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## Preliminary Report on LABOR AND MATERIALS REQUIRED For Some Florida Crops

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# PRELIMINARY REPORT ON LABOR AND MATERIALS REQUIRED FOR SOME FLORIDA CROPS

By J. E. TURLINGTON AND FRANK W. BRUMLEY

Students and teachers of agriculture, new settlers, developers, farmers considering the planting of new crops, and others are interested in the labor and materials required for different crops. The information may be used in figuring costs of growing the crops, in determining how various crops compete with each other for labor, and in calculating the area that may be grown with a given amount of labor.

It is recognized that both labor and material requirements may vary from season to season, from farm to farm, and from section to section. In case of certain materials like poisons and fertilizers, they may vary from zero on some farms to quite large amounts on others. The labor requirements also may vary greatly, as in cases where the crop was a partial or total failure due to climatic conditions, or where a part or all of the crop was left unharvested because the price was too low to pay for the harvesting and shipping costs. Notwithstanding these variations which are inevitable, it is believed that the results presented in tables I and II represent the average labor requirements for the various crops in the communities studied; exceptions occur in the cases of fall and spring beans and peanuts, as these crops were low in man labor because of the low yields, which influenced the harvest labor and therefore the total labor required. The figures presented are for the year 1926 for all crops, except that fall beans, fall peppers, and potatoes are for 1925, and cucumbers at Williston for 1923.

The number of farms, acres studied, and yield per acre for each crop is presented in table II and also in the paragraph devoted to each crop under "Materials Required."

The survey method was used in collecting the information. The figures were secured by personal interviews with the farmers, obtaining in each case a record by half months of the man, horse, truck, and tractor labor spent on each operation for the crop under investigation. A record of the materials used was also taken at the same time.

Men trained in agriculture and who are familiar with practical phases of farming secured the figures. The records taken during each day were exchanged at night and checked for any errors or omissions. In cases of any question of error or omission, the farmers were interviewed again and proper corrections made. These field records were then brought into the office, rechecked and summarized. The results of these summaries are presented on the following pages.

### LABOR DISTRIBUTION BY OPERATIONS

In table I is given the average number of hours per acre of man, horse, truck, and tractor labor for each of the important operations, as well as the total labor required per acre for each crop.

It should be noted that no distinction has been made in the tables between men, women, and children, but almost without exception work done by women was rated fully equal to that of men. Some slight allowance should be made for children, whose rate of work generally averaged about three-fourths that of the women, as in the case of picking strawberries, where approximately one-third of the harvesting labor was done by children. On a man or woman equivalent basis therefore, the harvesting labor for strawberries would have been about fifty hours less per acre, or five hundred thirty-five hours instead of five hundred eighty-five.

Another point to which attention should be called is that throughout the tables the labor requirements are based on the average amount of work done per acre for the entire acreage studied. In a number of instances, therefore, the labor required for certain operations may appear small—for example: under fall beans we have .3 of an hour per acre for spraying and dusting, for the reason that seventy acres out of the three hundred fifteen acres studied were sprayed or dusted, thereby requiring about 1.4 hours per acre for the area that was actually dusted.

By referring to the paragraph on material requirements for each crop, it will be possible to determine the area covered by any material; this will not, however, give the area hoed nor the number of times hoed, etc. It is expected to give this information in detail for each crop in a later report, not only for the

TABLE 1.—Distribution of man, horse, truck and tractor hours of labor by operations, and the total labor per acre for the various crops.

