ENTERPRISE BUDGETS FOR ORNAMENTAL CROPS IN PLANT HARDINESS ZONES 8 AND 9

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Working Paper Series # 2008-14
Department of Agricultural Economics and Agribusiness
Louisiana State University AgCenter
Baton Rouge, LA 70803

Index Words: production costs; enterprise budgets; product diversification; enterprise diversification; marketing strategies

This document and these budgets result from cooperative effort between the LSU AgCenter Experiment Station, Experiment Stations at Auburn University, the University of Arkansas, the University of Georgia, Mississippi State University and the University of Tennessee, and the Southern Region Risk Management Education Center. SRRME is administered by Texas Cooperative Extension of the Texas A&M University System with funds provided by USDA Cooperative State Research, Education and Extension Service's Agricultural Risk Management Education Competitive Grants Program.

These budgets were prepared in 2007. Their components - prices for inputs in particular - were based on surveys and on collection of some individual product prices from websites and other sources. Particularly for fuel and fertilizers, economic change over the past year has made these prices outdated. However, the data collection process will be repeated late in 2008 and early in 2009, and at that point the budgets will be updated with the new price information.

As an interim solution for updates, users can substitute prices they feel are appropriate, multiply by the quantities provided in the tables, and change the totals. For fuel, recently collected prices for fuel (by Mississippi State University) generated estimated prices of leaded and unleaded regular gasoline of $3.51, and for diesel of $3.68. These were for bulk purchases and did not include road use taxes.

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INTRODUCTION

Production and marketing of ornamental plants often is called the 'Green Industry'. Farm level sales from this industry have increased faster than most other segments of agriculture over the past 20 years. The economy has a strong impact on ornamental plant sales, but even in difficult economic periods consumers seem to view these products as affordable luxuries and the industry is seen as less vulnerable to economic factors. A national economic impact study for 2004 shows the 'green industry' provided about $147.8 billion in output, nearly 2 million jobs, about $26 billion in sales and $18.1 billion in value added (Hall et al. 2005).

The specific objective of this research was to estimate cost of production for selected container grown ornamental plants. In the document, we focus on production costs of selected woody ornamentals and perennials in Plant Hardiness Zones 8 and 9, on and close to the Gulf of Mexico and the lower Atlantic, from southern Texas and stretching across the southern halves of Louisiana, Mississippi, Alabama, Georgia, Florida, South Carolina and into North Carolina. The warm weather and short winters in these hardiness zones provide a long growing season that has encouraged growers to move to and expand plant production.

Woody ornamental plants (shrubs and trees) are produced on farms referred to as nurseries, while flowering and foliage plants usually are produced in greenhouses. The Cost of Production (COP) budgets developed here are for outdoor plant production in above-ground plastic containers. Procedures and underlying assumptions used in generating production cost budgets for container-grown ornamental plants are documented and explained. Enterprise

budgets are an important component of a grower's information base at several levels, including choices involving risk, crop mix, expansion, and pricing and price negotiations.

Plants selected for budget creation are chosen to represent groups of plants where similar production practices, inputs and labor rates are appropriate. The budgets are based on common cultivars, and the plants are:

- Indica azalea (*Rhododendron indicum;* example cultivars – 'Formosa', 'G.G. Gerbing')
- Crape myrtle (*Lagerstroemia indica* x *fauriei;* example cultivars – 'Natchez', 'Tuscarora')
- Liriope (*Liriope muscari*; example cultivar – 'Big Blue')
- Southern live oak (*Quercus virginiana*)
- Lantana (*Lantana camara*; example cultivar – 'New Gold')
- Fig (*Ficus carica*; example cultivars – 'Celeste', 'LSU Purple').

PREVIOUS WORK

Perry et al. (1990) estimated COP budgets for field-grown woody ornamentals for climatic zone 9. Results were presented as capital requirements, production activities and inputs, and costs, for 20 acre and 40 acre production nurseries. Budgets were created for individual plants as representatives of a group of similarly managed plants. Budgets for azalea, narrowleaf evergreen (Juniper), broadleaved evergreen (Euonymus), deciduous shrub (Forsythia), and deciduous tree (red maple and pecan) were included. For each plant, the (i) the sequence of operations required for production of the plant, (ii) machinery and equipment requirements for the activities, (iii) operating inputs along with rates and costs, and (iv) labor required were estimated. The overall COP process was placed in the context of a complete nursery operation, and these plant groups were the basis for analysis. More recently, McNeil (University of

Kentucky) incorporated a similar approach but used a spreadsheet to calculate production costs and produce reports, similar to Perry's, to for woody ornamentals in containers in hardiness zones 5 and 6.

COP budgets were estimated for field-grown woody ornamentals for hardiness zones 5 and 6 for slow- and rapid-growing evergreens, deciduous shrubs, shade trees and ornamental trees produced on 50 and 200 acre nurseries (Taylor et al. 1986). As with Perry's work, plants were grouped by similarity of production activities and management practices on the nursery. Generally, the research above followed a general procedure that can be traced to work by Badenhop (1979) and Badenhop and Phillips (1983).

METHODS

Due to the detailed nature of cost computations for enterprise budgets, the Mississippi State Budget Generator (MSBG, version 6.0) was utilized. MSBG provides a standard format for crop and livestock budgets. Its computational procedures are widely accepted, and the procedure can be updated easily for budgeting or for considering alternative farm situations. MSBG consists of a computer program which specifies a system of computational procedures for calculating costs and returns. A copy of MSBG can be downloaded from the website of the Department of Agricultural Economics at Mississippi State University (http://www.agecon.msstate.edu/laughlin/msbg.php). Files required to run these budgets are available from the website.

MSBG has multiple functions, but in this application individual enterprise budgets were generated. As a base for analysis, we assumed a nursery operation of 10 acres in plant production and 10 acres of service area such as buildings, roads and loading area. Growers are assumed to be landowners, managers and laborers. They are also assumed to be experienced producers and to generally follow University/Extension recommended production practices.

To prepare a budget, the user must specify what activities occur, when they occur, the machinery or equipment used, and the operating inputs included. Economic engineering was chosen to approach this problem, based on the idea that a planning budget can be prepared with acceptable precision through consultation with knowledgeable individuals and experts in the industry. These budgets were prepared based on the knowledge and experience of Extension horticulturalists and agricultural economists from participating states. Through this process, a set of activities and associated inputs that represent a general production situation in hardiness zones 8 and 9 was identified. Specifically, production practices, inputs, input rates, machines used and machinery performance rates were specified by Extension Specialist Allen Owings (LSU AgCenter) and Richard Harkess (MSU horticulturalist). These were verified for correspondence to real production situations by presenting the budgets and their supporting assumptions to a panel of growers from the central gulf coast region at a meeting in Mobile, AL. The panel provided feedback on production activities and inputs. As a result, modifications modifications were made that ensured the applicability of the work. At a later stage, preliminary copies of the budgets were distributed in the winter of 2008 to project participants for use in extension meetings with growers. No suggestions for revisions were received from growers' review of the budgets. The activities and crop protection product rates specified below tended to look like those that would typify zone 9. These would be slightly different in zone 8. The prices included in these files are appropriate to commercial production, and were collected from specialized suppliers serving the industry in 2007.

These budgets represent a logical system of production currently in use by producers. However, many other combinations of activities, products and performance rates are possible and would result in different estimates of cost. Once the basic budget has been created, these

budgets can be altered to represent other general situations or to tailor the budget to a specific farming operation.

Data Files. Several data files, including powered equipment, implements, other durable equipment, and operating inputs, are created. The user specifies and is responsible for selection and appropriateness of data used to prepare a budget, such as interest rates, performance rates and input prices. A conservative approach in making decisions about values in the data files is appropriate. An example of this conservativeness is that we used new machinery and equipment prices. Fixed costs are higher because interest charges and depreciation are calculated from the purchase price. Some growers may feel that their costs are lower because they purchased 'used' rather than new machinery, or they might be using older, depreciated machinery. These arguments are reasonable, but the assumption of new machinery is appropriate for planning or for establishing benchmark costs.

The 12-month Budgeting Period. The budget period in MSBG is limited to a 12 month period that can begin and/or end in any month. Production cycles that last more than one year must be constructed as a series of single year budgets. For this reason, the 1 and 3 gallon Azalea, the 3 gallon Crape Myrtle, and the 7 gallon Live Oak were calculated as a 'production' phase budget that included planting and growing activities, and a 'harvest' budget that usually included a fall harvest, winter maintenance, and spring harvest. The crop cycles budgeted here were about 18 months long, beginning with planting in October, continuing to a small harvest in the following fall season, and continuing with winter maintenance activities and major harvest through the next March. As an example, Azalea budgets might begin in October, 2007 and finish with harvest activities in 2009. Other budgets had different budget periods depending on the production cycle.

Assumptions

Capital. While most growers use their own capital to fund long term investment and operating expenses, we include interest charges for working capital and for investment in machinery and equipment. Allocated costs and interest charges for investment in land and improvements are not included.

Labor. Growers and their family members provide some of the labor force. Additional labor is assumed to be hired by the hour as required to get activities completed in a timely manner. Hired employees usually are a combination of full time and part time. All hours required for production activities are charged to the enterprise. Labor for general work is charged at $9.60 per hour for all labor, which includes a $7.50 per hour basic wage rate plus additional costs (27.65%) for social security, Medicare, and workman's compensation (6.2%, 1.45%, 20%). Manager labor was charged at $15.30 per hour, which includes a basic wage rate of $12.00 per hour plus additional costs (27.65%) for social security, Medicare, and workman's compensation (6.2%, 1.45%, 20%). The higher wage rate was charged for managers because of the relatively higher skills required (Salassi and Dileberto 2008).

Machinery. Machinery size affects operating and overhead costs. We assume that the 10 acres of production space comprises the bulk of agricultural activities and guides the choice of machinery items and their size. Generally, nursery activities do not involve heavy agricultural work such as soil tilling. Some combination of diesel tractors in the 20 and 35 horsepower range, and one tractor of about 50 hp, would be found on the nursery. Specialized pieces of equipment include wagons, machines to assist in potting, an air-blast sprayer unit, and irrigation. These machines are purchased and used through their productive life, with salvage values and 'repair and maintenance' percentages reflecting this assumption. We assumed that each enterprise budgeted was part of an ongoing production facility and machinery and equipment costs are

spread across other enterprises. Machine costs on a per hour and per acre basis are in the appendix of this report.

Irrigation. Overhead irrigation is the standard water delivery system for small containers (7 gallons or less) in commercial ornamental production. The water source was assumed to be a well of about 200 feet (this would vary according to location). Power was supplied by a 5 hp electric pump, with backup from a tractor power take-off. Water was pumped directly onto the crop or into a pond, depending on need and well production capability. Custom installation of the irrigation system, including service to the field and layout in the field, was assumed. Appropriate filters and underground piping from the well to the head of the field were included. The costs for installation and materials, including lateral lines, risers, heads, other miscellaneous expenses, totaled about $51,500, or about $5,150 per acre. The system was specified and priced by a commercial firm with extensive experience in selling and installing irrigation systems for a variety of agricultural applications, including nurseries.

The irrigation system was designed to serve the nursery at the seasonal rates specified in Table 1. Pumping costs were included in the budget by season. As an example, in the 1 gallon Azalea budget, an operation in October represents irrigation for the fall season, with a total of 29 acre inches of water applied over a 60 day period. Cost per acre inch was $3.92 (Table 2).

Table 1. Water requirements and Calculation of Pumping Hours* in USDA Hardiness Zones 8 and 9, for Eight Ornamental Plant Budgets, 2008.

	Seasons		
	Summer (June 1 to Sept 30)	Spring (March 1 to May 31), and Fall (Oct 1 to Nov 30)	Winter (Dec 1 to Feb 28)
Total days in the season	120	150	90
Irrigation days	110	120	60
Gallons per day per acre	20,000	15,000	7,500
Total gallons	2,200,000	1,800,000	450,000
Pumping rate per hour	25,000	25,000	25,000
Hours per acre	88	72	18

* Source: LSU Ornamental Plants Specialist

Table 2. Calculation of Irrigation Costs per Acre Inch in USDA Hardiness Zones 8 and 9, for Eight Ornamental Plant Budgets, 2008*.

Item		Annual costs
Production area irrigation materials and installation	$4,272.00	
Depreciation, straight line over 10 years	$427.22	
Repair and maintenance, 50% annually	$213.61	
subtotal		$640.83
Providing water to the field	$754.00	
Depreciation, straight line method over 20 years	$37.70	
Repair and maintenance, 10% annually	$7.54	
subtotal		$45.23
Well, 6", total drilling costs estimated $6,000	$600.00	
Depreciation, straight line method over 10 years	$20.00	
Repair and maintenance, 10% annually	$4.00	
subtotal		$24.00
Pump, 5 hp electric, total cost $1,240	$124.00	
Depreciation, straight line method over 20 years	$6.00	
Repair and maintenance, 10% annually	$1.20	
Electricity, 5 kilowatts/hour	$0.40	
subtotal		$7.44
ANNUAL REPAIR AND MAINTENANCE COSTS		$226.39
ANNUAL DEPRECIATION		$491.12
TOTAL IRRIGATION SYSTEM COSTS/ YEAR		$686.77
IRRIGATION SYSTEM COSTS PER ACRE INCH (188 inches)		$3.92

* Source: University engineers and commercial irrigation firm

The irrigation system and costs used here were specified by an experienced provider of agricultural systems. Other irrigation designs also could be appropriate for a container nursery.

