Conflict at the Rural/Urban Interface:
Nuisance Complaints & Mushroom Farms in Chester County

Timothy W. Kelsey and Loretta Singletary - *Department of Agricultural Economics and Rural Sociology, The Pennsylvania State University*

National trends suggest that suburbanization affects the number, size, and type of farms in urbanizing areas. Suburbanization means more small, part-time farming. Part-time recreational farmers can outbid prospective full-time farm operators for the shrinking supply of agricultural land. Metropolitan farms are less likely to engage in traditional agriculture, like dairy, cash grain, or beef farming. Instead they compete with other urban land uses by including high value products such as pick your own operations and roadside stands, and relying heavily upon rented land.

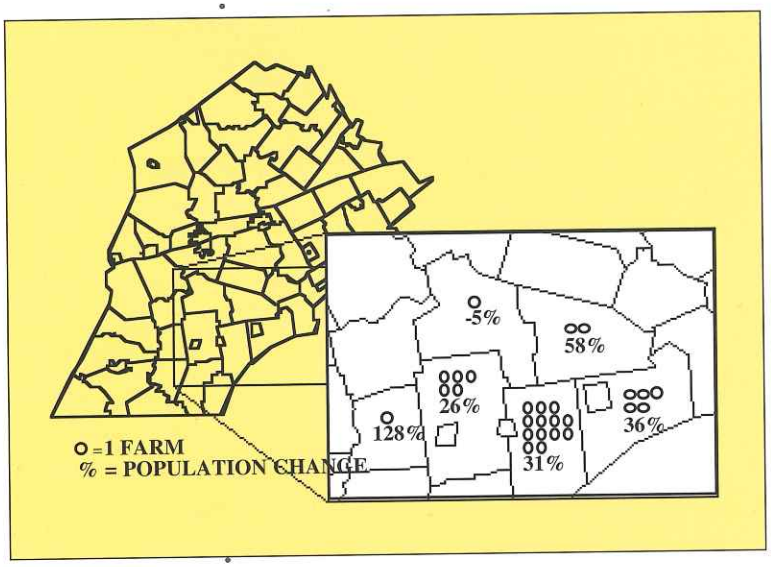


Figure 1: Number of Mushroom Farms Compared to Population Change from 1970 to 1990.

Suburbanization increases marketing opportunities for high-value agricultural products and can provide more seasonal or part-time labor to harvest these crops, but it can also create difficulties for traditional farms. Higher local taxes and restrictive local ordinances can hurt farms. Vandalism from nonfarming neighbors also can be a big problem for farmers.

Nuisance complaints from nonfarming neighbors can have especially detrimental effects on farmers in suburban areas. Nuisance complaints can lead to municipal ordinances restricting agriculture. These complaints can also be a factor in farmers' decisions to change their type of production or to leave farming. Right-to-farm laws may protect farmers legally from complaints but in general they do not protect farmers from the headaches, stress, and expense of defending themselves from complaints.

What increases the likelihood a farm will receive nuisance complaints is important to investigate because it highlights which farm types may have the most difficulty adjusting to suburbanization, and which farm characteristics could be altered to increase the likelihood of farm survival. There have been only a few such studies. A New Jersey study found the size of the farm was the most important determinant of whether the farm received complaints. They could not find complaints strongly linked to urban pressure, even though other studies have suggested conflicts result from urban pressure and leapfrog development.

The experience of mushroom farms in Chester County, PA, provides an interesting case of suburbanization and nuisance complaints. Mushroom farming is one of Chester County's most important and lucrative agricultural activities, but it is increasingly becoming a target of nonfarming neighbors. Some growers fear that development may force them to quit production or move their operations. At the same time, there is widespread support in the county for farmland preservation.

Because of the population pressure from Philadelphia, PA, and Wilmington, DE, Chester County has been growing rapidly. The population increased almost 19 percent between 1980 and 1990, and 35 percent between 1970 and 1990. Much of the development in the mushroom growing parts of the county are high priced, executive homes.