OPERATIONS		BEANS Fall SUMMER	BEANS Spring SUMMER	CABBAGE SUMMER	CELERY SEMINOLE	CORN JACKSON	CORN AND SUMMER	CORN AND GILCHRIST	COTTON JACKSON	CUCUMBER Open Levy	CUCUMBER Tough SUMMER	EGGPLANT Spring MANATEE	CANE JACKSON	LETTUCE MANATEE	PEPPER Fall MANATEE	POTATOES ST. JOHNS	STRAW- BERRIES HILLSBORO	TOBACCO Bright MADISON	TOBACCO Shade MADISON	TOMATOES MANATEE	WATER- MELONS GILCHRIST	WATER- MELONS JACKSON	SPANISH PRANISH JACKSON
Seed Bed Labor—																							
Man					72.9							21.2		20	20.5		122			8.1			
Horse					4.5							1.9		1.5	1.2		12.4			.8			
Tractor					.6												.5						
Preparation of Land—																							
Man		9	9.8	28.7	29.3	8.2	1.7	7.2	10.6	21.3	36.5	17.1	7.4	32.4	23.7	12.8	23.2	15.7	15.6	9	9	11.3	
Horse		8.2	9.5	32.6	30.2	15.6	2.1	13.1	17.9	29.7	25.7	24	13.1	37.7	27.4	22.9	24.9	25.4	48.3	15	15.8	19.3	
Tractor		2.5	1.4	1.8	7.5						2.2	.3		1.1	2.2	1.5	2.1		3.5		.5		
Fertilizing and Manuring																							
Man		2.6	2.9	6	28.2	.8	.2		3.9	1.3	13.3	19.5	2.8	7.3	20	3.4	35.2	10.5	32.6	9.5	2.5	1.5	
Horse		2.2	2.7	1.8	22.2	.9	.2		4.4	.1	3.2	4.7	3.7	3.6	15	3.6	2.6	8	22.8	6.9	2.1	1.6	
Truck		.2	.2		2.9						.9	2.1		.3	.9	.9	1.5			1.1			
Planting—																							
Man		2	2	35.6	201.9	1.6	1.6	2.1	1.9	4.3	8.5	26.9	14.3	85.2	51.5	3.8	125.4	49.9	45.1	27.9	3.3	2.5	
Horse						1.6	1.5	2.1	1.9	2.3	.6		7.4		4.6		4.8	8.2		.5		2.4	
Cultivating—																							
Man		9.5	10.6	23.3	28.2	7.1	8.7	6	13.7	12.6	16.3	44.5	14.3	21.4	27	8.3	27.2	28.3	42	20.8	8.6	9.1	
Horse		9.5	10.6	23.3	28.2	10.7	8.7	8.4	18.1	12.6	16.3	44.5	21.5	6.4	27	11.9	27.2	26.8	42.1	20.7	8.7	11.7	
Spraying and Dusting—																							
Man		.3		.5	31.4					2.2	25.6	26.5			11.8	1.6	9.7	41.4	122.6	8.6	.3		
Horse					28.8					.6	10.2	1			1.4	2.8	1.2			3.8			
Hoeing—																							
Man				17.1	17			3	19.4	20.1	28.2	40.7	17.7	60.3	45.1	.2	234	17.6	29.2	20.4	3.9	5.1	
Miscellaneous Labor—																							
Man					38.2			4		25.4	15.5	2.9	2.9	8.2	4	13	12.2	46.3	58.5	163.4	6.5	2.7	
Horse					1					.1						.6				1.4			
Truck					1.6					.1													
Total Cultural Labor—																							
Man		23.4	25.3	111.2	447.1	17.7	12.2	22.3	49.5	61.8	153.8	211.9	59.4	234.8	203.6	43.1	588.9	209.7	364.2	274.3	33.7	40.7	
Horse		21.9	24.7	63.2	114.9	28.8	12.5	23.6	42.3	45.3	56.1	76.1	45.7	49.2	72	46.4	68.3	65	121.4	48.6	28.6	40.3	
Truck		2	2	1	4.5						1	2.1		3	9	9	1.5			3.5			
Tractor		2.5	1.4	1.8	8.4						2.2	.3		1.1	2.2	1.5	2.6			1.1		.5	
Harvesting—																							
Man		62.5	58.2	37.8	271.3	7.9	9.3	5.4	54.7	75	123	208.3	177.2	96.7	145.2	80.4	585.6	425.7	623.6	84.4	16.9	29.4	
Horse						5.4	10.1	4					1			11.1		37		2.7		10.6	
Engine																							
Hauling to Market—																							
Man		2.9	1.5	9.9	14				4.5	21.4	14.1	35.3	6.5	7.9	18.2	3	21.9	5.3	5.2	7	6.2	1.4	
Horse		1.1	.3	7.6	2.8				7.3	23.3	5.4	13		11.8	11	.1	4.5	6.9	1.9	4.2	15.2	2.6	
Truck		1.6	1	4.7	12.4						9.9	26.7	.1	.9	7.2	2.7	21.8	3.1	1.4	5.4	1.1		
Total Labor Per Acre—																							
Man		88.8	85	158.9	732.4	25.6	21.5	27.7	108.7	158.2	290.9	450.5	243.1	339.4	367	126.5	1196.4	640.7	993	365.7	56.8	71.5	
Horse		22	25	80.8	117.7	34.2	22.6	27.6	49.6	68.6	61.5	76.1	121	61	83	57.6	68.3	106.5	158.7	50.5	35.5	45.2	
Truck		1.8	1.2	4.8	16.9		.3		3.1		2.2	.3	.1	1.2	1.1	1.2	3.1		1.4	1.4	1.1		
Tractor		.5	1.4	1.8	8.4						2.2	.3		1.1	2.2	1.5	2.6			3.5		.5	

crops here presented but also for a number of other crops. In this brief preliminary report we must content ourselves with averages for the farms studied.