Planting. We assumed that liners were purchased rather than grown on the nursery. Azalea liners in rose pots at a cost of $0.50 each are an example. In some cases, 2 liners per pot were used, and a gallon-sized liner was used for the 7-gallon container product. We assumed planting would happen in a central facility, not in the field. Transplanting was assisted by a 2 cubic yard capacity mixing machine and a potting machine with operating capacity of 3,000 containers per hour. However, we assumed that growers achieved a rate of 2,250 containers per hour for the one gallon container size. A team of approximately 8 persons served the machine. The production rate was slower for 3 gallon containers, and the 7 gallon container was hand-potted.

Liners were delivered to the nursery and placed in greenhouse or other storage areas, and were moved again to the potting area. After potting, cans were moved to the growing area by a utility vehicle towing 3 wagons, with a capacity of about 400 cans per trip for the 1 gallon size. A round trip was assumed to take 15 minutes. The team at the potting machine loaded cans onto the wagons. A crew in the field, assisted by a conveyor, unloaded the wagons into a 'can-tight' arrangement on the bed. These rates changed with container size, as specified in the budgets.

Weed Control. Weed control was established with a ground cover, and supplemented with complete-cover application of glyphosate before the production cycle started. Regular applications of herbicide were applied to growing plants, either with a cyclone-style spreader or a spreader mounted on a UV. Applications of branded products at the recommended dosage per acre and number of applications per year were intended to control expected problems. Inclusion of these specific products does not imply their endorsement.

Disease and Insect Control. Appropriately labeled fungicides and insecticides, intended to protect against a typical set of pests and diseases, were included in the budget. Inclusion of these specific products does not imply their endorsement.

Fertilization. Controlled-release fertilizers that provided typical nutrient requirements were included at two points. Fertilizer, micronutrients and lime were added to pine bark to create the growing medium. In the field, fertilizer was applied directly to pots on a schedule determined by the expected slow-release specifications of the product. Inclusion of these specific products does not imply their endorsement.

Frost protection. Frost protection is needed for some crops and areas, in some years. Twelve rolls are required to cover an acre. This product is expected to last 3 years, so an expense of 4 rolls each year was included. In the budget, we include a frost protection activity as Frost ON/off to indicate moving the blanket to the field, covering the crop, and removing when appropriate. We include Frost on/OFF to indicate uncovering the crop and moving the blankets back to storage. Weather conditions could make more coverings/uncoverings of the crop necessary.

Harvest. Harvest was in large part a reversal of taking plants to the field. Plants were picked up, placed on the conveyor, and loaded onto the 'wagon train' described above. Each load consisted of about 300 plants and each round trip was about 15 minutes. Plants were stationed to be accessible to the loading dock. We assumed that transportation would be by standard 40 foot trailer unit. Loading would be assisted by a conveyor, and a crew of 9 would load the trailer in 5 hours.

Land. Because this is an enterprise budget, some expense items that are part of general farm operations were not included. Land is an expense that might be based on ownership, lease, or other arrangement. **Because there is extensive variation in land value across the**

production region, a land cost was not included. A user of this information should determine and include an appropriate cost for land, even if only to highlight the opportunity cost of the resource.

Selling or marketing costs. **Selling, delivery expenses, and office and administrative costs were not included.** We assume the grower handles sales and general administrative activities outside the production activities specified here.

RESULTS AND CONCLUSIONS

A summary of results by crop and container size is presented in Table 3. Summary tables for each budgeted situation, in terms of prices, input costs and resource use, are presented in tables 4 through 10. Differences were in the pace of work and length of the production period. Lantana and Liriope had lowest cost because production was in a single growing season, and somewhat less intensive use of crop protection products was needed. The specific activities of the production cycle are documented in Appendix Tables 1 through 7, which contain estimated resource use and costs for field operations and present detail about when these operations and input use happen, machinery and performance rates, direct and fixed costs for power units and equipment, and total costs of the activity. When summed, these tables provide an estimate of total cost of the crop. The 1 gallon Azalea's production period was longer – the plant was in the production process for approximately 18 months, so more management activities were required. The 3 gallon container sizes – Azalea, Crape Myrtle and Fig – had production periods similar to the 1 gallon azalea, but multiple liners per container usually were planted to produce a fuller final product. In addition, the activities of planting, moving to production beds, and harvest were slower. These factors led to higher costs. And finally, the 7 gallon Live Oak tree had highest cost among these budgets. This result was from the liner size (1 gallon) and the hand-planting process.

These budgets can assist in risk analysis, and two brief illustrations follow. First, these cost estimates *provide a reference point*. Growers can compare their operational efficiency to this standard. This might be done by hand calculations, or by modifying MSBG's files to reflect the situation on a specific farm then running a budget based on those parameters. If those costs exceed the standard budget, then the entire operation and/or its individual activities might be evaluated to identify where processes and costs might be improved.

As a pricing application, suppose this series of operations, machinery, and inputs for the 1 gallon azalea seems appropriate for a grower, but that grower calculates his cost at $1.50. If a typical wholesale price for the plant is $1.60, this grower might think the crop is profitable. However, the $1.83 cost estimate here suggests further analysis. The grower might be 'living off depreciation' of machinery and other investments, and not generating an income stream that enables replacement. Or, the grower's estimate of labor cost might not account for all labor contributed by grower (family), while this budget charges an opportunity cost to all labor.

Budgets are one component of risk management, and should be used in conjunction with other management tools to handle risk.

Table 1. Summary of Estimated Costs per Acre for Selected Container-grown Ornamental Plants, 2008.

Crop	Cost by season, $/Acre			Cost /plant ($)	Cost @ 5% loss ($/plant)
	Production season	Harvest season	Total cost		
Azalea, 1 gallon	44,695	7,178	52,264	1.74	1.83
Azalea, 3 gallon	56,569	5,683	62,252	4.61	4.84
Crape Myrtle, 3 gallon	47,717	5,721	53,438	3.96	4.16
Live Oak, 7 gallon	39,918	5,318	45,236	6.46	6.79
Fig, 3 gallon	na	na	41,333	3.06	3.21
Lantana, 1 gallon	na	na	41,793	1.38	1.45
Liriope, 1 gallon	na	na	37,103	1.24	1.30

Table 4A. Estimated resource use and costs for field operations, per acre, **1 gallon Azalea in container**, 30,000 plants per acre, **production season budget**, overhead irrigation, purchased liner, USDA Plant Hardiness Zones 8 and 9.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
LABOR					
Labor	hour	9.60	482.5000	4632.00	_____
HERBICIDES					
Ronstar	50 lb	90.00	8.0000	720.00	_____
FUNGICIDES					
Mancozeb	pt	8.66	25.0000	216.50	_____
thiophanate methyl	oz	0.60	48.0000	28.80	_____
FERTILIZERS					
Dolomitic lime	lb	0.14	600.0000	84.00	_____
Micronutrients	lb	1.33	225.0000	299.25	_____
Osmocote 14-14-14	50 lb	65.00	18.0000	1170.00	_____
Osmocote 19-5-11	50 lb	60.00	36.0000	2160.00	_____
INSECTICIDES					
Horticultural oil	gal.	30.00	5.2500	157.50	_____
Acephate 75 WP	lb.	7.83	7.0000	54.81	_____
OTHER					
Pumping Cost/ac/inch	inch	3.92	164.0000	642.88	_____
PRODUCTION					
Ground Cover Cloth	roll	215.00	12.0000	2580.00	_____
Tractor per hour	hour	28.14	3.0000	84.42	_____
Frost prot. blanket	roll	277.00	4.0000	1108.00	_____
PLANTING					
Pine bark	cu yd	15.00	150.0000	2250.00	_____
1 gal containers	1000	250.00	30.0000	7500.00	_____
Liner Azalea	1000	500.00	30.0000	15000.00	_____
OPERATOR LABOR					
Tractors	hour	15.30	15.2500	233.34	_____
Labor					
Implements	hour	9.60	3.0000	28.80	_____
Tractors	hour	9.60	23.0000	220.80	_____
Self-Propelled	hour	9.60	95.4000	915.84	_____
DIESEL FUEL					
Tractors	gal	2.93	84.2474	246.86	_____
Self-Propelled	gal	2.93	38.5906	113.07	_____
ELECTRICITY					
Self-Propelled	kWh	0.15	238.0000	35.70	_____
GASOLINE					
Self-Propelled	gal	2.33	4.8000	11.20	_____
REPAIR & MAINTENANCE					
Implements	acre	38.89	1.0000	38.89	_____
Tractors	acre	34.27	1.0000	34.27	_____
Self-Propelled	acre	188.33	1.0000	188.33	_____
INTEREST ON OP. CAP.	acre	3120.29	1.0000	3120.29	_____

TOTAL DIRECT EXPENSES				43875.57	_____
FIXED EXPENSES					
Implements	acre	113.30	1.0000	113.30	_____
Tractors	acre	103.53	1.0000	103.53	_____
Self-Propelled	acre	602.75	1.0000	602.75	_____

TOTAL FIXED EXPENSES				819.58	_____

TOTAL SPECIFIED EXPENSES				44,695.15	_____

Table 4B. Estimated resource use and costs for field operations, per acre, **1 gallon Azalea in container**, 30,000 plants per acre, **harvest season budget,** overhead irrigation, purchased liner, USDA Plant Hardiness Zones 8 and 9.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
LABOR					
Labor	hour	9.60	314.0000	3014.40	_____
HERBICIDES					
Ronstar	50 lb	90.00	2.0000	180.00	_____
FUNGICIDES					
thiophanate methyl	oz	0.60	32.0000	19.20	_____
INSECTICIDES					
Horticultural oil	gal.	30.00	1.5000	45.00	_____
Acephate 75 WP	lb.	7.83	2.0000	15.66	_____
OTHER					
Pumping Cost/ac/inch	inch	3.92	62.0000	243.04	_____
PRODUCTION					
Frost prot. blanket	roll	277.00	4.0000	1108.00	_____
HARVEST					
Product Tag	1000	49.95	30.0000	1498.50	_____
OPERATOR LABOR					
Tractors	hour	15.30	2.5000	38.26	_____
Labor					
Tractors	hour	9.60	38.0000	364.80	_____
Self-Propelled	hour	9.60	21.2000	203.52	_____
DIESEL FUEL					
Tractors	gal	2.93	80.6472	236.32	_____
Self-Propelled	gal	2.93	12.4000	36.33	_____
ELECTRICITY					
Self-Propelled	kWh	0.15	240.0000	36.00	_____
GASOLINE					
Self-Propelled	gal	2.33	1.8000	4.20	_____
REPAIR & MAINTENANCE					
Implements	acre	24.67	1.0000	24.67	_____
Tractors	acre	43.20	1.0000	43.20	_____
Self-Propelled	acre	41.69	1.0000	41.69	_____
INTEREST ON OP. CAP.	acre	153.02	1.0000	153.02	_____

TOTAL DIRECT EXPENSES				7305.82	_____
FIXED EXPENSES					
Implements	acre	76.25	1.0000	76.25	_____
Tractors	acre	73.45	1.0000	73.45	_____
Self-Propelled	acre	113.35	1.0000	113.35	_____

TOTAL FIXED EXPENSES				263.05	_____

TOTAL SPECIFIED EXPENSES				7568.87	_____

Table 5A. Estimated resource use and costs for field operations, per acre, **3 gallon Azalea in container**, 13,500 plants per acre, **production season budget,** overhead irrigation, purchased liner, USDA Plant Hardiness Zones 8 and 9.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
LABOR					
Labor	hour	9.60	452.0000	4339.20	_____
HERBICIDES					
Ronstar	50 lb	90.00	8.0000	720.00	_____
FUNGICIDES					
Mancozeb	pt	8.66	25.0000	216.50	_____
thiophanate methyl	oz	0.60	48.0000	28.80	_____
FERTILIZERS					
Dolomitic lime	lb	0.14	772.0000	108.08	_____
Micronutrients	lb	1.33	290.0000	385.70	_____
Osmocote 14-14-14	50 lb	65.00	23.0000	1495.00	_____
Osmocote 19-5-11	50 lb	60.00	36.0000	2160.00	_____
INSECTICIDES					
Horticultural oil	gal.	30.00	5.2500	157.50	_____
Acephate 75 WP	lb.	7.83	7.0000	54.81	_____
OTHER					
Pumping Cost/ac/inch	inch	3.92	164.0000	642.88	_____
PRODUCTION					
Ground Cover Cloth	roll	215.00	12.0000	2580.00	_____
Tractor per hour	hour	28.14	3.0000	84.42	_____
Frost prot. blanket	roll	277.00	44.0000	12188.00	_____
PLANTING					
Pine bark	cu yd	15.00	193.0000	2895.00	_____
3 gal containers	1000	650.00	13.5000	8775.00	_____
Liner Azalea	1000	500.00	27.0000	13500.00	_____
OPERATOR LABOR					
Tractors	hour	15.30	3.2500	49.74	_____
Self-Propelled	hour	15.30	8.5000	130.05	_____
Labor					
Implements	hour	9.60	3.0000	28.80	_____
Tractors	hour	9.60	44.7000	429.12	_____
Self-Propelled	hour	9.60	28.9000	277.44	_____
DIESEL FUEL					
Tractors	gal	2.93	91.7642	268.89	_____
Self-Propelled	gal	2.93	38.5906	113.07	_____
ELECTRICITY					
Self-Propelled	kWh	0.15	190.0000	28.50	_____
GASOLINE					
Self-Propelled	gal	2.33	4.8000	11.20	_____
REPAIR & MAINTENANCE					
Implements	acre	39.52	1.0000	39.52	_____
Tractors	acre	51.00	1.0000	51.00	_____
Self-Propelled	acre	156.33	1.0000	156.33	_____
INTEREST ON OP. CAP.	acre	3944.18	1.0000	3944.18	_____