The county is the most productive mushroom producing county in the United States, a result of its location close to Philadelphia, Baltimore, and New York City. Horse manure is an important component in mushroom production and before the advent of motor vehicles, draft horses in these cities provided a cheap and abundant

source of manure to the county's farmers. Chester County accounts for more than half of Pennsylvania's mushroom production and approximately 20 percent of national production.

Mushroom production does not conform to general stereotypes of farming. Most mushrooms are grown in a compost produced using chicken and horse manure, hay and/or straw, and minerals. Mushroom farmers either produce this compost themselves in large windrows or purchase it from other farmers. Compost is placed in tiered beds inside light, temperature and humidity controlled buildings. Mushroom spawn is mixed into the compost which starts the growing process. Mushrooms must be harvested daily. Production occurs year-round and the number of employees is fairly constant.

The composting process closely resembles municipal composting operations and requires large, flat open areas and heavy machinery to turn the windrows. The components and biology of composting produce odors, but these typically are little different than those found on livestock farms. The machinery generates noise, and rain may produce runoff from the windrows.

Because the tenor and tone of the complaints have been increasing lately, growers have become especially concerned about the complaints. The growers informally have felt that composting was the cause of many of the complaints, so some have begun exploring noncounty sources for compost. There has been no objective evidence about the causes of the complaints, however.

MAIL SURVEY TO MUSHROOM FARMERS

To learn about the complaints mushroom farmers in Chester County receive, a mail survey was sent to all the mushroom farmers in the county in 1994. The list of farmers' names was acquired from the American Mushroom Institute and was restricted to mushroom farmers located in Chester County. The sample frame included 54 mushroom farms.

Completed surveys were received from 28 mushroom farms. Three other farms were no longer in business, and one additional farm was not located in Chester County. The response rate was thus 56 percent. Farms responding produce a total of approximately 107 million pounds of mushrooms annually, which is about 67 percent of Chester County mushroom production.

FARM SIZE

The average farm produced 4.2 million pounds of mushrooms annually, but production varied between 350,000 and 30 million pounds. The average square feet of production space was 2.14 million feet per farm. The farms who make compost averaged 40,983 tons of compost production annually. There were an average of 50 full-time and 6 part-time employees per mushroom farm.

THE FARMS AND POPULATION GROWTH

Most Chester County mushroom production is concentrated in a few townships clustered near the Delaware border. Half of the respondents were located in New Garden Township, while the others were spread among only five other townships. These six townships had greater population growth between 1970 and 1990 than did Chester County (a 40 percent increase in population versus a 35 percent increase), bringing more

nonfarmers into close proximity to the mushroom farms. The population in these townships increased 13 percent between 1980 and 1990.

MORE NEARBY HOMES

The number of nonmushroom farm homes, homes that are not occupied by mushroom farmers or their employers, near the farms also increased during this period. In 1984, only 19 percent of the mushroom farms had more than 50 such homes located within a quarter mile of their operation. By 1994, 40 percent of the farms faced that density.

Over 60 percent of the mushroom farms were located in the lowest density neighborhoods in 1984, but this had decreased to 44 percent in 1994, a drop of almost one third (see Figure 3). The percent of farms located close to over 100 homes increased fourfold, going from four percent of all farms to 16 percent.

COMPLAINTS ABOUT THE FARMS

Forty-one percent of the farms reported receiving complaints from their neighbors. The complaints included concern about odors, noises, runoff, and the ethnicity of their employees (see Table 1). Eight of the farms received complaints about more than one concern. Of the farms receiving complaints, on average three complaint types per farm were received. One farm received

Table 1:
Type of Complaints Received.

Complaint	Number of Farms	Percent of Farms*
Compost Odors	6	21
Manure Odors	1	4
"Unsightly" Land Use	1	4
Truck Noise	4	14
Tractor Noise	3	11
Noise from other Machinery	3	11
Late Evening Noise	1	4
Early Morning Noise	4	14
Water Runoff	7	25
Litter	1	4
Ethnicity of Employees	3	11
Treatment of Employees	2	7

** Does not add to 100 percent because some farms received multiple types of complaints.*

nine different types of complaints (see Table 2).