By referring to table I, it may be seen that the man labor requirements vary from 21.5 hours per acre for corn in Sumter County to 1196.4 hours per acre for strawberries in Hillsborough County. In Sumter County, corn followed cabbage, beans and other truck crops with little or no extra preparation of the land; therefore the labor for preparation was much less for corn in Sumter County than in Jackson County, where it was necessary to plow the land in preparation for planting. Spring beans, fall beans, cotton, open cucumbers, egg plant, cane, potatoes, strawberries, bright tobacco, and shade tobacco required more man labor for harvesting and hauling to market than for preparation, planting and all the cultural operations combined. Cane was the only crop studied which required more than half of the total horse labor per acre at harvesting time.

Trucks were used largely for hauling the crop to market, and to some extent for hauling fertilizer and other materials. Tractors were used almost exclusively in the preparation of the land.

### SEASONAL DISTRIBUTION OF LABOR

Table II presents the distribution of man and horse labor by half months for each of the crops. By reference to this table, one should be able to determine the number of workers necessary for any particular period of the year, with given areas in specific crops.

For fall beans the horse labor was heaviest in September, and man labor in November; while for spring beans, horse labor was heaviest in February and man labor in April. For strawberries some work was done every month in the year, although it was by no means evenly distributed. On the other hand with spring beans, all the work was done the first four months of the year, and practically all the work on fall beans was in the last four months of the year. Celery, cotton, eggplant, strawberries, and shade tobacco were the only crops studied which did not have at least three months during which no work was done in connection with the crop on any of the farms. Eggplants would have fallen in this group also but for the fact that one farmer out of eight began his preparation a half month ear-



TABLE II—(Continued).

CROPS	No. Farms	No. Acres	Average Yield	JAN.		FEB.		MARCH		APRIL		MAY		JUNE		JULY		AUG.		SEPT.		OCT.		NOV.		DEC.		Total Hours Labor									
				1-15	16-31	1-14	15-28	1-15	16-31	1-15	16-30	1-15	16-31	1-15	16-30	1-15	16-31	1-15	16-30	1-15	16-31	1-15	16-30	1-15	16-31	1-15	16-30		1-15	16-31							
<b>Peanuts</b>	11 349		16																																		
Man			Bu.	9	1.6	2.7	1.2	4.1	3	5.4	2.5	4.6	6.7	4.6	4.6	1.4	.9	1.2	4.7	3.7	8.5	4.3	2.5	5.6	3	1.1	1.1	1.1	71.5								
Horse				1.6	3	5.5	1.7	3.7	1.7	6	3	4.6	2.9	2.9	1.9	1.9	.7	1.1	2.5	.3	2.9	1	1.6	3.5	.7	.7	.7	53.5									
<b>Peppers</b>	9 44.5		282																																		
Man			Crates	14.6	4.8	3.5													.1	7.7	19	50.3	29.9	21.3	16.2	44.5	54.8	7.8	7.8	6.1	4.5	4	81.8				
Horse				1.9	1.2	.7														10.3	20.1	3.7	8	7.8	7.8	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7				
<b>Potatoes—Irish</b>	202 9155		52																																		
Man			Bbbs.	7.5	6.1	2.8	3.4	3.9	6.3	16.8	39.8	22.5	1.3	6.7	21.9	9.1	16.8	9.1	13.1	13.5	12.2	34.4	79.6	69.4	51.4	40	30.9	48.1	1196.4								
Horse				4	3.7	3	3.8	4	3	3	5.6	3	.2	2.3	1.6	.9	2.1	.4	3.6	3.2	4.7	10.8	7.7	3.1	3.8	3.6	4	4.4	68.3								
<b>Strawberries</b>	15 81		2439																																		
Man			Qts.	80.3	114	145.6	150.2	124.8	88	30.9	2.3	4.1	1.1	2.3	1.6	.9	2.1	.4	3.6	3.2	4.7	10.8	7.7	3.1	3.8	3.6	4	4.4	68.3								
Horse				2.4	2.8	2.5	1.8	.7	.5	.2	.1	1.1	.2	2.3	1.6	.9	2.1	.4	3.6	3.2	4.7	10.8	7.7	3.1	3.8	3.6	4	4.4	68.3								
<b>Tobacco—Bright</b>	8 81		865																																		
Man			Lbs.	3.3	7.7	.5	.4	4.2	19.9	47.4	20.9	24.2	8.9	22.9	22.2	137.9	134.7	127.5	60.9	3.3																	
Horse				6.7	9.7	.7	.5	4.4	7.6	5.4	5.2	8.9	8	8	3.1	12.5	13.4	11.3	3.7	.5																	
<b>Tobacco—Shade</b>	9 189		1110																																		
Man			Lbs.	7	11.4	6.5	7.3	13.1	12.9	48	71.1	73.5	54.5	128.4	170.6	174.7	115	61.4	18.5																		
Horse				8.3	10.3	6	6.1	7.9	4.7	11.3	11.3	10.1	8.2	12.9	12.1	10.9	4.4	3.8	1.7																		
<b>Tomatoes</b>	14 250.5		212																																		
Man			Crates	3.2	17.2	30.1	21.5	36.3	44.9	47.6	50.1	54	38.1	7.7																							
Horse				3.7	6.9	3.5	7.3	7.6	7.2	4	2	1.3	.8	.2																							
<b>Watermelons</b>	14 372		.34																																		
(Glichrist)			Car	2.8	2.4	2.4	2.1	2.3	3.1	3.6	3.4	2.6	1.5	6.4	12.2	8.3																					
Man				5.5	2.6	3.1	.7	1.1	2.3	1.7	1.9	2.4	.4	3.2	2.3																						
Horse																																					
<b>Watermelons</b>	6 45		.28																																		
Man			Car	1	2.9	1.3	2	5.8	3	3	4.1	4.5	2.4	2.5	9.4	12.1	2.3	.5																			
Horse				1.9	5.8	1.5	2.5	6.2	1.1	3	3.6	2.2	2	2	5.4	9.5	.2	.2																			