TOTAL DIRECT EXPENSES				55858.75	_____
FIXED EXPENSES					
Implements	acre	115.53	1.0000	115.53	_____
Tractors	acre	87.74	1.0000	87.74	_____
Self-Propelled	acre	497.67	1.0000	497.67	_____

TOTAL FIXED EXPENSES				700.94	_____

TOTAL SPECIFIED EXPENSES				56559.69	_____

Table 5B. Estimated resource use and costs for field operations, per acre, **3 gallon Azalea in container**, 13,500 plants per acre, **harvest season budget**, overhead irrigation, purchased liner, USDA Plant Hardiness Zones 8 and 9.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
LABOR					
Labor	hour	9.60	208.0000	1996.80	_____
HERBICIDES					
Ronstar	50 lb	90.00	2.0000	180.00	_____
FUNGICIDES					
thiophanate methyl	oz	0.60	32.0000	19.20	_____
INSECTICIDES					
Horticultural oil	gal.	30.00	1.5000	45.00	_____
Acephate 75 WP	lb.	7.83	2.0000	15.66	_____
OTHER					
Pumping Cost/ac/inch	inch	3.92	62.0000	243.04	_____
PRODUCTION					
Frost prot. blanket	roll	277.00	4.0000	1108.00	_____
HARVEST					
Product Tag	1000	49.95	13.5750	678.07	_____
OPERATOR LABOR					
Tractors	hour	15.30	2.5000	38.26	_____
Labor					
Tractors	hour	9.60	37.4000	359.04	_____
Self-Propelled	hour	9.60	21.2000	203.52	_____
DIESEL FUEL					
Tractors	gal	2.93	79.4472	232.80	_____
Self-Propelled	gal	2.93	12.4000	36.33	_____
ELECTRICITY					
Self-Propelled	kWh	0.15	240.0000	36.00	_____
GASOLINE					
Self-Propelled	gal	2.33	1.8000	4.20	_____
REPAIR & MAINTENANCE					
Implements	acre	24.55	1.0000	24.55	_____
Tractors	acre	42.54	1.0000	42.54	_____
Self-Propelled	acre	41.69	1.0000	41.69	_____
INTEREST ON OP. CAP.	acre	117.09	1.0000	117.09	_____

TOTAL DIRECT EXPENSES				5421.79	_____
FIXED EXPENSES					
Implements	acre	75.81	1.0000	75.81	_____
Tractors	acre	72.47	1.0000	72.47	_____
Self-Propelled	acre	113.35	1.0000	113.35	_____

TOTAL FIXED EXPENSES				261.63	_____

TOTAL SPECIFIED EXPENSES				5683.42	_____

Table 6A. Estimated resource use and costs for field operations, per acre, **3 gallon Crape Myrtle in container**, 13,500 plants per acre, **production season budget**, overhead irrigation, purchased liner, USDA Plant Hardiness Zones 8 and 9.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
LABOR					
Labor	hour	9.60	606.5000	5822.40	_____
HERBICIDES					
Ronstar	50 lb	90.00	8.0000	720.00	_____
FUNGICIDES					
Mancozeb	pt	8.66	25.0000	216.50	_____
thiophanate methyl	oz	0.60	48.0000	28.80	_____
FERTILIZERS					
Dolomitic lime	lb	0.14	772.0000	108.08	_____
Micronutrients	lb	1.33	290.0000	385.70	_____
Osmocote 14-14-14	50 lb	65.00	23.0000	1495.00	_____
Osmocote 19-5-11	50 lb	60.00	36.0000	2160.00	_____
INSECTICIDES					
Horticultural oil	gal.	30.00	5.2500	157.50	_____
Acephate 75 WP	lb.	7.83	7.0000	54.81	_____
OTHER					
Pumping Cost/ac/inch	inch	3.92	164.0000	642.88	_____
PRODUCTION					
Ground Cover Cloth	roll	215.00	12.0000	2580.00	_____
Tractor per hour	hour	28.14	3.0000	84.42	_____
Frost prot. blanket	roll	277.00	4.0000	1108.00	_____
Stakes, rebar	100	50.00	27.0000	1350.00	_____
Tie ribbon/string	roll	10.00	30.0000	300.00	_____
PLANTING					
Pine bark	cu yd	15.00	193.0000	2895.00	_____
3 gal containers	1000	650.00	13.5000	8775.00	_____
Liner Crape Myrtle	1000	500.00	27.0000	13500.00	_____
OPERATOR LABOR					
Tractors	hour	15.30	3.2500	49.74	_____
Self-Propelled	hour	15.30	8.5000	130.05	_____
Labor					
Implements	hour	9.60	3.0000	28.80	_____
Tractors	hour	9.60	34.7000	333.12	_____
Self-Propelled	hour	9.60	30.9000	296.64	_____
DIESEL FUEL					
Tractors	gal	2.93	76.7642	224.94	_____
Self-Propelled	gal	2.93	38.5906	113.07	_____
ELECTRICITY					
Self-Propelled	kWh	0.15	190.0000	28.50	_____
GASOLINE					
Self-Propelled	gal	2.33	6.0000	14.00	_____
REPAIR & MAINTENANCE					
Implements	acre	38.83	1.0000	38.83	_____
Tractors	acre	40.02	1.0000	40.02	_____
Self-Propelled	acre	157.83	1.0000	157.83	_____
INTEREST ON OP. CAP.	acre	3184.41	1.0000	3184.41	_____

TOTAL DIRECT EXPENSES				47024.06	_____
FIXED EXPENSES					
Implements	acre	113.08	1.0000	113.08	_____
Tractors	acre	71.24	1.0000	71.24	_____
Self-Propelled	acre	508.85	1.0000	508.85	_____

TOTAL FIXED EXPENSES				693.17	_____

TOTAL SPECIFIED EXPENSES				47717.23	_____

Table 6B. Estimated resource use and costs for field operations, per acre, **3 gallon Crape Myrtle in container**, 13,500 plants per acre, **harvest budget**, overhead irrigation, purchased liner, USDA Plant Hardiness Zones 8 and 9.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
LABOR					
Labor	hour	9.60	208.0000	1996.80	_____
HERBICIDES					
Ronstar	50 lb	90.00	2.0000	180.00	_____
FUNGICIDES					
thiophanate methyl	oz	0.60	32.0000	19.20	_____
INSECTICIDES					
Horticultural oil	gal.	30.00	1.5000	45.00	_____
Acephate 75 WP	lb.	7.83	2.0000	15.66	_____
OTHER					
Pumping Cost/ac/inch	inch	3.92	62.0000	243.04	_____
PRODUCTION					
Frost prot. blanket	roll	277.00	4.0000	1108.00	_____
HARVEST					
Product Tag	1000	49.95	13.5000	674.33	_____
OPERATOR LABOR					
Tractors	hour	15.30	2.5000	38.26	_____
Labor					
Tractors	hour	9.60	37.4000	359.04	_____
Self-Propelled	hour	9.60	21.2000	203.52	_____
DIESEL FUEL					
Tractors	gal	2.93	79.4472	232.80	_____
Self-Propelled	gal	2.93	12.4000	36.33	_____
ELECTRICITY					
Self-Propelled	kWh	0.15	240.0000	36.00	_____
GASOLINE					
Self-Propelled	gal	2.33	1.8000	4.20	_____
REPAIR & MAINTENANCE					
Implements	acre	24.55	1.0000	24.55	_____
Tractors	acre	42.54	1.0000	42.54	_____
Self-Propelled	acre	41.69	1.0000	41.69	_____
INTEREST ON OP. CAP.	acre	158.99	1.0000	158.99	_____

TOTAL DIRECT EXPENSES				5459.94	_____
FIXED EXPENSES					
Implements	acre	75.81	1.0000	75.81	_____
Tractors	acre	72.47	1.0000	72.47	_____
Self-Propelled	acre	113.35	1.0000	113.35	_____

TOTAL FIXED EXPENSES				261.63	_____

TOTAL SPECIFIED EXPENSES				5721.57	_____

Table 7A. Estimated resource use and costs for field operations, per acre, **7 gallon Live Oak in container**, 7,000 plants per acre, **production season budget**, overhead irrigation, purchased liner, USDA Plant Hardiness Zones 8 and 9.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
LABOR					
Labor	hour	9.60	233.5000	2241.60	_____
HERBICIDES					
Ronstar	50 lb	90.00	8.0000	720.00	_____
FUNGICIDES					
Mancozeb	pt	8.66	12.5000	108.25	_____
thiophanate methyl	oz	0.60	16.0000	9.60	_____
FERTILIZERS					
Dolomitic lime	lb	0.14	800.0000	112.00	_____
Micronutrients	lb	1.33	300.0000	399.00	_____
Osmocote 19-5-11	50 lb	60.00	36.0000	2160.00	_____
Osmocote 14-14-14	50 lb	65.00	30.0000	1950.00	_____
INSECTICIDES					
Horticultural oil	gal.	30.00	2.2500	67.50	_____
Acephate 75 WP	lb.	7.83	3.0000	23.49	_____
OTHER					
Pumping Cost/ac/inch	inch	3.92	164.0000	642.88	_____
PRODUCTION					
Ground Cover Cloth	roll	215.00	12.0000	2580.00	_____
7 gal containers	1000	700.00	7.0000	4900.00	_____
Tractor per hour	hour	28.14	12.0000	337.68	_____
Stakes, rebar	100	50.00	35.0000	1750.00	_____
PLANTING					
Pine bark	cu yd	15.00	200.0000	3000.00	_____
Live Oak liner	each	2.00	7000.0000	14000.00	_____
OPERATOR LABOR					
Tractors	hour	15.30	8.7500	133.88	_____
Labor					
Implements	hour	9.60	1.5000	14.40	_____
Tractors	hour	9.60	54.5000	523.20	_____
Self-Propelled	hour	9.60	29.9000	287.04	_____
DIESEL FUEL					
Tractors	gal	2.93	131.5190	385.35	_____
Self-Propelled	gal	2.93	38.5906	113.07	_____
ELECTRICITY					
Self-Propelled	kWh	0.15	105.0000	15.75	_____
GASOLINE					
Self-Propelled	gal	2.33	5.4000	12.60	_____
REPAIR & MAINTENANCE					
Implements	acre	26.37	1.0000	26.37	_____
Tractors	acre	65.01	1.0000	65.01	_____
Self-Propelled	acre	100.41	1.0000	100.41	_____
INTEREST ON OP. CAP.	acre	2712.65	1.0000	2712.65	_____

TOTAL DIRECT EXPENSES				39391.74	_____
FIXED EXPENSES					
Implements	acre	81.97	1.0000	81.97	_____
Tractors	acre	127.54	1.0000	127.54	_____
Self-Propelled	acre	317.17	1.0000	317.17	_____

TOTAL FIXED EXPENSES				526.68	_____

TOTAL SPECIFIED EXPENSES				39918.42	_____

Table 7B. Estimated resource use and costs for field operations, per acre, **7 gallon Live Oak in container**, 7,000plants per acre, **harvest budget**, overhead irrigation, purchased liner, USDA Plant Hardiness Zones 8 and 9.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
LABOR					
Labor	hour	9.60	262.0000	2515.20	_____
HERBICIDES					
Ronstar	50 lb	90.00	2.0000	180.00	_____
FUNGICIDES					
thiophanate methyl	oz	0.60	16.0000	9.60	_____
INSECTICIDES					
Horticultural oil	gal.	30.00	0.7500	22.50	_____
Acephate 75 WP	lb.	7.83	1.0000	7.83	_____
OTHER					
Pumping Cost/ac/inch	inch	3.92	62.0000	243.04	_____
HARVEST					
Product Tag	1000	49.95	8.0000	399.60	_____
OPERATOR LABOR					
Tractors	hour	15.30	0.2500	3.83	_____
Labor					
Tractors	hour	9.60	71.0000	681.60	_____
Self-Propelled	hour	9.60	21.2000	203.52	_____
DIESEL FUEL					
Tractors	gal	2.93	142.1434	416.49	_____
Self-Propelled	gal	2.93	12.4000	36.33	_____
ELECTRICITY					
Self-Propelled	kWh	0.15	240.0000	36.00	_____
GASOLINE					
Self-Propelled	gal	2.33	1.8000	4.20	_____
REPAIR & MAINTENANCE					
Implements	acre	22.97	1.0000	22.97	_____
Tractors	acre	78.11	1.0000	78.11	_____
Self-Propelled	acre	41.69	1.0000	41.69	_____
INTEREST ON OP. CAP.	acre	108.10	1.0000	108.10	_____

TOTAL DIRECT EXPENSES				5010.61	_____
FIXED EXPENSES					
Implements	acre	75.94	1.0000	75.94	_____
Tractors	acre	118.21	1.0000	118.21	_____
Self-Propelled	acre	113.35	1.0000	113.35	_____