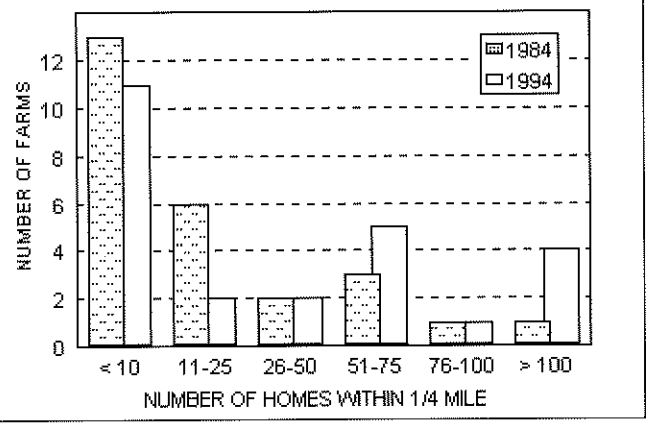
FACTORS RELATED TO WHETHER A FARM RECEIVED COMPLAINTS

Several types of statistical analysis were used to help identify key factors affecting whether a farm received a complaint. The key factors included the size of the farm, the number of neighboring homes, and increases over time in the number of neighboring homes.

Table 2:
Number of Complaint Types Received by Farms.

Number of Complaint Types	Number of Farms	Percent of Farms
0	15	56
1	4	15
2	2	7
3	2	7
4	2	7
7	1	4
9	1	4

Figure 2:
Number of Farms, by Number of Neighboring Homes.



FARM SIZE

Larger farms (measured either as square feet of production space or pounds produced) were more likely to receive complaints than were smaller farms. All farms with over four million pounds of production received complaints, for example, compared to only 25 percent of the farms with less than one million pounds of production (see Figure 5).

THE NUMBER OF NEIGHBORING HOMES

The density of houses around the farm also was related to whether a mushroom farm received complaints. All the farms with more than 75 homes located within a quarter mile received complaints, compared to only 30 percent of the farms with less than 10 homes nearby and none of the farms with between 11 and 25 homes within a quarter mile (see Figure 7).

Sixty percent of the farms in high density neighborhoods

Figure 3:
Percent of Farms, by Number of Neighboring Homes.

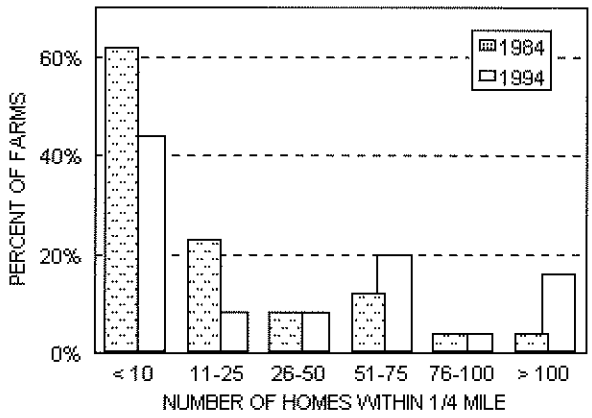


Figure 4:
Annual Production, by Number of Farms.

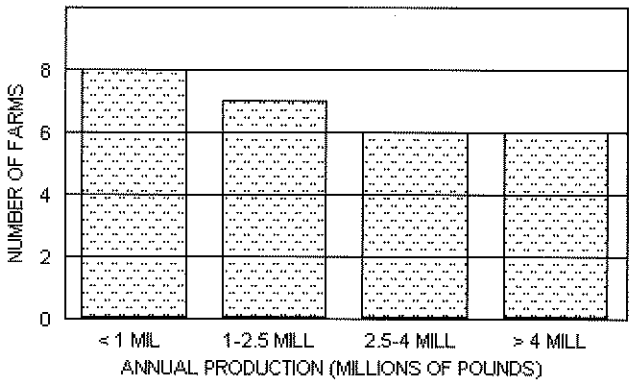


Figure 5:
Percent of Farms Receiving Complaints, by Production.