\*Peanuts were harvested by hogs.

lier than the others. Fall beans, spring beans, trough cucumbers, lettuce, and peppers had five months or more in which no work was done in connection with the crop.

In the cases of eggplant, lettuce, peppers, and tomatoes the distribution of seed bed labor was not included in table II and therefore the total labor shown in table II for these four crops is short by the amount of the seed bed labor, found in table I.

### MATERIALS REQUIRED

The number of farms, acres covered, and materials required per acre are listed below under the head of each crop. Each material used in producing the crop is listed as the average amount used per acre on the entire acreage studied for the particular crop. But in many instances certain materials were applied to only a part of the acreage. In such cases the number of acres on which the material was applied *and the amounts actually applied per acre are given in parenthesis* following the amount for the entire acreage. This may be illustrated by the dust applied to fall beans: though there was an average of only 3.1 lbs. of dust for the 315 acres, it was all applied to 70 acres at the rate of 14.2 lbs. per acre.

The crops of eggplants, peppers, and tomatoes were packed in packing houses at a contract price to cover labor and materials. Therefore the materials listed herein for these three crops do not include materials for packing, but do include all other materials up to delivery of the crop in field boxes to the packing house.

Gasoline and oil used by trucks for hauling materials and hauling the crop to market are not given, but the time required per acre is given in table I. Gasoline and oil used by tractors for plowing and harrowing, and by engines for irrigation was included and is listed with the other materials.

Most farmers prepared their own seed beds when plants were to be transplanted to the field, as in the case of celery, cabbage, eggplant, lettuce, peppers, strawberries, bright and shade tobacco, and tomatoes. In some instances the materials used upon the seed bed are listed separately from those applied to the field crop, but are based upon the same number of acres. Some materials, such as cloth, frames, wire and lumber were difficult

to obtain in uniform units, therefore the value per acre with the annual depreciation is given instead.

**BEANS:** Sumter County.—Twelve farms were studied near Center Hill, eleven of which grew 397.5 acres of spring beans yielding an average of 48 hampers (28 qt.), and nine that grew 315 acres of fall beans with an average yield of 61 hampers. The yield on spring beans was low because of heavy spring rains, while the fall beans were badly damaged by frosts. Had the yield been normal the principal effect upon materials would have been an increase in the number of hampers.

For 397.5 acres planted in spring beans the materials per acre were as follows: seed .5 bu.; fertilizer 301 lbs.; hampers 48 (on 374 acres harvested, the average was 51 hampers); gasoline 2.1 gal. and oil .1 gal. for tractor. (369 acres averaged 2.3 gal. of gasoline and .1 gal. of oil.)

Fall beans required the following materials per acre for 315 acres: seed .52 bu.; fertilizer 376 lbs.; hampers 61; lime sulphur dust 3.1 lbs. (70 acres averaged 14.2 lbs.); gasoline 3.9 gal. and oil .2 gal. for tractor. (285 acres averaged 4.3 gal. gasoline and .2 gal. oil.)

**CABBAGE:** Sumter County.—Information was obtained from 13 farms near Coleman, covering 163 acres of cabbage with an average yield of 163 crates (3.2 bu.) per acre. About 43% of the crop was shipped in hampers approximately one-half the size of the crates. Some of the farmers used both crates and hampers. The materials below also include the materials used on the seed bed, which was usually a part of the final acreage. Seed were planted thick at first either in hills or in the drill, and later thinned to secure plants for the remaining acres.