TOTAL FIXED EXPENSES				307.50	_____

TOTAL SPECIFIED EXPENSES				5318.11	_____

Table 8. Estimated resource use and costs for field operations, per acre, **3 gallon Fig in container**, 13,500 plants per acre, **production and harvest budget**, overhead irrigation, purchased liner, USDA Plant Hardiness Zones 8 and 9.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
LABOR					
Labor	hour	9.60	742.5000	7128.00	_____
HERBICIDES					
Ronstar	50 lb	90.00	3.0000	270.00	_____
FUNGICIDES					
Mancozeb	pt	8.66	12.5000	108.25	_____
thiophanate methyl	oz	0.60	16.0000	9.60	_____
FERTILIZERS					
Dolomitic lime	lb	0.14	772.0000	108.08	_____
Micronutrients	lb	1.33	290.0000	385.70	_____
Osmocote 19-5-11	50 lb	60.00	36.0000	2160.00	_____
INSECTICIDES					
Horticultural oil	gal.	30.00	2.2500	67.50	_____
Acephate 75 WP	lb.	7.83	3.0000	23.49	_____
OTHER					
Pumping Cost/ac/inch	inch	3.92	127.0000	497.84	_____
PRODUCTION					
Ground Cover Cloth	roll	215.00	12.0000	2580.00	_____
Stakes, rebar	100	50.00	27.0000	1350.00	_____
PLANTING					
Pine bark	cu yd	15.00	193.0000	2895.00	_____
3 gal containers	1000	650.00	13.5000	8775.00	_____
Liner Fig	1000	750.00	13.5000	10125.00	_____
HARVEST					
Product Tag	1000	49.95	13.5000	674.33	_____
OPERATOR LABOR					
Tractors	hour	15.30	2.5000	38.25	_____
Self-Propelled	hour	15.30	8.5000	130.05	_____
Labor					
Implements	hour	9.60	2.2500	21.60	_____
Tractors	hour	9.60	48.9000	469.44	_____
Self-Propelled	hour	9.60	30.2000	289.92	_____
DIESEL FUEL					
Tractors	gal	2.93	103.7340	303.94	_____
Self-Propelled	gal	2.93	31.1906	91.39	_____
ELECTRICITY					
Self-Propelled	kWh	0.15	310.0000	46.50	_____
GASOLINE					
Self-Propelled	gal	2.33	4.2000	9.80	_____
REPAIR & MAINTENANCE					
Implements	acre	16.13	1.0000	16.13	_____
Tractors	acre	55.16	1.0000	55.16	_____
Self-Propelled	acre	156.17	1.0000	156.17	_____
INTEREST ON OP. CAP.	acre	1914.37	1.0000	1914.37	_____

TOTAL DIRECT EXPENSES				40700.52	_____
FIXED EXPENSES					
Implements	acre	50.43	1.0000	50.43	_____
Tractors	acre	91.43	1.0000	91.43	_____
Self-Propelled	acre	490.77	1.0000	490.77	_____

TOTAL FIXED EXPENSES				632.63	_____

TOTAL SPECIFIED EXPENSES				41333.15	_____

Table 9. Estimated resource use and costs for field operations, per acre, **1 gallon Lantana in container**, 30,000 plants per acre, production and harvest budget, overhead irrigation, purchased liner, USDA Plant Hardiness Zones 8 and 9.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
LABOR					
Labor	hour	9.60	685.5000	6580.80	
HERBICIDES					
Ronstar	50 lb	90.00	1.5000	135.00	
FUNGICIDES					
Kocide DF	lb	5.20	6.2500	32.50	
thiophanate methyl	oz	0.60	16.0000	9.60	
FERTILIZERS					
Dolomitic lime	lb	0.14	600.0000	84.00	
Micronutrients	lb	1.33	225.0000	299.25	
Osmocote 14-14-14	50 lb	65.00	30.0000	1950.00	
INSECTICIDES					
Horticultural oil	gal.	30.00	1.5000	45.00	
Acephate 75 WP	lb.	7.83	2.0000	15.66	
OTHER					
Pumping Cost/ac/inch	inch	3.92	39.0000	152.88	
PRODUCTION					
Ground Cover Cloth	roll	215.00	12.0000	2580.00	
PLANTING					
Pine bark	cu yd	15.00	150.0000	2250.00	
1 gal containers	1000	250.00	30.0000	7500.00	
Liner Lantana	1000	500.00	30.0000	15000.00	
HARVEST					
Product Tag	1000	49.95	30.0000	1498.50	
OPERATOR LABOR					
Tractors	hour	15.30	8.5000	130.05	
Labor					
Implements	hour	9.60	1.5000	14.40	
Tractors	hour	9.60	40.5000	388.80	
Self-Propelled	hour	9.60	84.9000	815.04	
DIESEL FUEL					
Tractors	gal	2.93	86.9340	254.72	
Self-Propelled	gal	2.93	13.5906	39.82	
ELECTRICITY					
Self-Propelled	kWh	0.15	358.0000	53.70	
GASOLINE					
Tractors	gal	2.33	3.6000	8.38	
Self-Propelled	gal	2.33	2.4000	5.60	
REPAIR & MAINTENANCE					
Implements	acre	15.05	1.0000	15.05	
Tractors	acre	51.79	1.0000	51.79	
Self-Propelled	acre	161.17	1.0000	161.17	
INTEREST ON OP. CAP.	acre	1042.49	1.0000	1042.49	

TOTAL DIRECT EXPENSES				41114.20	
FIXED EXPENSES					
Implements	acre	47.46	1.0000	47.46	
Tractors	acre	116.00	1.0000	116.00	
Self-Propelled	acre	514.89	1.0000	514.89	

TOTAL FIXED EXPENSES				678.35	

TOTAL SPECIFIED EXPENSES				41792.55	

Table 10. Estimated resource use and costs for field operations, per acre, **1 gallon Liriope in container**, 30,000 plants per acre, production and harvest budget, overhead irrigation, purchased liner, USDA Plant Hardiness Zones 8 and 9.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
LABOR					
Labor	hour	9.60	504.5000	4843.20	_____
HERBICIDES					
Ronstar	50 lb	90.00	3.0000	270.00	_____
FUNGICIDES					
Mancozeb	pt	8.66	12.5000	108.25	_____
thiophanate methyl	oz	0.60	16.0000	9.60	_____
FERTILIZERS					
Dolomitic lime	lb	0.14	600.0000	84.00	_____
Micronutrients	lb	1.33	225.0000	299.25	_____
Osmocote 14-14-14	50 lb	65.00	30.0000	1950.00	_____
INSECTICIDES					
Horticultural oil	gal.	30.00	2.2500	67.50	_____
Acephate 75 WP	lb.	7.83	3.0000	23.49	_____
OTHER					
Pumping Cost/ac/inch	inch	3.92	127.0000	497.84	_____
PRODUCTION					
Ground Cover Cloth	roll	215.00	12.0000	2580.00	_____
PLANTING					
Pine bark	cu yd	15.00	150.0000	2250.00	_____
1 gal containers	1000	250.00	30.0000	7500.00	_____
Liner Liriope	1000	350.00	30.0000	10500.00	_____
HARVEST					
Product Tag	1000	49.95	30.0000	1498.50	_____
OPERATOR LABOR					
Tractors	hour	15.30	2.5000	38.25	_____
Labor					
Implements	hour	9.60	2.2500	21.60	_____
Tractors	hour	9.60	49.5000	475.20	_____
Self-Propelled	hour	9.60	94.7000	909.12	_____
DIESEL FUEL					
Tractors	gal	2.93	104.9340	307.46	_____
Self-Propelled	gal	2.93	31.1906	91.39	_____
ELECTRICITY					
Self-Propelled	kWh	0.15	358.0000	53.70	_____
GASOLINE					
Self-Propelled	gal	2.33	3.0000	7.00	_____
REPAIR & MAINTENANCE					
Implements	acre	16.25	1.0000	16.25	_____
Tractors	acre	55.82	1.0000	55.82	_____
Self-Propelled	acre	186.67	1.0000	186.67	_____
INTEREST ON OP. CAP.	acre	1731.78	1.0000	1731.78	_____

TOTAL DIRECT EXPENSES				36375.88	_____
FIXED EXPENSES					
Implements	acre	50.87	1.0000	50.87	_____
Tractors	acre	92.41	1.0000	92.41	_____
Self-Propelled	acre	584.67	1.0000	584.67	_____

TOTAL FIXED EXPENSES				727.95	_____

TOTAL SPECIFIED EXPENSES				37103.83	_____

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Appendix Tables

Appendix Table 1. Estimated resource use and costs for field operations, per acre, 1 gallon Azalea in container, 30,000 plants per acre, production and harvest budget, overhead irrigation, purchased liner, USDA Plant Hardiness Zones 8 and 9.

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST DIRECT	POWER UNIT COST FIXED	EQUIPMENT COST DIRECT	EQUIPMENT COST FIXED	ALLOC LABOR HOURS	ALLOC LABOR COST	OPERATING/DURABLE INPUT AMOUNT	OPERATING/DURABLE INPUT PRICE	OPERATING/DURABLE INPUT COST	TOTAL COST
						dollars					dollars			dollars	
Prep. container beds				1.00	Oct										
Blade	6'	2WD50	2.500			20.33	10.75	4.40	11.31	2.50	38.25				85.04
Labor	hour											16.0000	9.60	153.60	153.60
Ground Cover Cloth	roll											12.0000	215.00	2580.00	2580.00
Serve mixer bin				1.00	Oct										
Tractor w/loader	35hp		1.500			19.00	3.04			1.50	14.40				36.44
Prepare media				1.00	Oct										
Media Mixer	3 hp		15.000			46.75	131.36								178.11
Pine bark	cu yd											150.0000	15.00	2250.00	2250.00
Dolomitic lime	lb											600.0000	0.14	84.00	84.00
Micronutrients	lb											225.0000	1.33	299.25	299.25
Osmocote 14-14-14	50 lb											18.0000	65.00	1170.00	1170.00
Labor	hour											13.5000	9.60	129.60	129.60
Move liners				1.00	Oct										
Wagons (3) liners	5'x12'	35 hp	2.500			17.40	4.12	0.52	1.84	2.50	24.00				47.88
Labor	hour											15.0000	9.60	144.00	144.00
Plant liners				1.00	Oct										
Potting machine 10hp	2250/hr		13.300			108.62	291.17			66.50	638.40				1038.19
1 gal containers	1000											30.0000	250.00	7500.00	7500.00
Labor	hour											70.0000	9.60	672.00	672.00
Tractor per hour	hour											3.0000	28.14	84.42	84.42
Liner Azalea	1000											30.0000	500.00	15000.00	15000.00
Move cans				1.00	Oct										
Wagons (3) 1 gal can	5'X12'	35 hp	18.500			128.72	30.52	3.83	13.62	18.50	177.60				354.29
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											120.0000	9.60	1152.00	1152.00
Irrigate 10/1-11/30				29.00	Oct										
PU truck for irrig	1/2 ton		0.100			25.15	21.15			2.90	27.84				74.14
Pumping Cost/ac/inch	inch											29.0000	3.92	113.68	113.68
Spread herbicide				1.00	Nov										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											2.0000	90.00	180.00	180.00
Labor	hour											1.0000	9.60	9.60	9.60
Frost protect ON/off				1.00	Dec										
Wagon, 4 wheel	5' x 12'	35 hp	1.000			5.50	1.65	0.07	0.25	1.00	9.60				17.07
Frost prot. blanket	roll											4.0000	277.00	1108.00	1108.00
Labor	hour											10.0000	9.60	96.00	96.00
Irrigate 12/1 - 2/28				18.00	Jan										
PU truck for irrig	1/2 ton		0.100			15.61	13.13			1.80	17.28				46.02
Pumping Cost/ac/inch	inch											18.0000	3.92	70.56	70.56
Spread herbicide				1.00	Feb										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											2.0000	90.00	180.00	180.00
Labor	hour											1.0000	9.60	9.60	9.60
Hand weeding				1.00	Feb										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											4.0000	9.60	38.40	38.40
Frost protect on/OFF				1.00	Feb										
Wagon, 4 wheel	5' x 12'	35 hp	1.000			5.50	1.65	0.07	0.25	1.00	9.60				17.07
Labor	hour											8.0000	9.60	76.80	76.80
Topdress fertilizer				1.00	Mar										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Osmocote 19-5-11	50 lb											36.0000	60.00	2160.00	2160.00
Labor	hour											25.0000	9.60	240.00	240.00
Apply pesticides				1.00	Mar										
Sprayer on util veh	100 gal	2WD50	3.000			24.39	12.90	1.20	3.41	3.75	53.10				95.00
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Mancozeb	pt											6.2500	8.66	54.13	54.13
Apply pesticides				1.00	Apr										
Sprayer on util veh	100 gal	2WD50	3.000			24.39	12.90	1.20	3.41	3.75	53.10				95.00
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
thiophanate methyl	oz											16.0000	0.60	9.60	9.60
Irrigate 3/1 - 5/31				29.00	Apr										
PU truck for irrig	1/2 ton		0.100			25.15	21.15			2.90	27.84				74.14
Pumping Cost/ac/inch	inch											29.0000	3.92	113.68	113.68
Apply pesticides				1.00	May										
Sprayer on util veh	100 gal	2WD50	3.000			24.39	12.90	1.20	3.41	3.75	53.10				95.00
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Mancozeb	pt											6.2500	8.66	54.13	54.13
Spread herbicide				1.00	May										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											2.0000	90.00	180.00	180.00
Labor	hour											1.0000	9.60	9.60	9.60
Hand weeding				1.00	May										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											10.0000	9.60	96.00	96.00
Apply pesticides				1.00	Jun										
Sprayer on util veh	100 gal	2WD50	3.000			24.39	12.90	1.20	3.41	3.75	53.10				95.00
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
thiophanate methyl	oz											16.0000	0.60	9.60	9.60
Prune				1.00	Jul										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											2.0000	9.60	19.20	19.20

One gallon Azalea in container, continued.