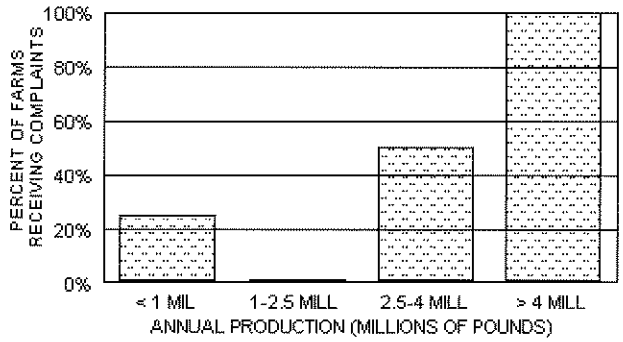
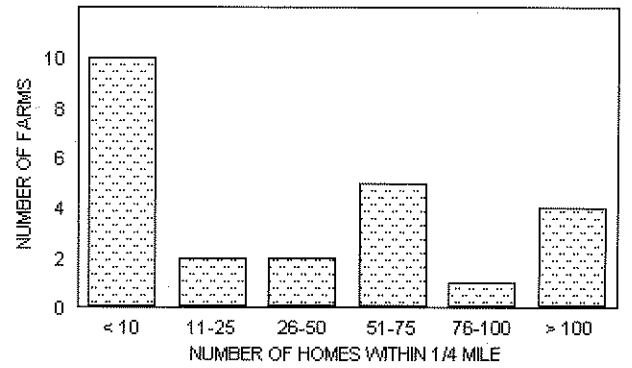


Figure 6:
Number of Farms, by Number of Neighboring Homes.



received more than two different types of complaints, while none of the farms in lower density neighborhoods received more than two (figure not shown).

INCREASES IN THE NUMBER OF NEIGHBORING HOMES

Not suprisingly, farms located in areas where the number of houses had increased dramatically over the last 10 years also were more likely to receive complaints. All of the farms located in areas where the number of homes had increased dramatically received complaints, compared to only about 32 percent of the farms where no growth occurred. The change in the number of homes was measured by the change as outlined in the survey response category; respondents indicated generally how many homes were nearby (less than 10, 10 to 25, 26 to 50, 51 to 75, 76 to 100, or more than 100). If a farm went from having less than 10 homes near it 10 years ago, to having between 51 and 75 homes near it today, for example, complaints increased by three categories (see Figure 9).

COMPOSTING WAS NOT RELATED TO COMPLAINTS

The analysis suggested that composting at the farm site by

(story continues on page 22)

Figure 7:
Percent of Farms Receiving Complaints, by Number of

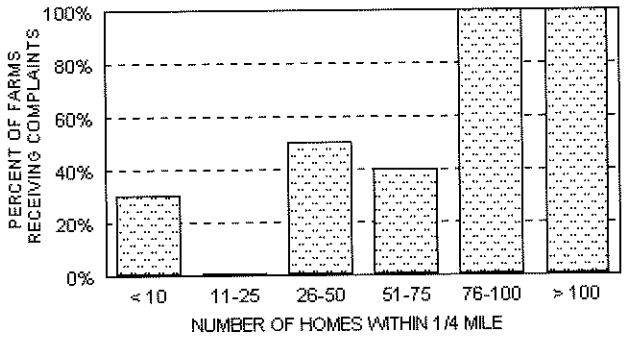
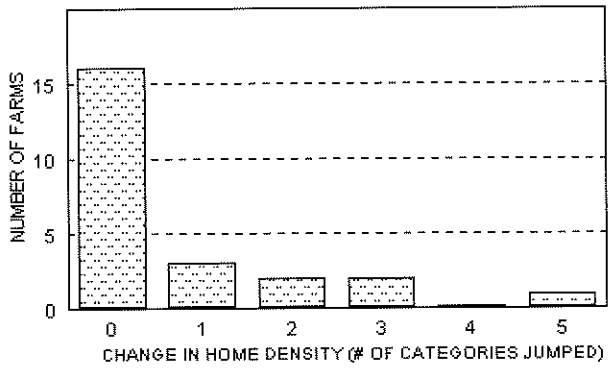


