



Socio-economic Characteristics of Horticulture Firms in the Northern Gulf of Mexico

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Nature of Work. This socioeconomic (SEC) project is a part of a research program currently being undertaken by the Mississippi Agricultural and Forestry Experiment Station and the U.S. Department of Labor entitled "Enhancing Labor Performance of the Green Industry in the Gulf South." The overall goal of this SEC project is to develop a socioeconomic profile of horticulture workers and to evaluate the impact of automation technologies on their employment, earnings, safety, skill-levels, recruitment and retention rates (1). This paper presents the socio-economic characteristics of nurseries located in the Northern Gulf of Mexico region which participated in the survey conducted in December 2003 to March 2005. A total of 87 Nursery Automation Survey Forms (NASF) were completed from personal interviews with horticulture firms randomly selected in Mississippi, Louisiana and Alabama. The participating nurseries were randomly selected from the lists of wholesaler nursery growers from each of the three states included in the 2003-2005 survey.

Results and Discussion. The 87 nurseries included in the survey reported a total of 1,804 acres or an average of 21 acres per nursery. The total open field production area was 926 acres while the total greenhouse production area was 2.86 million sq. ft. Most of the participating nurseries were either single proprietorships (52%), corporations (30%), or partnerships (8%). Majority of the nurseries included in the survey reported annual gross sales of less than \$250,000 (57%), 19% sold between \$250,000 and \$499,999, 12% grossed between \$500,000 and \$999,999, and the remaining 12% reported more than \$1 million annual gross sales.

The total number of workers employed by the 87 participating nurseries was 596 persons or an average of 7 workers per nursery. Majority of the workers were male (66%). The race composition of the workers were White (50%), Hispanic (33%) and African American (16%). The age distribution of the workers were as follows: 18-29 years old - 35%, 30-39 years old - 23%, 40-49 years old - 25%, 50-59 years old - 12%, and 60 years old and above - 6%. Workers with less than high school education comprised 31% of all the workers, 52% had high school diploma, and the remaining 18% either had an associate, college or advanced degree.

One-third of the participating nurseries reported hiring non-English speaking workers ranging from 25% to 100% or about 64% of their workforce. In order to improve communications between management and non-English speaking workers, managers learned to speak secondary language (57%) and workers learned to speak English (43%). Among the new workers hired by the participating nurseries, 52% were considered as having basic horticultural skills. About 88 percent of the current workforce in the participating nurseries were working in the same nurseries the year before. The new migrant workers employed by the participating nurseries were hired either through the existing teams of migrant workers or through an employment agency.

Three-fourths of the participating nurseries stated that labor for the nursery industry was available or highly available. The other 25% of the nurseries thought that labor for the industry was unavailable or highly unavailable. On the average, the participating nurseries employed 5 permanent workers and 2 part-time workers per nursery. The breakdown of labor cost by major nursery functions were as follows: harvesting and grading - 22%, general maintenance - 18%, pot/tray filling - 14%, sticking cutting/planting seed - 12%, fertilizer/pesticide application - 9%, irrigation application/management - 9%, environment control - 5%, media preparation - 4%, cutting/seed preparation - 4%, and cutting/seed collection - 3%. During peak season, work hours averaged 9 hours per day or 50 hours per week. Work hours declined to 7 hours per day or 35 hours per week during off season. The gross wage rate (basic rate + overtime) reported by participating nurseries averaged \$7.70 per hour.

The participating nurseries reported that almost all of their employees (98%) were aware of the danger associated with exposure to chemicals and pesticides. About 37 percent of the nursery workers were engaged in the handling of chemicals and pesticides. About 1.2 percent of the participating nurseries reported incidents wherein their workers were involved in chemical and pesticide-related injuries and illness. More than 94 percent of the workers who were handling chemicals and pesticides were equipped with personal protective equipment. About 29 percent of the nursery workers were sent for training on chemical and pesticide application.

Nurseries provided in-house training on basic horticultural skills to 38 percent of their workforce. The in-house training lasted up to 100 hours per year or an average of 11 hours. According to the Occupational Information Network prepared by O*Net Online (2), the tasks nursery workers perform include:

- Hauls and spreads topsoil, fertilizer, peat moss, and other materials to condition soil, using wheelbarrow or cart and shovel.
- Digs, rakes, and screens soil and fills cold frames and hot beds to prepare them for planting.
- Sows grass seed or plants plugs of grass and cuts, rolls, and stacks sod.
- Plants, sprays, weeds, and waters plants, shrubs, and trees, using hand tools and gardening tools.
- Cuts and opens incision in rootstock, using budding knife, and inserts and ties bud.
- Fills growing tanks with water.
- Inspects bud tie to ensure quality.
- Moves containerized shrubs, plants, and trees, using wheelbarrow.
- Traps and destroys pests, such as moles, gophers, and mice, using pesticides.
- Ties, bunches, wraps roots, and packs flowers, plants, shrubs, and trees to fill orders.

Nurseries reported that their workers had access to rest and lounging areas (95%) and sanitation facilities and drinking water (96%). About 15 percent of the workers were provided with housing benefits. Dental and medical insurance were provided to 7 percent of the workers. One out of ten workers were provided retirement plans.

A total of 32 cases per year of work-related injuries were reported by the participating nurseries or an average of 0.4 case per nursery. These injuries resulted to a total of 887 man-hours lost per year or an average of 11 man-hours per nursery. The most common accidents or injuries occurring in the nurseries were back strains (37% of nurseries) and cut fingers (43%).

Significance to the Industry. Sustaining the growth of the nursery industry requires a steady supply of reliable workforce capable of performing several horticultural tasks including planting, cultivating, harvesting, and transplanting trees, shrubs, or plants. The current workforce in the Northern Gulf of Mexico region consisted mostly of migrant workers who were hired either through existing teams of migrant workers or employment agency. The results of the survey will be used to evaluate the socioeconomic impact of automation currently used in container nursery production and greenhouse plant propagation on work force, nursery and greenhouse characteristics, and use of labor, capital, pesticides, chemicals and computers. The results of the survey will also show the differences in production levels and sales attributable to the differences in the levels of automation in the major tasks performed in nursery and greenhouse operations in the region. It is expected that with this information, growers can make informed decisions regarding nursery and greenhouse automation that would be beneficial to the nursery business and to its workforce.

Literature Cited

1. Posadas, B.C., G.B. Fain, C.H. Coker, P.R. Knight, C. D.Veal, and R.Y. Coker. 2004. Socioeconomic Survey of Nursery Automation. Proceedings of the Southern Nursery Association Research Conference, 49: 306-309.
2. O*Net Online. Occupational Information Network. (Verified June 1, 2005).

