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Moving Poultry Litter in Alabama

Traditionally, poultry litter has been applied heavily to pastures and cropland adjacent to the production facility. This was no problem in the 1960s and 1970s when the poultry industry was small. Most Alabama land needed nutrients, especially phosphorus (P), and row crop acreage was high. As the poultry industry grew particularly in the Appalachian region of North Alabama, the situation began to change in the 1980s and 1990s. Today with over 1.6 million tons of dry poultry litter produced on almost 4,000 poultry farms, excess nutrients have become a serious environmental concern.

Soil samples tested by the Auburn University Soil Testing Laboratory in 2005 from the Appalachian counties of Cullman, Marshall, Dekalb, and Blount, our four largest poultry producing counties, indicate that 38% of the samples tested "very high" or "extremely high" in P. On the other hand Hale, Perry, Marengo, and Dallas Counties, four central Alabama Black Belt counties with mostly pastures and some row crops had only 11% of their samples test "very high" or "extremely high" in P. In fact, 65% of these Black Belt counties needed P fertilization for every crop planted (Fig. 1).

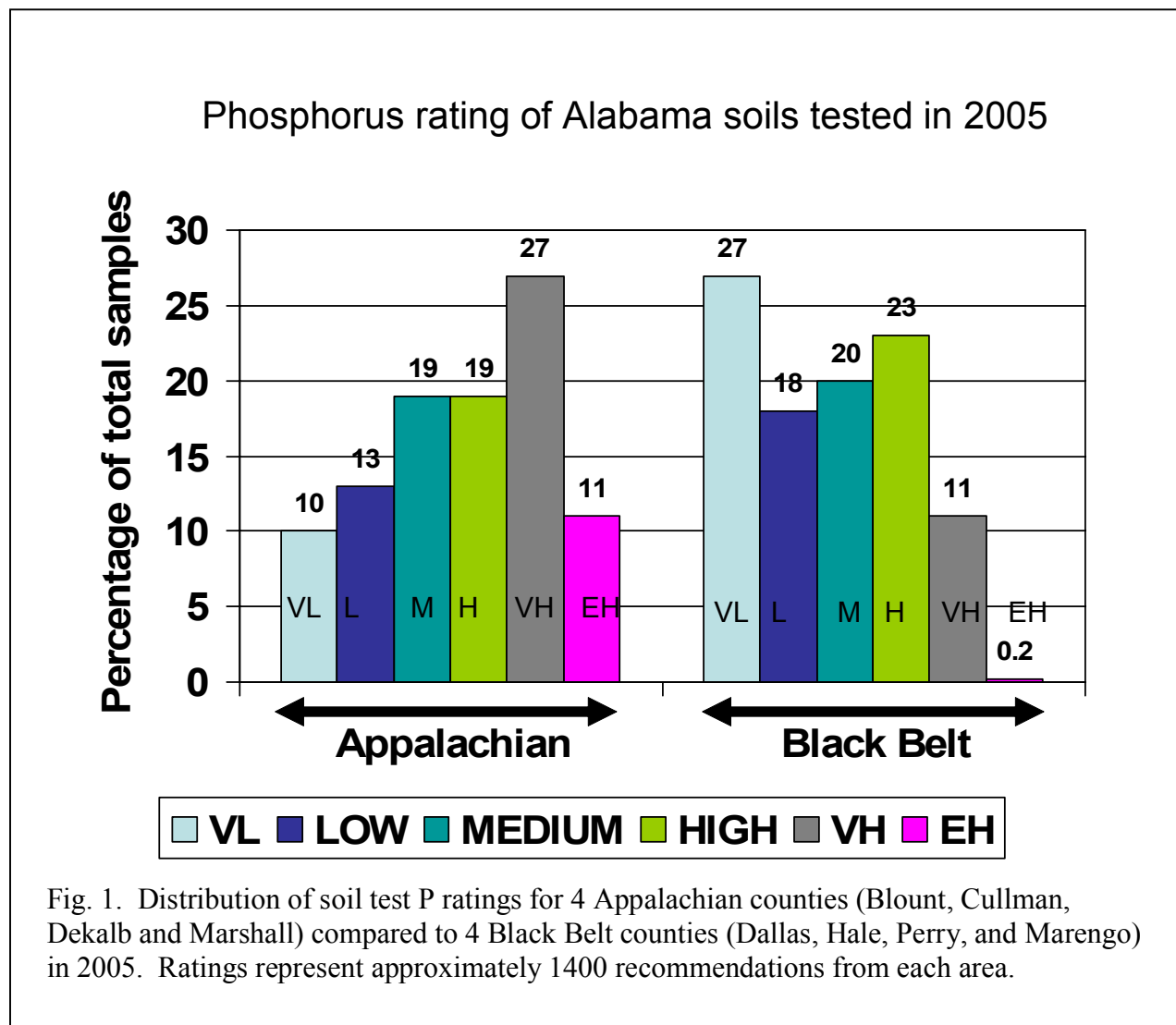
The challenge for years has been, "How do we encourage the transportation of poultry litter from areas of excess production to areas of greatest need?" Obviously, economics are a key factor. Nutrients have been cheap, but transportation costs always have been high. It was easier and cheaper to continue to apply litter near the point of production than pay to transport it.