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST DIRECT	POWER UNIT COST FIXED	EQUIPMENT COST DIRECT	EQUIPMENT COST FIXED	ALLOC LABOR HOURS	ALLOC LABOR COST	OPERATING/DURABLE INPUT AMOUNT	OPERATING/DURABLE INPUT PRICE	OPERATING/DURABLE INPUT COST	TOTAL COST
						dollars					dollars			dollars	
Apply pesticides				1.00	Jul										
Sprayer airblast tow	300 gal	2WD50	0.250			2.04	1.08	8.40	24.13	0.25	3.83				39.48
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Mancozeb	pt											6.2500	8.66	54.13	54.13
Space cans on beds				1.00	Jul										
Labor	hour											180.0000	9.60	1728.00	1728.00
Irrigate 6/1 - 9/30				88.00	Jul										
PU truck for irrig	1/2 ton		0.100			76.32	64.19			8.80	84.48				224.99
Pumping Cost/ac/inch	inch											88.0000	3.92	344.96	344.96
Spread herbicide				1.00	Aug										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											2.0000	90.00	180.00	180.00
Labor	hour											2.0000	9.60	19.20	19.20
Apply pesticides				1.00	Aug										
Sprayer airblast tow	300 gal	2WD50	0.250			2.04	1.08	8.40	24.13	0.25	3.83				39.48
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
thiophanate methyl	oz											16.0000	0.60	9.60	9.60
Hand weeding				1.00	Aug										
Labor	hour											4.0000	9.60	38.40	38.40
Apply pesticides				1.00	Sep										
Sprayer airblast tow	300 gal	2WD50	0.250			2.04	1.08	8.40	24.13	0.25	3.83				39.48
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Mancozeb	pt											6.2500	8.66	54.13	54.13
Move to holding area				1.00	Oct										
Wagons (3) 1 gal can	5'X12'	35 hp	18.500			128.72	30.52	3.83	13.62	18.50	177.60				354.29
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											45.0000	9.60	432.00	432.00
Product Tag	1000											7.5000	49.95	374.63	374.63
Load onto truck				1.00	Oct										
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											45.0000	9.60	432.00	432.00
Apply pesticides				1.00	Oct										
Sprayer airblast tow	300 gal	2WD50	0.250			2.04	1.08	8.40	24.13	0.25	3.83				39.48
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
thiophanate methyl	oz											16.0000	0.60	9.60	9.60
Irrigate 10/1-11/30				29.00	Oct										
PU truck for irrig	1/2 ton		0.100			25.15	21.15			2.90	27.84				74.14
Pumping Cost/ac/inch	inch											29.0000	3.92	113.68	113.68
Hand weeding				1.00	Nov										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											4.0000	9.60	38.40	38.40
Spread herbicide				1.00	Nov										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											2.0000	90.00	180.00	180.00
Labor	hour											1.0000	9.60	9.60	9.60
Apply pesticides				1.00	Dec										
Sprayer airblast tow	300 gal	2WD50	0.250			2.04	1.08	8.40	24.13	0.25	3.83				39.48
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
thiophanate methyl	oz											16.0000	0.60	9.60	9.60
Frost protect ON/off				1.00	Dec										
Wagon, 4 wheel	5' x 12'	2WD50	1.000			6.25	4.30	0.07	0.25	1.00	15.30				26.17
Frost prot. blanket	roll											4.0000	277.00	1108.00	1108.00
Labor	hour											10.0000	9.60	96.00	96.00
Irrigate 12/1 - 2/28				18.00	Jan										
PU truck for irrig	1/2 ton		0.100			15.61	13.13			1.80	17.28				46.02
Pumping Cost/ac/inch	inch											18.0000	3.92	70.56	70.56
Hand weeding				1.00	Feb										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											4.0000	9.60	38.40	38.40
Frost protect on/OFF				1.00	Feb										
Wagon, 4 wheel	5' x 12'	2WD50	1.000			6.25	4.30	0.07	0.25	1.00	15.30				26.17
Labor	hour											8.0000	9.60	76.80	76.80
Move to holding area				1.00	Mar										
Wagons (3) 1 gal can	5'X12'	35 hp	18.500			128.72	30.52	3.83	13.62	18.50	177.60				354.29
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											60.0000	9.60	576.00	576.00
Product Tag	1000											22.5000	49.95	1123.88	1123.88
Load onto truck				1.00	Mar										
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											135.0000	9.60	1296.00	1296.00
Irrigate 3/1 - 5/31				15.00	Mar										
PU truck for irrig	1/2 ton		0.100			13.01	10.94			1.50	14.40				38.35
Pumping Cost/ac/inch	inch											15.0000	3.92	58.80	58.80
Cleanup of beds				1.00	Apr										
Wagon, 4 wheel	5' x 12'	35 hp	1.000			5.50	1.65	0.07	0.25	1.00	9.60				17.07
Labor	hour											2.0000	9.60	19.20	19.20
TOTALS						1027.17	893.08	63.56	189.55	198.35	2005.36			44811.81	48990.71
INTEREST ON OPERATING CAPITAL															3273.31
TOTAL SPECIFIED COST															52264.02

Appendix Table 2. Estimated resource use and costs for field operations, per acre, 3 gallon Azalea in container, 13,500 plants per acre, production and harvest budget, overhead irrigation, purchased liner, USDA Plant Hardiness Zones 8 and 9.

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST DIRECT	POWER UNIT COST FIXED	EQUIPMENT COST DIRECT	EQUIPMENT COST FIXED	ALLOC LABOR HOURS	ALLOC LABOR COST	OPERATING/DURABLE INPUT AMOUNT	OPERATING/DURABLE INPUT PRICE	OPERATING/DURABLE INPUT COST	TOTAL COST
						dollars					dollars			dollars	
Prep. container beds				1.00	Oct										
Blade	6'	2WD50	2.500			20.33	10.75	4.40	11.31	2.50	38.25				85.04
Labor	hour											16.0000	9.60	153.60	153.60
Ground Cover Cloth	roll											12.0000	215.00	2580.00	2580.00
Serve mixer bin				1.00	Oct										
Tractor w/loader	35hp		1.500			19.00	3.04			1.50	14.40				36.44
Prepare media				1.00	Oct										
Media Mixer	3 hp		15.000			46.75	131.36								178.11
Pine bark	cu yd											193.0000	15.00	2895.00	2895.00
Dolomitic lime	lb											772.0000	0.14	108.08	108.08
Micronutrients	lb											290.0000	1.33	385.70	385.70
Osmocote 14-14-14	50 lb											23.0000	65.00	1495.00	1495.00
Labor	hour											13.5000	9.60	129.60	129.60
Move liners				1.00	Oct										
Wagons (3) liners	5'x12'	35 hp	2.500			17.40	4.12	0.52	1.84	2.50	24.00				47.88
Labor	hour											13.0000	9.60	124.80	124.80
Plant liners				1.00	Oct										
Potting machine 10hp	1500/hr		8.500			69.42	186.09			8.50	130.05				385.56
3 gal containers	1000											13.5000	650.00	8775.00	8775.00
Labor	hour											50.0000	9.60	480.00	480.00
Tractor per hour	hour											3.0000	28.14	84.42	84.42
Liner Azalea	1000											27.0000	500.00	13500.00	13500.00
Move cans				1.00	Oct										
Wagons (3) 3 gal can	5'X12'	35 hp	18.200			126.63	30.03	3.77	13.40	18.20	174.72				348.55
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											90.0000	9.60	864.00	864.00
Irrigate 10/1-11/30				29.00	Oct										
PU truck for irrig	1/2 ton		0.100			25.15	21.15			2.90	27.84				74.14
Pumping Cost/ac/inch	inch											29.0000	3.92	113.68	113.68
Spread herbicide				1.00	Nov										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											2.0000	90.00	180.00	180.00
Labor	hour											1.0000	9.60	9.60	9.60
Irrigate 12/1 - 2/28				18.00	Jan										
PU truck for irrig	1/2 ton		0.100			15.61	13.13			1.80	17.28				46.02
Pumping Cost/ac/inch	inch											18.0000	3.92	70.56	70.56
Spread herbicide				1.00	Feb										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											2.0000	90.00	180.00	180.00
Labor	hour											1.0000	9.60	9.60	9.60
Hand weeding				1.00	Feb										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											3.0000	9.60	28.80	28.80
Topdress fertilizer				1.00	Mar										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Osmocote 19-5-11	50 lb											36.0000	60.00	2160.00	2160.00
Labor	hour											15.0000	9.60	144.00	144.00
Apply pesticides				1.00	Mar										
Sprayer on util veh	100 gal	35 hp	3.000			20.87	4.95	1.20	3.41	3.75	36.00				66.43
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Mancozeb	pt											6.2500	8.66	54.13	54.13
Apply pesticides				1.00	Apr										
Sprayer on util veh	100 gal	35 hp	3.000			20.87	4.95	1.20	3.41	3.75	36.00				66.43
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
thiophanate methyl	oz											16.0000	0.60	9.60	9.60
Irrigate 3/1 - 5/31				29.00	Apr										
PU truck for irrig	1/2 ton		0.100			25.15	21.15			2.90	27.84				74.14
Pumping Cost/ac/inch	inch											29.0000	3.92	113.68	113.68
Apply pesticides				1.00	May										
Sprayer on util veh	100 gal	35 hp	3.000			20.87	4.95	1.20	3.41	3.75	36.00				66.43
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Mancozeb	pt											6.2500	8.66	54.13	54.13
Spread herbicide				1.00	May										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											2.0000	90.00	180.00	180.00
Labor	hour											1.0000	9.60	9.60	9.60
Hand weeding				1.00	May										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											4.0000	9.60	38.40	38.40
Apply pesticides				1.00	Jun										
Sprayer on util veh	100 gal	35 hp	3.000			20.87	4.95	1.20	3.41	3.75	36.00				66.43
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
thiophanate methyl	oz											16.0000	0.60	9.60	9.60
Prune				1.00	Jul										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											1.5000	9.60	14.40	14.40

3 gallon Azalea in container, continued.

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST DIRECT	POWER UNIT COST FIXED	EQUIPMENT COST DIRECT	EQUIPMENT COST FIXED	ALLOC LABOR HOURS	ALLOC LABOR COST	OPERATING/DURABLE INPUT AMOUNT	PRICE	COST	TOTAL COST
						dollars					dollars			dollars	
Apply pesticides				1.00	Jul										
Sprayer airblast tow	300 gal	2WD50	0.250			2.04	1.08	8.40	24.13	0.25	3.83				39.48
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Mancozeb	pt											6.2500	8.66	54.13	54.13
Space cans on beds				1.00	Jul										
Labor	hour											120.0000	9.60	1152.00	1152.00
Irrigate 6/1 - 9/30				88.00	Jul										
PU truck for irrig	1/2 ton		0.100			76.32	64.19			8.80	84.48				224.99
Pumping Cost/ac/inch	inch											88.0000	3.92	344.96	344.96
Spread herbicide				1.00	Aug										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											2.0000	90.00	180.00	180.00
Labor	hour											1.0000	9.60	9.60	9.60
Apply pesticides				1.00	Aug										
Sprayer airblast tow	300 gal	2WD50	0.250			2.04	1.08	8.40	24.13	0.25	3.83				39.48
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
thiophanate methyl	oz											16.0000	0.60	9.60	9.60
Hand weeding				1.00	Aug										
Labor	hour											4.0000	9.60	38.40	38.40
Apply pesticides				1.00	Sep										
Sprayer airblast tow	300 gal	2WD50	0.250			2.04	1.08	8.40	24.13	0.25	3.83				39.48
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Mancozeb	pt											6.2500	8.66	54.13	54.13
Move to holding area				1.00	Oct										
Wagons (3) 3 gal can	5'X12'	35 hp	18.200			126.63	30.03	3.77	13.40	18.20	174.72				348.55
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											15.0000	9.60	144.00	144.00
Product Tag	1000											3.3750	49.95	168.58	168.58
Load onto truck				1.00	Oct										
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											30.0000	9.60	288.00	288.00
Apply pesticides				1.00	Oct										
Sprayer airblast tow	300 gal	2WD50	0.250			2.04	1.08	8.40	24.13	0.25	3.83				39.48
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
thiophanate methyl	oz											16.0000	0.60	9.60	9.60
Irrigate 10/1-11/30				29.00	Oct										
PU truck for irrig	1/2 ton		0.100			25.15	21.15			2.90	27.84				74.14
Pumping Cost/ac/inch	inch											29.0000	3.92	113.68	113.68
Hand weeding				1.00	Nov										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											4.0000	9.60	38.40	38.40
Spread herbicide				1.00	Nov										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											2.0000	90.00	180.00	180.00
Labor	hour											1.0000	9.60	9.60	9.60
Apply pesticides				1.00	Dec										
Sprayer airblast tow	300 gal	2WD50	0.250			2.04	1.08	8.40	24.13	0.25	3.83				39.48
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
thiophanate methyl	oz											16.0000	0.60	9.60	9.60
Frost protect ON/off				1.00	Dec										
Wagon, 4 wheel	5' x 12'	2WD50	1.000			6.25	4.30	0.07	0.25	1.00	15.30				26.17
Frost prot. blanket	roll											4.0000	277.00	1108.00	1108.00
Labor	hour											10.0000	9.60	96.00	96.00
Irrigate 12/1 - 2/28				18.00	Jan										
PU truck for irrig	1/2 ton		0.100			15.61	13.13			1.80	17.28				46.02
Pumping Cost/ac/inch	inch											18.0000	3.92	70.56	70.56
Hand weeding				1.00	Feb										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											3.0000	9.60	28.80	28.80
Frost protect on/OFF				1.00	Feb										
Wagon, 4 wheel	5' x 12'	2WD50	1.000			6.25	4.30	0.07	0.25	1.00	15.30				26.17
Labor	hour											8.0000	9.60	76.80	76.80
Move to holding area				1.00	Mar										
Wagons (3) 3 gal can	5'X12'	35 hp	18.200			126.63	30.03	3.77	13.40	18.20	174.72				348.55
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											45.0000	9.60	432.00	432.00
Product Tag	1000											10.2000	49.95	509.49	509.49
Load onto truck				1.00	Mar										
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											90.0000	9.60	864.00	864.00
Irrigate 3/1 - 5/31				15.00	Mar										
PU truck for irrig	1/2 ton		0.100			13.01	10.94			1.50	14.40				38.35
Pumping Cost/ac/inch	inch											15.0000	3.92	58.80	58.80
Cleanup of beds				1.00	Apr										
Wagon, 4 wheel	5' x 12'	35 hp	1.000			5.50	1.65	0.07	0.25	1.00	9.60				17.07
Labor	hour											2.0000	9.60	19.20	19.20
TOTALS						1022.55	771.23	64.07	191.34	149.45	1515.97				58181.84
INTEREST ON OPERATING CAPITAL															4061.27
TOTAL SPECIFIED COST															62243.11

Appendix Table 3. Estimated resource use and costs for field operations, per acre, 3 gallon Crape Myrtle in container, production and harvest budget, 13,500 plants per acre, overhead irrigation, purchased liner, USDA Plant Hardiness Zones 8 and 9.

