized by a grant from the Ohio Water Development Authority for three years. Following are the final reports from each dealer.

## Holmes County:

Over 6,000 tons of manure were spread over 3 years.

### What we did:

1. 90% of litter spread was broiler litter with a sawdust bedding source.
2. Exceeded our volume expectations each year.
3. Used primarily spinner truck applicators.
4. Hauled most of our litter 25 to 30 miles one way.
5. Gained credibility with the general ag community for poultry litter as an agronomic product.

### What we have learned:

1. Poultry litter is a viable source of agronomic nutrients.
2. Our greatest limitation is time.
  - a. There are only about 10 days open for preplant truck application in agronomic crops on average.
  - b. In our area and with our soil types we have about 20 days post harvest when row crop fields are suitable for truck application.
  - c. Manure is available in small quantities and at various times of the year in the eastern end of the county.
  - d. We need to handle it twice, even though our costs to do so are higher.
  - e. Not having on-farm manure storage really makes timing difficult.
3. Manure's bulkiness limits its uses at planting times as compared to commercial fertilizer.
4. Farmers still want some phosphorus close to the seedling and therefore will not forgo starter fertilizer totally.
5. Scheduling is very tough with our Amish producers who have no telephones.

---

<sup>1</sup>Professor of Soil Fertility at Ohio State University and agronomy coordinator at Ohio Department of Natural Resources, respectively.

6. The heavy tourist traffic in the eastern part of the county greatly impacted the length of time to haul manure.
7. Customers will bypass the broker and go directly to the producer if they can.
8. It will take time and possibly legislation to get broad based acceptance by all involved.
9. The consumer must be willing to pay extra to cover costs of animal production.

Where we are headed:

1. We will continue in the manure brokerage business.
2. It will be used as a filler to our regular agronomic services at this time.
3. We will look for ways to add value to the product so we can market it as a more complete fertilizer.
4. We will seek out low cost transportation so we can concentrate on the technical side.
5. As a basis, we will use assumptive values of \$10/ton to load and transport product to farms and then another \$10/ton to reload and custom apply the manure.

In conclusion, we have learned a lot from our experience in the manure brokerage program and see P.C.S. staying keenly abreast of changes in the climate concerning the use of poultry litter as base source of nutrients in our cropping programs. And we will work to discover the changes forthcoming and how we may adopt them to our customers.

### Darke County:

Over 5,000 tons of manure were spread over 3 years.

Most of the manure (poultry-turkey) was used as a 4 to 5 ton per acre maintenance program. We will recommend a high nitrogen-low phosphate or even a total nitrogen row starter. Based on past years' data, we have to use a nitrogen source starter, or we have yield losses up to 20 bushels per acre. The yields this year were consistent with conventional fertilizer. When I asked about 1995 results, they had these comments:

1. The corn over the hill yielded better and stood better than in previous drought.
2. Stalks on the hills all had ears, but short.
3. 28% application had the same yield as conventional fields.
4. Corn looked good and yield was above the 1995 harvest average.

So, from their comments it appears they were all very happy and want to participate next year. The cost and profit of handling manure is as follows:

### Summary of Costs:

2 houses or 400 ton cost	\$420.00
1240 ton @ \$1.00 per 20 ton	62.00
Hauling @ \$45.00 per hour per same	7,458.75
Lab test of manure	<u>8.00</u>
<b>Total</b>	<b>\$8,018.75</b>
Income: 1640 ton @ \$7.50/ton	\$12,300.00

The ending profit was \$2.61 per ton for brokering the manure. The nutrient test of manure did vary this year (see enclosed test results). If you put on a ton per acre, the comparative cost to commercial fertilizer is as follows: (based on average of the three samples):

<u>Fertilizer</u>	<u>Cost</u>
Nitrogen 43.8 x 0.33	\$14.50
P <sub>2</sub> O <sub>5</sub>	70.2
K <sub>2</sub> O <sub>5</sub>	49.5

Using today's retail fertilizer prices, we would have a \$13.41 fertilizer value for \$7.50 to the farmer or a \$5.91 saving. The economical value still favors manure.

In summary, we know and still can confirm that manure when used as a nutrient food for crops is and will remain an economical food source for crops. The problem we have had and are still experiencing is getting the manure. I could have used 1,000 additional tons this year.

Over the three years of this study there has been wide acceptance by grain farmers willing to replace chemical fertilizers with manure nutrients for crop production. The major problem has been timing of when fields were suitable for spreading of manure. In the spring when fields are dry enough for manure spreading, the cooperators often had other field operations associated with their main ag chemical business which had a greater financial return than did manure spreading. Both cooperators have used the manure brokerage program to supplement business in slow times. The movement of manure continues to be a timing and labor problem for each brokerage. Progressive Crop Service indicates they plan to contract with local haulers to move manure from local poultry facilities to their property or to local grain farmers and they will concentrate on the spreading of the manure.

In the final analysis, Mr. Duane Martin of Progressive Crop Service indicates he plans to continue his manure brokerage activities. This would indicate that other ag chemical dealers can and should look at manure brokerages as a way to increase the use of labor, facilities, nutrient management expertise and resources to expand services and profits.

Mr. Wayne Baker of Harvest Land Co-op indicated that the current cost to purchase and apply manure was \$4.89 per ton. The selling price of the manure was \$7.50 per ton. A profit of \$2.61 per ton was returned to the brokerage cooperator. The average nutrient value, at current fertilizer values, was \$13.41 per ton. This amounted to a savings of \$5.91 per ton manure for the grain farmer. Using four to five tons of manure per acre amounted to net savings of nutrient cost of \$23.64 to \$29.55 per acre. Yields in 1995 were equal to conventional fertilized corn.

Harvest Land Co-op indicated they could have used 1,000 more tons of manure in the second half of 1995. They continue to have a problem of purchasing manure from the poultry industry. If purchasing of manure is possible in the future they plan to continue their brokerage program.

**PROCEEDINGS OF THE TWENTY-SIXTH  
NORTH CENTRAL EXTENSION-INDUSTRY  
SOIL FERTILITY CONFERENCE**

Published for  
The North Central Extension-Industry Soil Fertility Conference  
by  
Potash & Phosphate Institute  
700 - 22nd Avenue, South  
Brookings, SD 57006  
605-697-7149

November 20-21, 1996

St. Louis Westport Holiday Inn  
St. Louis, Missouri

Volume 12

Program Chairman and Editor:

Dr. Peter Scharf  
University of Missouri  
Dept. of Agronomy  
Columbia, MO 65211