The materials used per acre were: seed 1.5 lbs.; nitrate of soda 91.3 lbs. (on 158 acres where used the average was 94.2 lbs.); complete fertilizer 1072 lbs.; nails .1 keg (93 acres averaged .14 keg); poison\* 5.8 lbs. (119 acres averaged 7.9 lbs.); gasoline 2.5 gal. and oil .13 gal. for tractor, (48 acres averaged 8.5 gal. gasoline and .43 gal. of oil); crates 93, (93 acres averaged 163 crates); hampers 140 (70 acres averaged 326 hampers).

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\*Poison throughout this report refers to a mixture of paris green, shorts and molasses for poisoning worms.

**CELERY:** Seminole County.—The study on celery covered 13 farms near Sanford including 187.5 acres with an average yield of 642 crates (2 bu.). The same paper and wire for bleaching was used on an average about three times during the year. This was possible because the period of maturity was spread over a number of weeks. It was necessary therefore for the farmers to own only about enough paper and wire to cover one-third of the total acreage.

Seed bed materials include the following: seed .4 lbs.; manure 346 lbs. (on the 27.5 acres where used the average was 2363 lbs.); fertilizer 138 lbs. (158 acres averaged 163 lbs.); ashes 81 lbs. (143.5 acres averaged 105 lbs.); castor pomace 65 lbs. (137.5 acres averaged 89 lbs.); lime for bordeaux 4.2 lbs.; bluestone for bordeaux 3.7 lbs.; bordeaux dust 1.5 lbs. (19.5 acres averaged 15 lbs.); cloth valued at \$17.52 with 38% depreciation annually; frames and wire valued at \$5.98 with 28% depreciation; clothes pins 144 with 30% depreciation.

The following materials were used per acre on the field crop: complete fertilizer (usually a 5-5-5 formula) 7180 lbs.; wood ashes 1061 lbs. (on 98.5 acres where used the average was 2020 lbs.); goat manure 325 lbs. (44 acres averaged 1386 lbs.); castor pomace 1473 lbs. (140.5 acres averaged 1967 lbs.); tankage 183 lbs. (54 acres averaged 635 lbs.); nitrate of soda 428 lbs. (176.5 acres averaged 458 lbs.); potash 141 lbs. (66 acres averaged 400 lbs.); Kainit 40 lbs. (15 acres averaged 500 lbs.); nails .67 keg; crates 642; gasoline 14.2 gal., and oil .9 gal., for tractor, (160.5 acres averaged 16.5 gals. gasoline and 1.1 gal. oil); poison 33 lbs. (128 acres averaged 49 lbs.) paris green .5 lb., (21 acres averaged 4.5 lbs.); lime sulphur dust 8 lbs., (19 acres averaged 79 lbs.); lime sulphur spray 2.5 gal., (102.5 acres averaged 4.6 gal.); lime for bordeaux 182 lbs.; bluestone for bordeaux 162 lbs.; bleaching paper 35.5 rolls (60.2 acres averaged 110.2 rolls); with annual depreciation of 37%; wire for bleaching 302 lbs. (67.5 acres averaged 839 lbs.) with depreciation of 12.5%.

**CORN AND PEANUTS:** Gilchrist County.—Materials were obtained for this crop from eleven farms at Trenton covering 575 acres. The corn yielded an average of 11.3 bu. The peanuts were harvested by hogs except 5 acres which averaged 45 bu. per acre. Seeds used per acre were .45 bushel of peanuts

and .12 peck of corn. The seed peanuts for 233 acres were shelled for planting while 342 acres were planted in the hull.

**COTTON:** Jackson County.—Fourteen farms containing 293 acres near Greenwood and Malone produced an average yield of 169 lbs. of lint cotton and 323 lbs. of seed per acre. The materials applied per acre were: seed .85 bu.; fertilizer 495 lbs.; manure 259 lbs. (on 83 acres where applied the average was 915 lbs.); nitrate of soda 15 lbs. (22 acres averaged 200 lbs.); bagging and ties \$ .66 per acre or \$1.95 per bale; ginning \$ .84 per acre or \$2.48 per bale.

**CUCUMBERS:** Levy County.—Cucumbers were studied at Williston and covered 698.35 acres on 100 farms with an average yield of 120 hampers (28 qt.).

The following materials were used per acre: seed 3.2 lbs.; manure 247 lbs. (on 34.5 acres where applied the average was 5001 lbs.); fertilizer 1503 lbs. (694 acres averaged 1513 lbs.); hampers 120; nitrate of soda 45 lbs. (325 acres averaged 96 lbs.); and a cost for spray materials of \$ .96, (122 acres averaged \$5.49).

**CUCUMBERS:** Sumter County.—Cucumbers were also studied at Webster where they were grown more intensively than at Williston. Troughs were used to protect the young plants from cold and frosts. Twelve farms with a total of 85.75 acres gave an average yield of 297 hampers, (28 qt.) per acre.