Figure 8:
Number of Farms, by Changes in the Number of Neighbors.



itself does not significantly increase the likelihood that a farm will receive complaints. This initially is surprising because some mushroom farmers have identified composting as the major source of conflict with neighbors. But because larger mushroom farms are more likely to compost and be located in the most rapidly growing areas, these results suggest that the complaints such farms receive are more the result of their size and location in relation to nonfarmers than of composting itself. Composting may simply provide an easily identifiable target for nonfarm neighbors who would complain about the farm operation anyway.

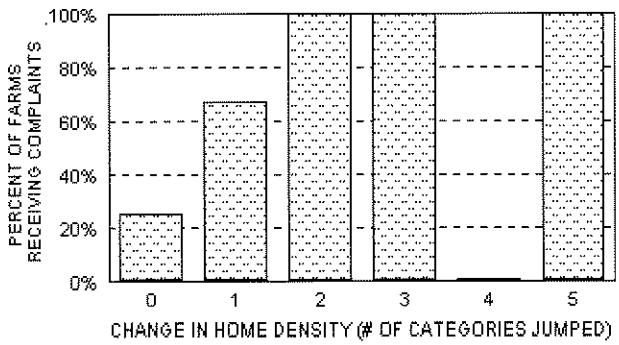
IMPLICATIONS OF THESE RESULTS

These results are consistent with other studies which suggested that conflicts arise from urban pressure and leapfrog development. David Vail (1987) says "while suburbanization does not necessarily mean the end of farming, it does reinforce a transformation of farm structure and the fabric of rural communities." The results of this study demonstrate that mushroom farms in Chester County are affected by the growth of nonfarm homes in their vicinity. Clearly the fabric of the communities is being changed by the in-migration of nonfarmers; the question is what will be the long run impact on the farms of such in-migration and complaints.

Based upon the experience of other suburbanizing communities and the results of this study, it appears that continued growth pressures do not bode well for Chester County mushroom farms. The community conflicts over mushroom farming likely will not be decreased by reducing local composting. More housing development bringing nonfarmers into closer contact with farms will only exacerbate the situation, whether or not the compost is produced locally.

Seventy-two percent of the farmers agreed or strongly agreed

Figure 9:
Percent of Farms Receiving Complaints by Change in Number of Neighbors.



that their local government favors local homeowners (compared to about 18 percent who disagreed and 10 percent who were undecided), suggesting that the farmers already perceive the local governments as being overly supportive of homeowners in this conflict. Regulatory restrictions on mushroom production could easily be the end result in some municipalities.

Whether the complaints will actually lead to new ordinances or mushroom farmers changing their operations, relocating, or deciding to leave farming could not be investigated in this study because only current farmers were surveyed. Studies have found such a relationship with complaints in other agricultural sectors, so there is little reason to expect the relationship to be much different with mushroom farms.

The situation of the mushroom farmers is ironic; at the same time neighbors are complaining about the mushroom farms, there is widespread support in the county for farmland preservation. In 1989, for example, the county had a nonbinding referendum about whether the county should issue $50 million in bonds specifically for farmland preservation. It passed with 80 percent of the vote approving.

While the public wants to keep suburban farmland, it can simultaneously drive traditional farmers and farming out. Without finding ways to help nonfarming neighbors coexist with farmers, Pennsylvania may simply be protecting farmland without necessarily changing or slowing suburbanization's transformation of agriculture. **MN**

REFERENCES

Vail, David. "Suburbanization of the Countryside and the Revitalization of Small Farms." In W.H. Lockeretz, ed. Sustaining Agriculture Near Cities. Ankeny, IA: Soil and Water Conservation Society, 1987, pp. 32-36.