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST DIRECT	POWER UNIT COST FIXED	EQUIPMENT COST DIRECT	EQUIPMENT COST FIXED	ALLOC LABOR HOURS	ALLOC LABOR COST	OPERATING/DURABLE INPUT AMOUNT	OPERATING/DURABLE INPUT PRICE	OPERATING/DURABLE INPUT COST	TOTAL COST
						dollars					dollars			dollars	
Prep. container beds				1.00	Oct										
Blade	6'	2WD50	2.500			20.33	10.75	4.40	11.31	2.50	38.25				85.04
Labor	hour											16.0000	9.60	153.60	153.60
Ground Cover Cloth	roll											12.0000	215.00	2580.00	2580.00
Serve mixer bin				1.00	Oct										
Tractor w/loader	35hp		1.500			19.00	3.04			1.50	14.40				36.44
Prepare media				1.00	Oct										
Media Mixer	3 hp		15.000			46.75	131.36								178.11
Pine bark	cu yd											193.0000	15.00	2895.00	2895.00
Dolomitic lime	lb											772.0000	0.14	108.08	108.08
Micronutrients	lb											290.0000	1.33	385.70	385.70
Osmocote 14-14-14	50 lb											23.0000	65.00	1495.00	1495.00
Labor	hour											13.5000	9.60	129.60	129.60
Move liners				1.00	Oct										
Wagons (3) liners	5'x12'	35 hp	2.500			17.40	4.12	0.52	1.84	2.50	24.00				47.88
Labor	hour											13.0000	9.60	124.80	124.80
Plant liners				1.00	Oct										
Potting machine 10hp	1500/hr		8.500			69.42	186.09			8.50	130.05				385.56
3 gal containers	1000											13.5000	650.00	8775.00	8775.00
Labor	hour											50.0000	9.60	480.00	480.00
Tractor per hour	hour											3.0000	28.14	84.42	84.42
Liner Crape Myrtle	1000											27.0000	500.00	13500.00	13500.00
Move cans				1.00	Oct										
Wagons (3) 3 gal can	5'X12'	35 hp	18.200			126.63	30.03	3.77	13.40	18.20	174.72				348.55
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											90.0000	9.60	864.00	864.00
Irrigate 10/1-11/30				29.00	Oct										
PU truck for irrig	1/2 ton		0.100			25.15	21.15			2.90	27.84				74.14
Pumping Cost/ac/inch	inch											29.0000	3.92	113.68	113.68
Spread herbicide				1.00	Nov										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											2.0000	90.00	180.00	180.00
Labor	hour											1.0000	9.60	9.60	9.60
Irrigate 12/1 - 2/28				18.00	Jan										
PU truck for irrig	1/2 ton		0.100			15.61	13.13			1.80	17.28				46.02
Pumping Cost/ac/inch	inch											18.0000	3.92	70.56	70.56
Spread herbicide				1.00	Feb										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											2.0000	90.00	180.00	180.00
Labor	hour											1.0000	9.60	9.60	9.60
Hand weeding				1.00	Feb										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											3.0000	9.60	28.80	28.80
Topdress fertilizer				1.00	Mar										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Osmocote 19-5-11	50 lb											36.0000	60.00	2160.00	2160.00
Labor	hour											15.0000	9.60	144.00	144.00
Apply pesticides				1.00	Mar										
Sprayer on util veh	100 gal	35 hp	3.000			20.87	4.95	1.20	3.41	3.75	36.00				66.43
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Mancozeb	pt											6.2500	8.66	54.13	54.13
Apply pesticides				1.00	Apr										
Sprayer on util veh	100 gal	35 hp	3.000			20.87	4.95	1.20	3.41	3.75	36.00				66.43
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
thiophanate methyl	oz											16.0000	0.60	9.60	9.60
Irrigate 3/1 - 5/31				29.00	Apr										
PU truck for irrig	1/2 ton		0.100			25.15	21.15			2.90	27.84				74.14
Pumping Cost/ac/inch	inch											29.0000	3.92	113.68	113.68
Apply pesticides				1.00	May										
Sprayer on util veh	100 gal	35 hp	3.000			20.87	4.95	1.20	3.41	3.75	36.00				66.43
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Mancozeb	pt											6.2500	8.66	54.13	54.13
Spread herbicide				1.00	May										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											2.0000	90.00	180.00	180.00
Labor	hour											1.0000	9.60	9.60	9.60
Space cans on beds				1.00	May										
Labor	hour											120.0000	9.60	1152.00	1152.00
Hand weeding				1.00	May										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											4.0000	9.60	38.40	38.40
Prune				1.00	Jun										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											3.0000	9.60	28.80	28.80
Apply pesticides				1.00	Jun										
Sprayer on util veh	100 gal	35 hp	3.000			20.87	4.95	1.20	3.41	3.75	36.00				66.43
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
thiophanate methyl	oz											16.0000	0.60	9.60	9.60

3 gallon Crape Myrtle in container, continued.

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST DIRECT	POWER UNIT COST FIXED	EQUIPMENT COST DIRECT	EQUIPMENT COST FIXED	ALLOC LABOR HOURS	ALLOC LABOR COST	OPERATING/DURABLE INPUT AMOUNT	OPERATING/DURABLE INPUT PRICE	OPERATING/DURABLE INPUT COST	TOTAL COST
						dollars					dollars			dollars	
Stake and tie cans				1.00	Jul										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Stakes, rebar	100											27.0000	50.00	1350.00	1350.00
Tie ribbon/string	roll											30.0000	10.00	300.00	300.00
Labor	hour											250.0000	9.60	2400.00	2400.00
Apply pesticides				1.00	Jul										
Sprayer airblast tow	300 gal	2WD50	0.250			2.04	1.08	8.40	24.13	0.25	3.83				39.48
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Mancozeb	pt											6.2500	8.66	54.13	54.13
Irrigate 6/1 - 9/30				88.00	Jul										
PU truck for irrig	1/2 ton		0.100			76.32	64.19			8.80	84.48				224.99
Pumping Cost/ac/inch	inch											88.0000	3.92	344.96	344.96
Spread herbicide				1.00	Aug										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											2.0000	90.00	180.00	180.00
Labor	hour											1.0000	9.60	9.60	9.60
Apply pesticides				1.00	Aug										
Sprayer airblast tow	300 gal	2WD50	0.250			2.04	1.08	8.40	24.13	0.25	3.83				39.48
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
thiophanate methyl	oz											16.0000	0.60	9.60	9.60
Hand weeding				1.00	Aug										
Labor	hour											4.0000	9.60	38.40	38.40
Prune				1.00	Aug										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											3.0000	9.60	28.80	28.80
Apply pesticides				1.00	Sep										
Sprayer airblast tow	300 gal	2WD50	0.250			2.04	1.08	8.40	24.13	0.25	3.83				39.48
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Mancozeb	pt											6.2500	8.66	54.13	54.13
Move to holding area				1.00	Oct										
Wagons (3) 3 gal can	5'X12'	35 hp	18.200			126.63	30.03	3.77	13.40	18.20	174.72				348.55
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											45.0000	9.60	432.00	432.00
Product Tag	1000											10.1250	49.95	505.74	505.74
Load onto truck				1.00	Oct										
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											90.0000	9.60	864.00	864.00
Apply pesticides				1.00	Oct										
Sprayer airblast tow	300 gal	2WD50	0.250			2.04	1.08	8.40	24.13	0.25	3.83				39.48
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
thiophanate methyl	oz											16.0000	0.60	9.60	9.60
Irrigate 10/1-11/30				29.00	Oct										
PU truck for irrig	1/2 ton		0.100			25.15	21.15			2.90	27.84				74.14
Pumping Cost/ac/inch	inch											29.0000	3.92	113.68	113.68
Hand weeding				1.00	Nov										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											4.0000	9.60	38.40	38.40
Spread herbicide				1.00	Nov										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											2.0000	90.00	180.00	180.00
Labor	hour											1.0000	9.60	9.60	9.60
Apply pesticides				1.00	Dec										
Sprayer airblast tow	300 gal	2WD50	0.250			2.04	1.08	8.40	24.13	0.25	3.83				39.48
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
thiophanate methyl	oz											16.0000	0.60	9.60	9.60
Frost protect ON/off				1.00	Dec										
Wagon, 4 wheel	5' x 12'	2WD50	1.000			6.25	4.30	0.07	0.25	1.00	15.30				26.17
Frost prot. blanket	roll											4.0000	277.00	1108.00	1108.00
Labor	hour											10.0000	9.60	96.00	96.00
Irrigate 12/1 - 2/28				18.00	Jan										
PU truck for irrig	1/2 ton		0.100			15.61	13.13			1.80	17.28				46.02
Pumping Cost/ac/inch	inch											18.0000	3.92	70.56	70.56
Hand weeding				1.00	Feb										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											3.0000	9.60	28.80	28.80
Frost protect on/OFF				1.00	Feb										
Wagon, 4 wheel	5' x 12'	2WD50	1.000			6.25	4.30	0.07	0.25	1.00	15.30				26.17
Labor	hour											8.0000	9.60	76.80	76.80
Move to holding area				1.00	Mar										
Wagons (3) 3 gal can	5'X12'	35 hp	18.200			126.63	30.03	3.77	13.40	18.20	174.72				348.55
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											15.0000	9.60	144.00	144.00
Product Tag	1000											3.3750	49.95	168.58	168.58
Load onto truck				1.00	Mar										
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											30.0000	9.60	288.00	288.00
Irrigate 3/1 - 5/31				15.00	Apr										
PU truck for irrig	1/2 ton		0.100			13.01	10.94			1.50	14.40				38.35
Pumping Cost/ac/inch	inch											15.0000	3.92	58.80	58.80
Cleanup of beds				1.00	Apr										
Wagon, 4 wheel	5' x 12'	35 hp	1.000			5.50	1.65	0.07	0.25	1.00	9.60				17.07
Labor	hour											2.0000	9.60	19.20	19.20
TOTALS						971.92	765.91	63.38	188.89	141.45	1439.17			46666.13	50095.40
INTEREST ON OPERATING CAPITAL															3343.40
TOTAL SPECIFIED COST															53438.80

Appendix Table 4. Estimated resource use and costs for field operations, per acre, 7 gallon Live Oak in container, 7,000 plants per acre, production and harvest budget, overhead irrigation, purchased liner, USDA Plant Hardiness Zones 8 and 9.