The materials used per acre were: seed 9 lbs.; fertilizer 1672 lbs.; cotton seed meal 391 lbs. (on 32.75 acres where applied the average was 1023 lbs.); lime for bordeaux 29.4 lbs.; bluestone for bordeaux 14.4 lbs.; black leaf-40, .37 gal. (50.75 acres averaged .63 gal.); lead arsenate .2 lb. (1.75 acres averaged 8.5 lbs.); sulphur 1 lb. (3 acres averaged 33 lbs.); gasoline 3.1 gal. and oil .2 gal., for tractor, (62 acres averaged 4.3 gal. of gasoline and .3 gal. of oil); gasoline 5.8 gals., and oil .3 gal. for irrigation, (19.75 acres averaged 25.1 gal. of gasoline and 1.2 gals. of oil); hampers 297.

Besides the above materials wooden troughs were used that were valued at \$323.60 per acre with a yearly depreciation, including repairs, of about 9 percent.

**EGGPLANT:** Manatee County.—An average yield per acre of 528 crates (1.6 bu.) was obtained for 29 acres on eight farms near Palmetto.

The seed bed materials were as follows: Seed .38 lbs.; fertilizer 117 lbs.; ashes 13.7 lbs. (on 8 acres where applied the average was 50 lbs.); lime for bordeaux .5 lbs. (6 acres averaged 2.4 lbs.); bluestone for bordeaux .5 lbs. (6 acres averaged 2.4 lbs.); dust 2.2 lbs. (6 acres averaged 10.9 lbs.); cloth 7.3 yds., (3 acres averaged 71 yds.); and frames valued at \$1.38 per acre with a yearly depreciation of 13.3%, (3 acres averaged \$13.33).

The materials applied to the field were: Fertilizer before planting 803 lbs. (on 26 acres where used the average was 896 lbs.); fertilizer after planting 2414 lbs.; ashes 121 lbs. (2.5 acres averaged 1400 lbs.); nitrate of soda 134 lbs. (6.5 acres averaged 600 lbs.); lime 48 lbs., and bluestone 26 lbs., for bordeaux (15.5 acres averaged 89 lbs. and 48 lbs. respectively); lime sulphur dust 19 lbs., (7.5 acres averaged 73 lbs.); miscellaneous dusts 204 lbs. (22 acres averaged 269 lbs.); and poison 54 lbs.

**CANE:** Jackson County.—An imported variety of East India cane known as Cayenna No. 10 (sometimes called improved Jap), because of its immunity to mosaic disease and its ability to stubble over from year to year is fast replacing sugar cane in this county. Of the 117.75 acres studied on thirteen farms around Sneads 47.9 acres were stubble cane and 69.85 acres were planted in 1926. The average yield was 275 gallons of syrup per acre.

Materials used per acre were: Seed canes 980, (on 69.85 acres planted in 1926 the average was 1653 canes); manure 1546 lbs. (12.25 acres averaged 14,858 lbs.); complete fertilizer 797 lbs. (115.25 acres averaged 814 lbs.); barrels 8.6 (32 gal.); wood for cooking 3.3 cords; gasoline 3.5 gal., and oil .1 gal., for grinding (18.75 acres averaged 22.2 gals. of gasoline and .5 gal. of oil).

**LETTUCE:** Manatee County.—The Big Boston variety was studied and gave an average yield of 360 hampers, (48 qt.) per acre for the 111 acres on eleven farms near Palmetto.

The seed bed materials per acre were: Seed .8 lb.; fertilizer 60 lbs.; lead arsenate .4 lbs. (37 acres averaged 1.2 lbs.); poison 3.7 lbs. (25 acres averaged 16.4 lbs.).

The materials used per acre upon the field crop were: Complete fertilizer 1189 lbs.\* (on 79 acres where applied the average

\*On 32 acres receiving no complete fertilizer, castor pomace was applied at the rate of 1 ton per acre. On 45 acres on which both were used only 602 lbs. of pomace was used per acre.

was 1671 lbs.); castor pomace 1077 lbs. (77 acres averaged 1552 lbs.); cotton seed meal 59 lbs. (15 acres averaged 433 lbs.); hampers 360; gasoline 1 gal., and oil .1 gal. for tractor, (44 acres averaged 2.6 gal. of gasoline and .2 gal. of oil).

**SPANISH PEANUTS:** Jackson County.—For 349 acres of Spanish peanuts studied on eleven farms near Greenwood and Malone the average yield was 16.2 bu., of peanuts and 400 lbs. of peanut hay per acre. The yield was lower than the average for other years due to a storm in September.

The following materials were used per acre: Seed 1.6 bu.; fertilizer 138 lbs. (on 179 acres where applied the average was 269 lbs.); posts for stacking 10.7; sacks 1.1 (27 acres averaged 15).

**PEPPERS:** Manatee County.—Peppers can be picked for a long period in this area if given the proper care. The average yield per acre was 282 crates (1.6 bu.) for 44.5 acres on nine farms at Palmetto.

