

Identifying Spatial Clusters within U.S. Organic Agriculture

A Final Report Prepared for:

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Statement of the Problem and Project Goals:

Organic agriculture has experienced rapid growth in recent years. However, this growth has not been spatially uniform, suggesting that some form of clustering may be occurring within the industry. This study sought to analyze the spatial nature of organic agriculture and determine if spatial concentration was occurring within this specialized sector of the agricultural economy. Where and how organic operations are distributed across the U.S. was examined, identifying areas with high concentrations of organic farms, organic acreage, and organic sales and county level clusters in organic agricultural production.

Study Findings:

Findings suggest that clustering is occurring within organic agricultural production. Measures of global concentration employed in this study show a similar pattern of moderate clustering in the distribution of organic farms, increased concentration when production is measured using organic acreage, and strongest concentration when production is based on the value of organic sales. These results are further supported by location quotient (LQ) analysis. Consistent with previous findings, production appears to be greatest in the Northeastern and Western regions of the U.S., specifically, the west coast states of California and Washington, and New England states, including Vermont, Maine, and New York.

Organic production clusters as measured by the local Moran's I statistic followed a similar pattern, clustering primarily in the western U.S. with additional High/high clusters found in the Great Plains, upper Midwest, and areas of New England. When these values were adjusted to represent organic agriculture's percentage of a county's total agriculture, central cluster counties were most likely to be found in New England.

Locational correlation analysis shows that co-location of organic production and an organic support establishment is most likely to occur in counties with a large percentage of their total farm operations and agricultural sales in organic. However, the frequency of these establishments decreased as counties' organic acreage increased. Examining California and New England cluster counties separately suggests that the organic industry may be operating differently in these two regions.

Study Recommendations:

This research provides further evidence for clustering activity in agricultural sectors and helps to strengthen the argument that any industry/sector can benefit from cluster activity. Findings presented in this study suggest that organic agriculture may be an ideal strategy for farmland preservation in and around urban areas. These areas not only provide organic producers access to markets, but organic price premiums allow farmers to remain competitive in the face of rising land prices and development pressures. Additionally, the presence of organic clusters may help reduce the risk associated with transition from conventional to organic production, and could be especially important for state and local governments, organic growers associations, organic certifiers, etc., who wish to understand and define borders for future organic agriculture zones free of GMOs, such as those proposed in Vermont and already established in several California counties.

More research is necessary to assess the different levels of cluster development, and determine factors that were operating in the past and/or are presently driving organic agglomeration within these areas. Perceived differences between organic operations in different regions of the U.S. highlights the need for further research into the factors which drive conversion to organic production and influence the formation of clusters in organic agriculture, and reinforces the diverse nature of organic farms, producers, products, and markets. Additional information, on the regional level, concerning local consumers' tastes and preferences for organic products and whether demand for these foods is based on a specific value system would be helpful to better understand an organic cluster's input-output relationships and how they might vary by location. Most importantly, additional details regarding how producers are interacting within identified clusters is necessary. Of particular interest is whether producers located within clusters are operating independently of one another, or are working together to facilitate growth, promote policies, or attract other members of the supply chain in ways that will improve the economic performance of their own operation and the larger cluster as well.

Study Dissemination:

Preliminary findings from this study were presented in a selected paper session at the Northeastern Agricultural and Resource Economics Association Conference in Mystic, CT, June, 2006. A manuscript was submitted for consideration to the *Review of Agricultural Economics* in July 2006. A working paper is submitted along with this final report to the Regional Research Institute.