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST DIRECT	POWER UNIT COST FIXED	EQUIPMENT COST DIRECT	EQUIPMENT COST FIXED	ALLOC LABOR HOURS	ALLOC LABOR COST	OPERATING/DURABLE INPUT AMOUNT	OPERATING/DURABLE INPUT PRICE	OPERATING/DURABLE INPUT COST	TOTAL COST
						dollars					dollars			dollars	
Prep. container beds				1.00	Oct										
Blade	6'	2WD50	2.500			20.33	10.75	4.40	11.31	2.50	38.25				85.04
Labor	hour											16.0000	9.60	153.60	153.60
Ground Cover Cloth	roll											12.0000	215.00	2580.00	2580.00
Serve mixer bin				1.00	Oct										
Tractor w/loader	35hp		1.500			19.00	3.04			1.50	14.40				36.44
Prepare media				1.00	Oct										
Media Mixer	3 hp		15.000			46.75	131.36								178.11
Pine bark	cu yd											200.0000	15.00	3000.00	3000.00
Dolomitic lime	lb											800.0000	0.14	112.00	112.00
Micronutrients	lb											300.0000	1.33	399.00	399.00
Osmocote 19-5-11	50 lb											36.0000	60.00	2160.00	2160.00
Labor	hour											13.5000	9.60	129.60	129.60
Move liners				1.00	Oct										
Wagons (3) 1 gal can	5'X12'	35 hp	18.500			128.72	30.52	3.83	13.62	18.50	177.60				354.29
Labor	hour											7.0000	9.60	67.20	67.20
Plant liners				1.00	Oct										
7 gal containers	1000											7.0000	700.00	4900.00	4900.00
Labor	hour											60.0000	9.60	576.00	576.00
Tractor per hour	hour											12.0000	28.14	337.68	337.68
Live Oak liner	each											7000.0000	2.00	14000.00	14000.00
Move cans				1.00	Oct										
Wagon (3) 7 gal can	5'X12'	35 hp	35.000			243.53	57.74	7.25	25.78	35.00	336.00				670.30
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											35.0000	9.60	336.00	336.00
Irrigate 10/1-11/30				29.00	Oct										
PU truck for irrig	1/2 ton		0.100			25.15	21.15			2.90	27.84				74.14
Pumping Cost/ac/inch	inch											29.0000	3.92	113.68	113.68
Spread herbicide				1.00	Nov										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											2.0000	90.00	180.00	180.00
Labor	hour											1.0000	9.60	9.60	9.60
Irrigate 12/1 - 2/28				18.00	Jan										
PU truck for irrig	1/2 ton		0.100			15.61	13.13			1.80	17.28				46.02
Pumping Cost/ac/inch	inch											18.0000	3.92	70.56	70.56
Spread herbicide				1.00	Feb										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											2.0000	90.00	180.00	180.00
Labor	hour											1.0000	9.60	9.60	9.60
Apply pesticides				1.00	Feb										
Sprayer on util veh	100 gal	2WD50	3.000			24.39	12.90	1.20	3.41	3.75	53.10				95.00
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Mancozeb	pt											6.2500	8.66	54.13	54.13
Hand weeding				1.00	Feb										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											4.0000	9.60	38.40	38.40
Irrigate 3/1 - 5/31				29.00	Apr										
PU truck for irrig	1/2 ton		0.100			25.15	21.15			2.90	27.84				74.14
Pumping Cost/ac/inch	inch											29.0000	3.92	113.68	113.68
Apply pesticides				1.00	May										
Sprayer on util veh	100 gal	2WD50	3.000			24.39	12.90	1.20	3.41	3.75	53.10				95.00
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
thiophanate methyl	oz											16.0000	0.60	9.60	9.60
Spread herbicide				1.00	May										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											2.0000	90.00	180.00	180.00
Labor	hour											1.0000	9.60	9.60	9.60
Hand weeding				1.00	May										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											6.0000	9.60	57.60	57.60
Prune				1.00	Jun										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											20.0000	9.60	192.00	192.00
Stake cans				1.00	Jun										
Wagons, 4 wheel	8'X14'	35 hp	0.500			3.48	0.82	0.04	0.16	0.50	4.80				9.30
Stakes, rebar	100											35.0000	50.00	1750.00	1750.00
Labor	hour											30.0000	9.60	288.00	288.00
Irrigate 6/1 - 9/30				88.00	Jul										
PU truck for irrig	1/2 ton		0.100			76.32	64.19			8.80	84.48				224.99
Pumping Cost/ac/inch	inch											88.0000	3.92	344.96	344.96
Spread herbicide				1.00	Aug										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											2.0000	90.00	180.00	180.00
Labor	hour											2.0000	9.60	19.20	19.20
Hand weeding				1.00	Aug										
Labor	hour											4.0000	9.60	38.40	38.40
Apply pesticides				1.00	Aug										
Sprayer airblast tow	300 gal	2WD50	0.250			2.04	1.08	8.40	24.13	0.25	3.83				39.48
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Mancozeb	pt											6.2500	8.66	54.13	54.13

7 gallon Live Oak in container, continued.

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST DIRECT	POWER UNIT COST FIXED	EQUIPMENT COST DIRECT	EQUIPMENT COST FIXED	ALLOC LABOR HOURS	ALLOC LABOR COST	OPERATING/DURABLE INPUT AMOUNT	OPERATING/DURABLE INPUT PRICE	OPERATING/DURABLE INPUT COST	TOTAL COST
						dollars					dollars			dollars	
Topdress fertilizer				1.00	Sep										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Osmocote 14-14-14	50 lb											30.0000	65.00	1950.00	1950.00
Labor	hour											23.0000	9.60	220.80	220.80
Prune				1.00	Sep										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											10.0000	9.60	96.00	96.00
Load onto truck				1.00	Oct										
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											45.0000	9.60	432.00	432.00
Move to holding area				1.00	Oct										
Wagon (3) 7 gal can	5'X12'	35 hp	35.000			243.53	57.74	7.25	25.78	35.00	336.00				670.30
Labor	hour											9.0000	9.60	86.40	86.40
Product Tag	1000											1.7500	49.95	87.41	87.41
Load onto truck				1.00	Oct										
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											35.0000	9.60	336.00	336.00
Irrigate 10/1-11/30				29.00	Oct										
PU truck for irrig	1/2 ton		0.100			25.15	21.15			2.90	27.84				74.14
Pumping Cost/ac/inch	inch											29.0000	3.92	113.68	113.68
Apply pesticides				1.00	Nov										
Sprayer airblast tow	300 gal	2WD50	0.250			2.04	1.08	8.40	24.13	0.25	3.83				39.48
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
thiophanate methyl	oz											16.0000	0.60	9.60	9.60
Hand weeding				1.00	Nov										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											4.0000	9.60	38.40	38.40
Spread herbicide				1.00	Nov										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											2.0000	90.00	180.00	180.00
Labor	hour											1.0000	9.60	9.60	9.60
Irrigate 12/1 - 2/28				18.00	Jan										
PU truck for irrig	1/2 ton		0.100			15.61	13.13			1.80	17.28				46.02
Pumping Cost/ac/inch	inch											18.0000	3.92	70.56	70.56
Hand weeding				1.00	Feb										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											4.0000	9.60	38.40	38.40
Move to holding area				1.00	Mar										
Wagon (3) 7 gal can	5'X12'	35 hp	35.000			243.53	57.74	7.25	25.78	35.00	336.00				670.30
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											27.0000	9.60	259.20	259.20
Product Tag	1000											6.2500	49.95	312.19	312.19
Load onto truck				1.00	Mar										
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											135.0000	9.60	1296.00	1296.00
Irrigate 3/1 - 5/31				15.00	Mar										
PU truck for irrig	1/2 ton		0.100			13.01	10.94			1.50	14.40				38.35
Pumping Cost/ac/inch	inch											15.0000	3.92	58.80	58.80
Cleanup of beds				1.00	Apr										
Wagon, 4 wheel	5' x 12'	35 hp	1.000			5.50	1.65	0.07	0.25	1.00	9.60				17.07
Labor	hour											2.0000	9.60	19.20	19.20
TOTALS						1301.53	675.44	49.29	157.76	186.69	1842.67			38379.78	42406.47
INTEREST ON OPERATING CAPITAL															2820.32
TOTAL SPECIFIED COST															45236.79

Appendix Table 5. Estimated resource use and costs for field operations, per acre, 3 gallon Fig in container, 13,500 plants per acre, production and harvest budget, overhead irrigation, purchased liner, USDA Plant Hardiness Zones 8 and 9.

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST DIRECT	POWER UNIT COST FIXED	EQUIPMENT COST DIRECT	EQUIPMENT COST FIXED	ALLOC LABOR HOURS	ALLOC LABOR COST	OPERATING/DURABLE INPUT AMOUNT	OPERATING/DURABLE INPUT PRICE	OPERATING/DURABLE INPUT COST	TOTAL COST
						dollars					dollars			dollars	
Prep. container beds				1.00	Feb										
Blade	6'	2WD50	2.500			20.33	10.75	4.40	11.31	2.50	38.25				85.04
Labor	hour											16.0000	9.60	153.60	153.60
Ground Cover Cloth	roll											12.0000	215.00	2580.00	2580.00
Serve mixer bin				1.00	Mar										
Tractor w/loader	35hp		1.500			19.00	3.04			1.50	14.40				36.44
Move liners				1.00	Mar										
Wagons (3) liners	5'x12'	35 hp	2.500			17.40	4.12	0.52	1.84	2.50	24.00				47.88
Labor	hour											13.0000	9.60	124.80	124.80
Prepare media				1.00	Mar										
Media Mixer	3 hp		15.000			46.75	131.36								178.11
Pine bark	cu yd											193.0000	15.00	2895.00	2895.00
Dolomitic lime	lb											772.0000	0.14	108.08	108.08
Micronutrients	lb											290.0000	1.33	385.70	385.70
Osmocote 19-5-11	50 lb											36.0000	60.00	2160.00	2160.00
Labor	hour											13.5000	9.60	129.60	129.60
Plant liners				1.00	Mar										
Potting machine 10hp	1500/hr		8.500			69.42	186.09			8.50	130.05				385.56
3 gal containers	1000											13.5000	650.00	8775.00	8775.00
Labor	hour											50.0000	9.60	480.00	480.00
Liner Fig	1000											13.5000	750.00	10125.00	10125.00
Move cans				1.00	Mar										
Wagons (3) 3 gal can	5'X12'	35 hp	18.200			126.63	30.03	3.77	13.40	18.20	174.72				348.55
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											90.0000	9.60	864.00	864.00
Spread herbicide				1.00	Mar										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											1.5000	90.00	135.00	135.00
Labor	hour											1.0000	9.60	9.60	9.60
Irrigate 3/1 - 5/31				29.00	Apr										
PU truck for irrig	1/2 ton		0.100			25.15	21.15			2.90	27.84				74.14
Pumping Cost/ac/inch	inch											29.0000	3.92	113.68	113.68
Hand weeding				1.00	Apr										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											2.0000	9.60	19.20	19.20
Apply pesticides				1.00	Apr										
Sprayer on util veh	100 gal	35 hp	3.000			20.87	4.95	1.20	3.41	3.75	36.00				66.43
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Mancozeb	pt											6.2500	8.66	54.13	54.13
Spread herbicide				1.00	Jun										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											1.5000	90.00	135.00	135.00
Labor	hour											1.0000	9.60	9.60	9.60
Apply pesticides				1.00	Jun										
Sprayer on util veh	100 gal	35 hp	3.000			20.87	4.95	1.20	3.41	3.75	36.00				66.43
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
thiophanate methyl	oz											16.0000	0.60	9.60	9.60
Hand weeding				1.00	Jun										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											2.0000	9.60	19.20	19.20
Space cans on beds				1.00	Jun										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											120.0000	9.60	1152.00	1152.00
Stake cans				1.00	Jul										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Stakes, rebar	100											27.0000	50.00	1350.00	1350.00
Labor	hour											250.0000	9.60	2400.00	2400.00
Irrigate 6/1 - 9/30				88.00	Jul										
PU truck for irrig	1/2 ton		0.100			76.32	64.19			8.80	84.48				224.99
Pumping Cost/ac/inch	inch											88.0000	3.92	344.96	344.96
Hand weeding				1.00	Aug										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											2.0000	9.60	19.20	19.20
Apply pesticides				1.00	Aug										
Sprayer on util veh	100 gal	35 hp	3.000			20.87	4.95	1.20	3.41	3.75	36.00				66.43
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Mancozeb	pt											6.2500	8.66	54.13	54.13
Irrigate 10/1-11/30				10.00	Oct										
PU truck for irrig	1/2 ton		0.100			8.67	7.29			1.00	9.60				25.56
Pumping Cost/ac/inch	inch											10.0000	3.92	39.20	39.20
Move to holding area				1.00	Oct										
Wagons (3) 3 gal can	5'X12'	35 hp	18.200			126.63	30.03	3.77	13.40	18.20	174.72				348.55
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											60.0000	9.60	576.00	576.00
Product Tag	1000											13.5000	49.95	674.33	674.33
Load onto truck				1.00	Oct										
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											120.0000	9.60	1152.00	1152.00
Cleanup of beds				1.00	Oct										
Wagon, 4 wheel	5' x 12'	35 hp	1.000			5.50	1.65	0.07	0.25	1.00	9.60				17.07
Labor	hour											2.0000	9.60	19.20	19.20
TOTALS						662.96	582.20	16.13	50.43	92.35	949.26			37157.80	39418.78
INTEREST ON OPERATING CAPITAL															1914.37
TOTAL SPECIFIED COST															41333.15

Appendix Table 6. Estimated resource use and costs for field operations, per acre, 1 gallon Lantana in containers, production and harvest budget, 30,000 plants per acre, overhead irrigation, purchased liner, USDA Plant Hardiness Zones 8 and 9.