The seed bed materials used per acre were: Seed .9 lb.; fertilizer 92 lbs.; Pyrox dust .24 lbs. (on 3.5 acres where used the average was 3.1 lbs.); cloth 16 yards (2 acres averaged 360 yds. at a value of 6c per yd.); frames valued at \$.67 per acre with a yearly depreciation of 10% (2 acres averaged \$15).

The materials applied to the field crop were: Fertilizer before planting 648 lbs. (on 38 acres where used the average was 759 lbs.); fertilizer after planting 2707 lbs.; nitrate of soda 129 lbs. (38 acres averaged 151 lbs.); poison 43 lbs. (40 acres averaged 48 lbs.); lime 27.3 lbs., bluestone 18 lbs., for bordeaux (17 acres averaged 71 lbs., and 46 lbs.); lead arsenate .6 lbs., (9 acres averaged 2.9 lbs.); nicotine sulphate dust 19.7 lbs., (16.5 acres averaged 53 lbs.); gasoline 2 gal., and oil .1 gal., for tractor, (20 acres averaged 4.5 gal., of gasoline and .2 gal. of oil).

**POTATOES:** St. Johns County.—Two hundred farms near Hastings covering 9084 acres of white potatoes gave an average yield of 52 bbls., (11 pks.) per acre for the year 1925. The following materials were required per acre: Seed 5.2 sacks (about 165 lbs. per sack); barrels 52; fertilizer 2107 lbs.; and copper sulphate dust 40.8 lbs., (on 7494 acres where used the average was 49.5 lbs., per acre).

**STRAWBERRIES:** Hillsborough County. — Fifteen farms were studied near Plant City which grew 81 acres of strawberries with an average yield of 2439 qts. per acre.

The average farmer usually bought enough plants, from Maryland or other northern points, about February to set a small plant bed. An average of 799 plants per acre were bought (on 66 acres where plants were used the average was 981 plants). By July these plants had produced enough runners to set an additional plant bed. On 15 acres the runners for the summer plantings were obtained from plants on the home farm which had been worked out after the picking season was over. About October the runners are gathered from both the February and summer beds to set the main crop. The summer planting is kept and allowed to produce berries, while the February planting is destroyed. Fertilizer amounting to 129 lbs. per acre was used (69.75 acres averaged 150 lbs.) upon the plant bed.

The materials used per acre for the field crop were as follows: Additional plants purchased for setting, 2333 (on 11.5 acres where planted the average was 16,434); manure 12 lbs., (1.75 acres averaged 571 lbs.); ashes 205 lbs., (21 acres averaged 790 lbs.); lime for neutralizing soil 131.5 lbs. (26.5 acres averaged 402 lbs.); complete fertilizer before planting 400 lbs., (47 acres averaged 689 lbs.); complete fertilizer after planting 1464 lbs.; cups (qt.) 2439; crates\* 8.7; poison 16.5 lbs. (68.5 acres averaged 19.5 lbs.); lime sulphur spray .35 gal., (13 acres averaged 2.2 gal.); lime sulphur dust 33 lbs. (30.5 acres averaged 89 lbs.); lime 2.6 lbs., and bluestone 1.2 lbs., for bordeaux (26 acres averaged 8.1 lbs., and 3.7 lbs.); gasoline 2.3 gal., and oil .1 gal., for tractor, (49.75 acres averaged 3.8 gal., of gasoline and .2 gal., of oil).

**BRIGHT TOBACCO:** Madison County.—The study of this crop covered 81 acres on eight farms at Madison with an average yield of 865 lbs., of cured tobacco.

Materials used per acre for the seed bed were: Seed .37 oz. (on 73 acres where used the average was .41 oz.); fertilizer 52 lbs. (73 acres averaged 57 lbs.); manure 49 lbs. (11 acres averaged 363 lbs.); cottonseed meal 12 lbs. (26 acres averaged 38

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\*Since the quart cups are removed from the crates at the shipping point and placed in refrigerator boxes, it is only necessary for each farmer to buy crates enough to deliver his berries each day at the shipping point.

lbs.); dust \$.02 per acre (4 acres averaged \$.45); wood .61 cords (73 acres averaged .68 cords); cloth 51 yards (73 acres averaged 57 yards).

The materials applied per acre to the field crop were: Plants bought, 493 (on 8 acres where planted the average was 5000 plants per acre); manure 210 lbs. (8 acres averaged 2125 lbs.); complete fertilizer 827 lbs.; cottonseed meal 24 lbs., (8 acres averaged 250 lbs.); paris green 2 lbs. (58 acres averaged 2.7 lbs.); lead arsenate 8.3 lbs.; twine for stringing 3.5 lbs.; wood for curing 1.5 cords; lime 24.7 lbs. (22 acres averaged 90 lbs.).