Changing policies

Alabama's AFO/CAFO (Animal Feeding Operations/Concentrated Animal Feeding Operations) Rule was enacted in 1999 by the Alabama Department of Environmental Management. In addition to encouraging the application of litter based upon best management practices (BMPs), these rules established a volunteer Certified Animal Waste Vendor (CAWV) program for Alabama, the first such program in the United States. Trained vendors were certified by the Alabama Department of Agriculture and Industries to transport and spread animal waste. A list of these vendors is maintained on the Internet so potential buyers and sellers of poultry litter know who to contact.

<http://www.aces.edu/dept/aawm/County.php>

In 2005 and 2006, almost 160 vendors have become trained by Alabama Cooperative Extension System and certified over the Internet.



The Price of Nutrients

The rapidly increasing cost of commercial fertilizer nutrients especially nitrogen (N) over the past year has encouraged the transportation and use of poultry litter. The tremendous increase in the price of N is largely due to the increased cost of natural gas used in ammonia manufacture. Increases in phosphate and potash are due mostly to transportation costs (Fig. 2). When Alabama growers ask about alternatives to the high cost of fertilizers, they have few options. One of the most obvious options is poultry litter.

The Value of Poultry Litter

A good rule of thumb is that fresh poultry broiler litter is about a 3-3-2 grade fertilizer (e.g., a ton will contain 60-60-40 pounds N-P₂O₅-K₂O). Of course, these values are highly variable and a grower purchasing poultry litter from a CAWV would want reasonable assurance of its nutrient content. The average analysis has been creeping higher and higher over the years as more flocks are produced on the same litter and litter is kept drier (<20% moisture). The phosphate and potash in poultry litter are considered to be as plant available as that in commercial fertilizers, but the plant available N is often less

because of the organic N content. A conservative factor is 2/3 of the total N is plant available, although Alabama research with cotton and corn has shown N availability as high as 100% compared to ammonium nitrate. Unless the litter is tested, assume about 40 pounds of plant available N per ton the year it is applied. Assuming N prices for ammonium nitrate at \$0.45 per pound (\$306 per ton), then a ton of broiler litter is worth between \$18 and \$27 per ton just for the N. Transportation costs vary with vendor but expect to pay around \$2 per mile for a 20-ton truckload.