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST DIRECT	POWER UNIT COST FIXED	EQUIPMENT COST DIRECT	EQUIPMENT COST FIXED	ALLOC LABOR HOURS	ALLOC LABOR COST	OPERATING/DURABLE INPUT AMOUNT	OPERATING/DURABLE INPUT PRICE	OPERATING/DURABLE INPUT COST	TOTAL COST
						dollars					dollars			dollars	
Prep. container beds				1.00	Feb										
Blade	6'	2WD50	2.500			20.33	10.75	4.40	11.31	2.50	38.25				85.04
Labor	hour											16.0000	9.60	153.60	153.60
Ground Cover Cloth	roll											12.0000	215.00	2580.00	2580.00
Serve mixer bin				1.00	Mar										
Tractor w/loader	35hp		1.500			19.00	3.04			1.50	14.40				36.44
Move liners				1.00	Mar										
Wagons (3) liners	5'x12'	35 hp	2.500			17.40	4.12	0.52	1.84	2.50	24.00				47.88
Labor	hour											15.0000	9.60	144.00	144.00
Prepare media				1.00	Mar										
Media Mixer	3 hp		15.000			46.75	131.36								178.11
Pine bark	cu yd											150.0000	15.00	2250.00	2250.00
Dolomitic lime	lb											600.0000	0.14	84.00	84.00
Micronutrients	lb											225.0000	1.33	299.25	299.25
Osmocote 14-14-14	50 lb											30.0000	65.00	1950.00	1950.00
Labor	hour											13.5000	9.60	129.60	129.60
Plant liners				1.00	Mar										
Potting machine 10hp	2250/hr		13.300			108.62	291.17			66.50	638.40				1038.19
1 gal containers	1000											30.0000	250.00	7500.00	7500.00
Labor	hour											70.0000	9.60	672.00	672.00
Liner Lantana	1000											30.0000	500.00	15000.00	15000.00
Move cans				1.00	Mar										
Wagons (3) 1 gal can	5'X12'	35 hp	18.500			128.72	30.52	3.83	13.62	18.50	177.60				354.29
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											120.0000	9.60	1152.00	1152.00
Spread herbicide				1.00	Mar										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											1.5000	90.00	135.00	135.00
Labor	hour											1.0000	9.60	9.60	9.60
Space cans on beds				1.00	Apr										
Labor	hour											180.0000	9.60	1728.00	1728.00
Irrigate 3/1 - 5/31				29.00	Apr										
PU truck for irrig	1/2 ton		0.100			25.15	21.15			2.90	27.84				74.14
Pumping Cost/ac/inch	inch											29.0000	3.92	113.68	113.68
Hand weeding				1.00	Apr										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											2.0000	9.60	19.20	19.20
Apply pesticides				1.00	Apr										
Sprayer on util veh	100 gal	20	3.000			7.11	19.22	1.20	3.41	3.75	53.10				84.04
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Kocide DF	lb											6.2500	5.20	32.50	32.50
Prune				1.00	May										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											2.0000	9.60	19.20	19.20
Apply pesticides				1.00	May										
Sprayer on util veh	100 gal	20	3.000			7.11	19.22	1.20	3.41	3.75	53.10				84.04
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
thiophanate methyl	oz											16.0000	0.60	9.60	9.60
Irrigate 6/1 - 9/30				10.00	Jun										
PU truck for irrig	1/2 ton		0.100			8.67	7.29			1.00	9.60				25.56
Pumping Cost/ac/inch	inch											10.0000	3.92	39.20	39.20
Hand weeding				1.00	Jun										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											4.0000	9.60	38.40	38.40
Move to holding area				1.00	Jun										
Wagons (3) 1 gal can	5'X12'	35 hp	18.500			128.72	30.52	3.83	13.62	18.50	177.60				354.29
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											80.0000	9.60	768.00	768.00
Product Tag	1000											30.0000	49.95	1498.50	1498.50
Load onto truck				1.00	Jun										
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											180.0000	9.60	1728.00	1728.00
Cleanup of beds				1.00	Jun										
Wagon, 4 wheel	5' x 12'	35 hp	1.000			5.50	1.65	0.07	0.25	1.00	9.60				17.07
Labor	hour											2.0000	9.60	19.20	19.20
TOTALS						575.18	630.89	15.05	47.46	135.40	1348.29			38133.19	40750.06
INTEREST ON OPERATING CAPITAL															1042.49
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															41792.55

Appendix Table 7. Estimated resource use and costs for field operations, per acre, 1 gallon Liriope in container, 30,000 plants per acre, production and harvest budget, overhead irrigation, purchased liner, USDA Plant Hardiness Zones 8 and 9.

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST DIRECT	POWER UNIT COST FIXED	EQUIPMENT COST DIRECT	EQUIPMENT COST FIXED	ALLOC LABOR HOURS	ALLOC LABOR COST	OPERATING/DURABLE INPUT AMOUNT	OPERATING/DURABLE INPUT PRICE	OPERATING/DURABLE INPUT COST	TOTAL COST
						dollars					dollars			dollars	
Prep. container beds				1.00	Feb										
Blade	6'	2WD50	2.500			20.33	10.75	4.40	11.31	2.50	38.25				85.04
Labor	hour											16.0000	9.60	153.60	153.60
Ground Cover Cloth	roll											12.0000	215.00	2580.00	2580.00
Serve mixer bin				1.00	Mar										
Tractor w/loader	35hp		1.500			19.00	3.04			1.50	14.40				36.44
Move liners				1.00	Mar										
Wagons (3) liners	5'x12'	35 hp	2.500			17.40	4.12	0.52	1.84	2.50	24.00				47.88
Labor	hour											15.0000	9.60	144.00	144.00
Prepare media				1.00	Mar										
Media Mixer	3 hp		15.000			46.75	131.36								178.11
Pine bark	cu yd											150.0000	15.00	2250.00	2250.00
Dolomitic lime	lb											600.0000	0.14	84.00	84.00
Micronutrients	lb											225.0000	1.33	299.25	299.25
Osmocote 14-14-14	50 lb											30.0000	65.00	1950.00	1950.00
Labor	hour											13.5000	9.60	129.60	129.60
Plant liners				1.00	Mar										
Potting machine 10hp	2250/hr		13.300			108.62	291.17			66.50	638.40				1038.19
1 gal containers	1000											30.0000	250.00	7500.00	7500.00
Labor	hour											70.0000	9.60	672.00	672.00
Liner Liriope	1000											30.0000	350.00	10500.00	10500.00
Move cans				1.00	Mar										
Wagons (3) 1 gal can	5'X12'	35 hp	18.500			128.72	30.52	3.83	13.62	18.50	177.60				354.29
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											120.0000	9.60	1152.00	1152.00
Spread herbicide				1.00	Mar										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											1.5000	90.00	135.00	135.00
Labor	hour											1.0000	9.60	9.60	9.60
Irrigate 3/1 - 5/31				29.00	Apr										
PU truck for irrig	1/2 ton		0.100			25.15	21.15			2.90	27.84				74.14
Pumping Cost/ac/inch	inch											29.0000	3.92	113.68	113.68
Hand weeding				1.00	Apr										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											2.0000	9.60	19.20	19.20
Apply pesticides				1.00	Apr										
Sprayer on util veh	100 gal	35 hp	3.000			20.87	4.95	1.20	3.41	3.75	36.00				66.43
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Mancozeb	pt											6.2500	8.66	54.13	54.13
Apply pesticides				1.00	Jun										
Sprayer on util veh	100 gal	35 hp	3.000			20.87	4.95	1.20	3.41	3.75	36.00				66.43
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
thiophanate methyl	oz											16.0000	0.60	9.60	9.60
Hand weeding				1.00	Jun										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											2.0000	9.60	19.20	19.20
Spread herbicide				1.00	Jun										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Ronstar	50 lb											1.5000	90.00	135.00	135.00
Labor	hour											1.0000	9.60	9.60	9.60
Irrigate 6/1 - 9/30				88.00	Jul										
PU truck for irrig	1/2 ton		0.100			76.32	64.19			8.80	84.48				224.99
Pumping Cost/ac/inch	inch											88.0000	3.92	344.96	344.96
Hand weeding				1.00	Aug										
Utility vehicle	20 hp		1.000			2.15	5.59			1.00	9.60				17.34
Labor	hour											2.0000	9.60	19.20	19.20
Apply pesticides				1.00	Aug										
Sprayer on util veh	100 gal	35 hp	3.000			20.87	4.95	1.20	3.41	3.75	36.00				66.43
Horticultural oil	gal.											0.7500	30.00	22.50	22.50
Acephate 75 WP	lb.											1.0000	7.83	7.83	7.83
Mancozeb	pt											6.2500	8.66	54.13	54.13
Irrigate 10/1-11/30				10.00	Oct										
PU truck for irrig	1/2 ton		0.100			8.67	7.29			1.00	9.60				25.56
Pumping Cost/ac/inch	inch											10.0000	3.92	39.20	39.20
Move to holding area				1.00	Oct										
Wagons (3) 1 gal can	5'X12'	35 hp	18.500			128.72	30.52	3.83	13.62	18.50	177.60				354.29
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											80.0000	9.60	768.00	768.00
Product Tag	1000											30.0000	49.95	1498.50	1498.50
Load onto truck				1.00	Oct										
Conveyor	16"		30.000			14.50	12.84			3.00	28.80				56.14
Labor	hour											180.0000	9.60	1728.00	1728.00
Cleanup of beds				1.00	Oct										
Wagon, 4 wheel	5' x 12'	35 hp	1.000			5.50	1.65	0.07	0.25	1.00	9.60				17.07
Labor	hour											2.0000	9.60	19.20	19.20
TOTALS						702.04	677.08	16.25	50.87	148.95	1444.17			32481.64	35372.05
INTEREST ON OPERATING CAPITAL															1731.78
TOTAL SPECIFIED COST															37103.83

Appendix Table 8. Tractors/Harvesters: estimated purchase price, annual use, useful life, fuel use, and direct and fixed cost per hour, ornamentals budgets, 2008.

Item Name	Size	Purchase Price	Annual Use	Useful Life	Fuel Use	Labor	Fuel	R&M	Total Direct	Fixed	Total Cost
		dollars	hours	years	gal/hr	$/hour					
Tractor (35 hp)	35 hp	12,200	1000	10	2.00	9.60	5.86	1.09	16.55	1.64	18.20
Tractor w/loader	35hp	12,000	1000	10	2.00	15.30	5.86	1.08	22.24	1.62	23.86
Tractor w/loader	60 hp	20,000	1000	10	3.86	9.60	11.31	1.80	22.71	2.70	25.41
Tractor(40-59hp)RB	2WD50	18,914	600	8	2.57	15.30	7.54	0.59	23.43	4.30	27.73
Utility vehicle	20	9,725	200	10	0.60	15.30	1.39	0.97	17.67	6.40	24.07

Notes: Labor - Includes allocated labor from power unit.
Total Direct: Does not include interest on operating capital.

Appendix Table 9. Implements: estimated purchase price, annual use, useful life, performance rate, and direct and fixed cost per acre, ornamentals budgets, 2008.

Item Name	Size	Power Unit	Purchase Price	Annual Use	Useful Life	Perf Rate	Labor	Fuel	R&M Imp.	R&M P.U.	Total Direct	Fixed Imp.	Fixed P.U.	Total Cost
			dollars	hours	years	hr/ac	$/acre							
Blade	6'	2WD50	2,000	50	15	2.500	38.25	18.85	4.40	1.47	62.97	11.31	10.75	85.04
Sprayer airblast tow	300 gal	2WD50	15,883	27	7	0.250	3.82	1.88	8.40	0.14	14.26	24.12	1.07	39.46
Sprayer on util veh	100 gal	20	800	100	10	3.000	53.10	4.19	1.20	2.91	61.41	3.41	19.22	84.04
Wagon (3) 7 gal can	5'X12'	35 hp	2,850	550	10	35.000	336.00	205.10	7.25	38.43	586.78	25.77	57.74	670.30
Wagon, 4 wheel	5' x 12'	35 hp	950	550	10	1.000	9.60	5.86	0.06	1.09	16.62	0.24	1.64	18.52
Wagons (2) 1 gal can	8'X14'	35 hp	3,000	550	10	15.000	144.00	87.90	3.27	16.47	251.64	11.62	24.74	288.01
Wagons (3) 1 gal can	5'X12'	35 hp	2,850	550	10	18.500	177.60	108.41	3.83	20.31	310.15	13.62	30.51	354.30
Wagons (3) 3 gal can	5'X12'	35 hp	2,850	550	10	18.200	174.72	106.65	3.77	19.98	305.12	13.40	30.02	348.55
Wagons (3) liners	5'x12'	35 hp	2,850	550	10	2.500	24.00	14.65	0.51	2.74	41.91	1.84	4.12	47.87
Wagons, 4 wheel	8'X14'	35 hp	1,200	550	10	1.000	9.60	5.86	0.08	1.09	16.64	0.31	1.64	18.60

Notes: Labor - Includes labor from Power unit plus additional labor from the implement.
Total Direct: Does not include interest on operating capital.

Appendix Table 10. Operating inputs: estimated prices, ornamental plants budgets, 2008.

ITEM NAME	UNIT	PRICE			
		dollars			dollars
FERTILIZERS					
Dolomitic lime	lb	0.14	Micronutrients	lb	1.33
Osmocote 14-14-14	50 lb	65.00	Osmocote 19-5-11	50 lb	60.00
FUNGICIDES					
Kocide DF	lb	5.20	Mancozeb	pt	8.66
thiophanate methyl	oz	0.60			
GREENHOUSE SUPPLIES					
Chlorine bleach	gal	1.00	Shade cloth	each	600.00
HARVEST					
Product Tag	1000	49.95			
HERBICIDES					
Glyphosate	gal	20.00	Pendulum	gal	38.00
Ronstar	50 lb	90.00	Surfactant	gal	27.50
INSECTICIDES					
Acephate 75 WP	lb.	7.83	Floramite	qt	242.00
Horticultural oil	gal.	30.00			
LABOR					
Labor	hour	9.60	Prune labor	hour	9.60
OTHER					
End-wall plastic	roll	80.00	Pumping Cost/ac/inch	inch	3.92
PLANTING					
Dip n Grow	gal.	160.00	Liner Azalea	1000	500.00
Liner Crape Myrtle	1000	500.00	Liner Fig	1000	750.00
Liner Lantana	1000	500.00	Liner Liriope	1000	350.00
Live Oak liner	each	2.00	Pine bark	cu yd	15.00
Pot inserts 3.25"	box	40.00	Trays	bundle	18.00
1 gal containers	1000	250.00	3 gal containers	1000	650.00
7 gal containers	1000	700.00	Frost prot. blanket	roll	277.00