SHADE TOBACCO: Madison County.—The yield for this crop was heavy being 1110 lbs. per acre for the 189 acres studied on nine farms at Madison. This is one of the best grades of tobacco used for cigar wrappers.

The seed bed materials used per acre were: Seed .42 oz., (on 153 acres where used the average was .52 oz.); manure 113 lbs., (147 acres averaged 145 lbs.); fertilizer 17 lbs. (41 acres averaged 78 lbs.); cottonseed meal 58 lbs., (153 acres averaged 72 lbs.); lime 2.6 lbs., (35 acres averaged 14 lbs.); cloth 102 yards (153 acres averaged 126 yards); wood .8 cords (118 acres averaged 1.3 cords).

The materials used per acre on the field crop including those for curing were: Plants purchased 476 (on 9 acres where used the average was 10,000 plants); manure 12,698 lbs., (on 130 acres where used the average was 18,461 lbs.); acid phosphate 57 lbs., (34 acres averaged 320 lbs.); cottonseed meal 1280 lbs., (174 acres averaged 1391 lbs.); complete fertilizer 1177 lbs.; paris green 15.1 lbs.; lead arsenate 11.8 lbs.; lime for poisoning 112 lbs.; twine for tying up and stringing 27.2 lbs.; wood for curing .44 cord, (134 acres averaged .62 cord); charcoal 418 lbs., (159 acres averaged 497 lbs.); corn meal for poisoning 4.4 lbs. (9 acres averaged 93 lbs.); there was an average investment in tobacco shades of about \$290.00 per acre with an annual depreciation of 15%.

TOMATOES: Manatee County.—This is one of the leading crops in this county. Practically all of the farmers prune and irrigate their tomatoes. Of 250.5 acres studied on fourteen farms, 117 acres were staked and tied. There was an average yield of 212 (24 qt.) crates on the entire 250.5 acres.

Each farm had its own seed bed for plants, which required the following materials per acre; seed .34 lbs.; complete fertilizer 20 lbs., (on 228.5 acres where used the average was 22 lbs.); castor pomace 11 lbs., (141 acres averaged 20 lbs.); manure 40 lbs., (9 acres averaged 1111 pounds); lime and bluestone for bordeaux .2 lb. each, (171 acres averaged .3 lbs.); poison .3 lb., (15 acres averaged 5 lbs.); wooden frames valued at \$2.00 per acre (179 acres averaged \$2.79), depreciating 15.6% annually; cloth 32 yards (143 acres averaged 56 yds.).

The materials applied to the field crop per acre were: Castor pomace 291 lbs. (on 65 acres where used the average was 1123 lbs.); complete fertilizer before planting, 524 lbs. (182.5 acres averaged 719 lbs.); complete fertilizer after planting 1654 lbs.; nitrate of soda, 32 lbs. (65.5 acres averaged 122 lbs.); twine for tying, 4.4 lbs. (117 acres averaged 9.5 lbs.); lime 6.4 lbs. and bluestone 5 lbs. for bordeaux. (157.5 acres averaged 10.1 lbs. and 7.9 lbs.); lead arsenate 1.6 lbs. (149.5 acres averaged 2.7 lbs.); dust 13.8 lbs. (47 acres averaged 73.7 lbs.); poison 28.4 lbs.; gasoline 5.8 gal., and oil .2 gal., for tractor (197 acres averaged 7.4 gal. of gasoline and .3 gal. of oil); stakes 2876 (117 acres averaged 6157) with an annual depreciation of 13%.

**WATERMELONS:** Gilchrist County.—Fourteen farms near Trenton, covering 372 acres of watermelons were studied that produced an average yield of .34 cars per acre. The amount of seed required was relatively high due to unfavorable weather at planting time which made several replantings necessary. The usual amount of seed needed per acre is about 1 lb.

The following materials were applied per acre: Seed 1.7 lbs.; fertilizers 813 lbs.; nicotine sulphate dust .6 lbs.; (on 172 acres where used the average was 1.3 lbs.); paste \$.165; paper .25 roll; excelsior .6 bale; lumber valued at \$.28.

**WATERMELONS:** Jackson County.—Six farms were studied near Sneads, that grew 104 acres with an average yield of .28 car per acre.

The materials used per acre were: Seed 1 lb.; fertilizer 476 lbs.; manure 1423 lbs., (on 21 acres where used the average was 7047 lbs.); paper .2 roll; excelsior .2 bale (58 acres averaged .4 bale); cane pomace for shipping, 269 lbs. (46 acres averaged 609 lbs.); paste \$.07; lumber \$.12; gasoline \$.13 and oil \$.01 for tractor, (26 acres averaged \$.53 for gasoline and \$.03 for oil).