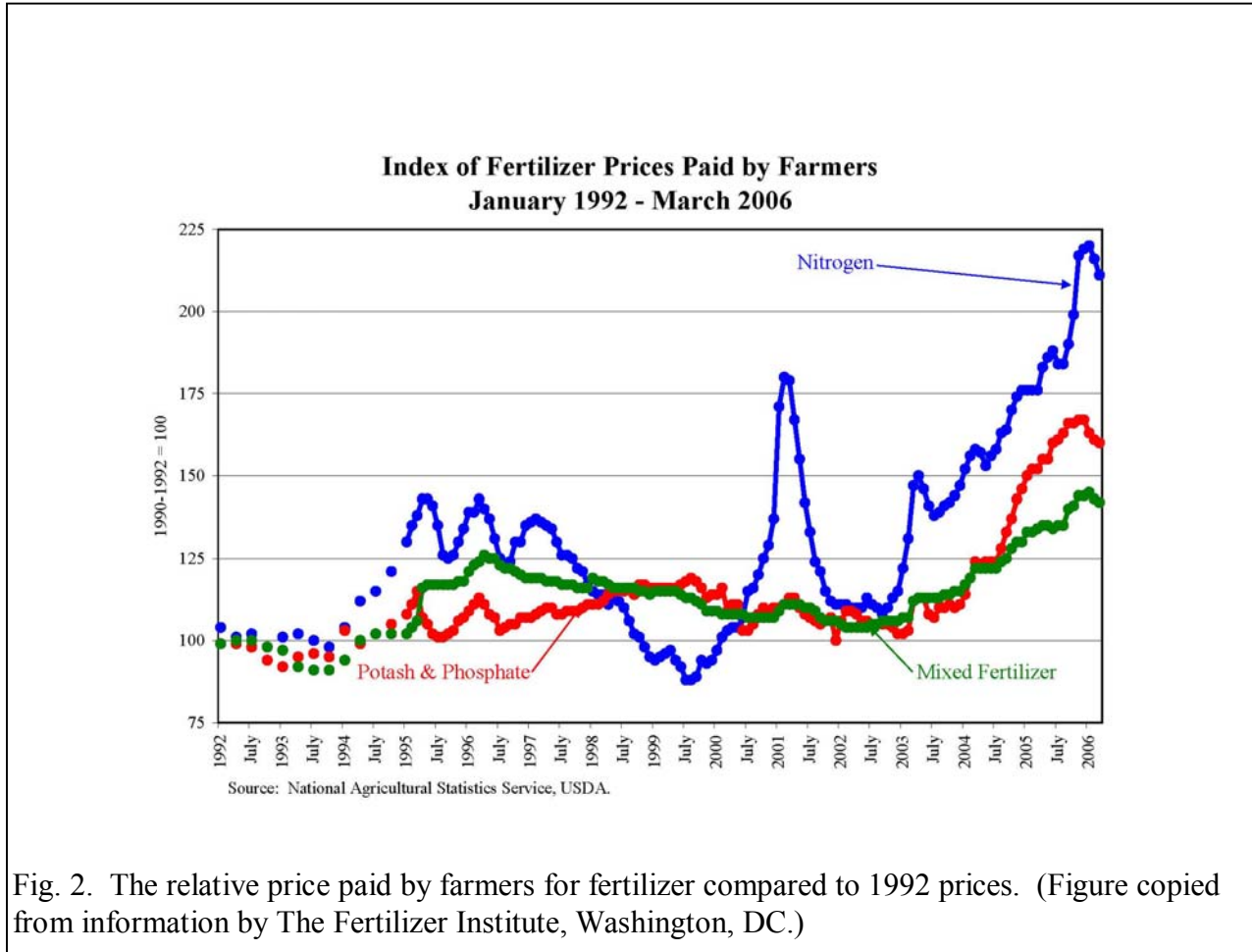


Fig. 2. The relative price paid by farmers for fertilizer compared to 1992 prices. (Figure copied from information by The Fertilizer Institute, Washington, DC.)

The Poultry Litter Distribution Project

The project has two primary objectives. The first objective is to create an incentive to distribute litter to areas of the state that have historically not used litter. This will reduce litter application in areas where it has traditionally been over applied. The second objective is the promotion of a long-term market for litter around the state to better distribute nutrients. In 2003, the Alabama office of USDA-Natural Resources Conservation Service began administering a cost-sharing program to help growers in non-poultry producing regions of the state use poultry litter. This program used national Environmental Quality Incentive Program (EQIP) funds that were administered locally. The funds went to the farms receiving litter in the form of incentive payments for three years to help cover transportation costs for the litter. This program has been particularly successful in 2006 at moving large amounts of poultry litter from intensive poultry producing areas to selected counties where the litter is needed. Figure 3 shows that growers in Marengo, Hale, Perry, and Dallas counties in the West-central Alabama Black

Belt region, and Shelby County in Central Alabama have taken advantage of this program. No records are kept of litter that was transported outside of the EQIP Program.

Summary

Changes in government policies, the increasing cost of fertilizer, and the availability of cost-sharing funds for transportation are promoting the movement of poultry litter from intensive production areas to agricultural areas where the nutrients are needed and can be used more efficiently. We expect this trend to continue because environmental regulations will continue to limit the over-application of nutrients, and the cost of commercial fertilizers is not expected to decrease. Government cost-share to support transportation is currently available. Contact the local Soil and Water Conservation District Office for details.

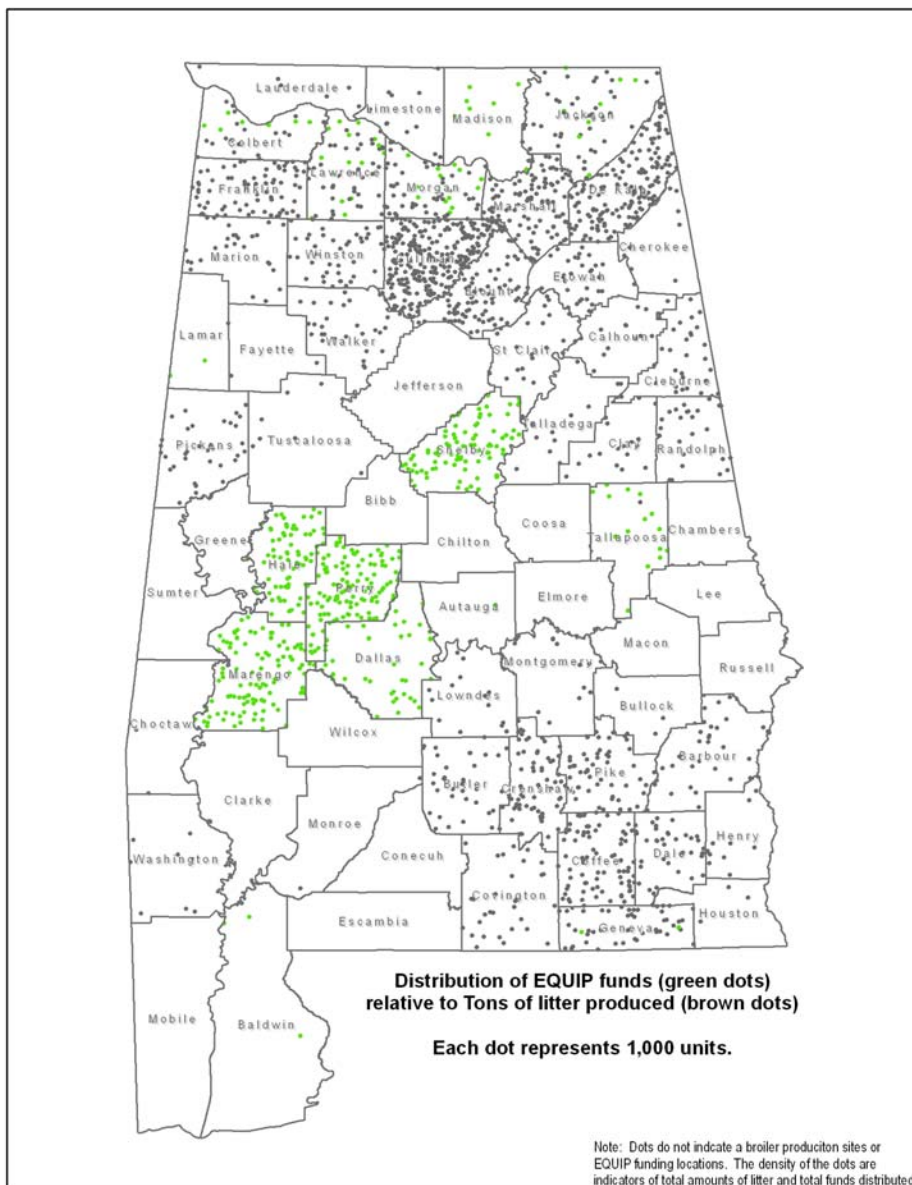


Fig. 3. Distribution of poultry litter production and EQIP funds for transportation of poultry litter in 2006. (Figure developed by Donn Rodekohr, Agronomy & Soils, from data provided by USDA-NRCS.)

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