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Cost Comparisons for Burley Tobacco Housing and Curing Facilities and Methods

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COST COMPARISONS FOR BURLEY TOBACCO HOUSING AND CURING FACILITIES AND METHODS

INTRODUCTION:

With the several options now available for housing and curing burley (conventional tobacco barn types, cable-hoist system and field curing structures), producers often ask and need to know comparative costs of the various options. Barns have a higher initial cost, long life and assessable value to the farm. The one-tier field structures initially cost about one-third that of a barn per acre of capacity and have labor savings and periodic plastic replacement cost. Low-cost cantilever type field curing structures and frames are even lower in cost and reduce labor but have annual plastic replacement costs and some higher weather risks. The cable-hoist method reduces labor by about half but has relatively high initial equipment and barn construction or conversion costs.

Which option is best?

A simple answer as to which option is best is not easy, or maybe possible, for every producer. Some producers have different situations and needs based on initial costs, expected useful life and labor requirements. A better understanding of the relative features of various methods can be obtained using a comparison of costs, labor, life and cost per pound of tobacco cured.

A computerized procedure has been developed to analyze many facility options based on the cost and labor data. The data are reduced to an annual cost per pound for comparisons. Space does not permit the entire set of data and explanations here. A full copy is available upon request.

SUMMARY OF RESULTS:

The important data are summarized in Table 1 and include estimated investments, labor requirements, and calculated annual costs. The end result is an annual cost per pound of tobacco housed considering barn or structure amortization, labor, repairs, and maintenance during an assumed loan payoff period of five years and for the annual use thereafter. Other data show additional handling rates, facility, equipment and labor costs. The data are for a 15,000 pound quota to be housed which is approximately five acres.

The results show:

a) If a producer has a good barn and 3 to 4 family or hired workers at $7.00 per hour wages, the annual tobacco ‘housing' costs are approximately 7.0¢ per pound (107 to 122 worker-hours required for loading, hauling and housing five acres).

b) Conversion of a suitable conventional barn to the cable-hoist system and annual housing labor would cost approximately 26¢ per pound per year for 5 years of loan payoff, then 4.5¢ per pound annually for labor, repairs and maintenance (LR&M) thereafter (15 wkr-hrs/ac).

c) If additional housing space is required and new construction is considered, the methods having the lowest cost per pound of quota include the post-row framework and moveable curing frames using the cantilever-stick method and the one-tier field structure with housing on tier rails.

1) The post-row structure has a 16¢ to 22¢/lb annual cost (using home-cut posts and untreated lumber or all treated posts and lumber) for the 5 year loan payoff period, then drops to 9.2¢ to 9.4¢/lb annually thereafter for LR&M for the estimated 8-15 year life of the structure (16 wkr-hrs/ac).

2) The moveable curing frames have a 21¢/lb annual cost (all treated lumber) for the 5 year loan payoff period, then drop to 8.6¢/lb annually thereafter for LR&M for the estimated 8 year life (12 wkr-hrs/ac).

3) A 'TYPAR' covered one-tier field structure has a cost of 24¢/lb annually for the 5 year loan pay-off period then drops to 9.1¢/lb annually for LR&M thereafter (16 wkr-hrs/ac).

4) A metal roof covered one-tier field structure has a 27¢ per pound annual cost for the 5 year loan payoff period, then drops to 4.7¢/lb annually thereafter for LR&M for the estimated 15 year life of the structure (16 wkr-hrs required).

5) A 'TYPAR' covered field structure with the mechanized housing by hydraulic-lift two-wheel trailer has a 35 to 41¢/lb annual cost for the 5 year loan pay-off period then drops to 11.4 to 11.6¢/lb annually for LR&M thereafter (14 wkr-hrs/ac).

The periodic plastic recovering cost causes a higher repair and maintenance cost for the field curing structures but less initial cost than for the metal-roof field structure or barn options.

d) A two-tier partially enclosed barn has a cost of 31 to 41¢/lb annually for the 5 year loan payoff period then drops to 5.7 to 5.8¢/lb annually for LR&M thereafter (18-20 wkr-hrs/ac).

e) A new large size cable-hoist barn has a cost of 45¢ per pound annually for the 5 year loan payoff period and 5.2¢/lb annually for LR&M thereafter (14 wkr-hrs/ac).

g) Other barn options range from 42 to 58¢/lb annually for the 5 year payoff period then drop to 5.5 to 7.5¢/lb annually for LR&M thereafter (18 to 30 wkr-hrs/ac).

Initial Investment Costs:

a) The lowest initial investment cost for a 15,000 pound quota facility is the ‘economy’ post-row field structure using home-cut posts and untreated lumber estimated at $4,280 followed by the ‘economy’ one-tier field structure with plastic covering, 8 year estimated life) at $7,790, the post-row structure using all treated lumber (estimated 15+ year life) at $8,046 and the one-tier field structure with treated lumber and TYPAR covering (estimated 15+ year life) at $9,408.

b) The two-tier partially enclosed barn with a third removable tier is estimated at $15,992 and without the third removable tier at $22,660.

c) Other barn options range from $19,305 to $32,846 estimated initial investment for the 5 acre or 15,000 lbs capacity.

CONCLUSIONS:

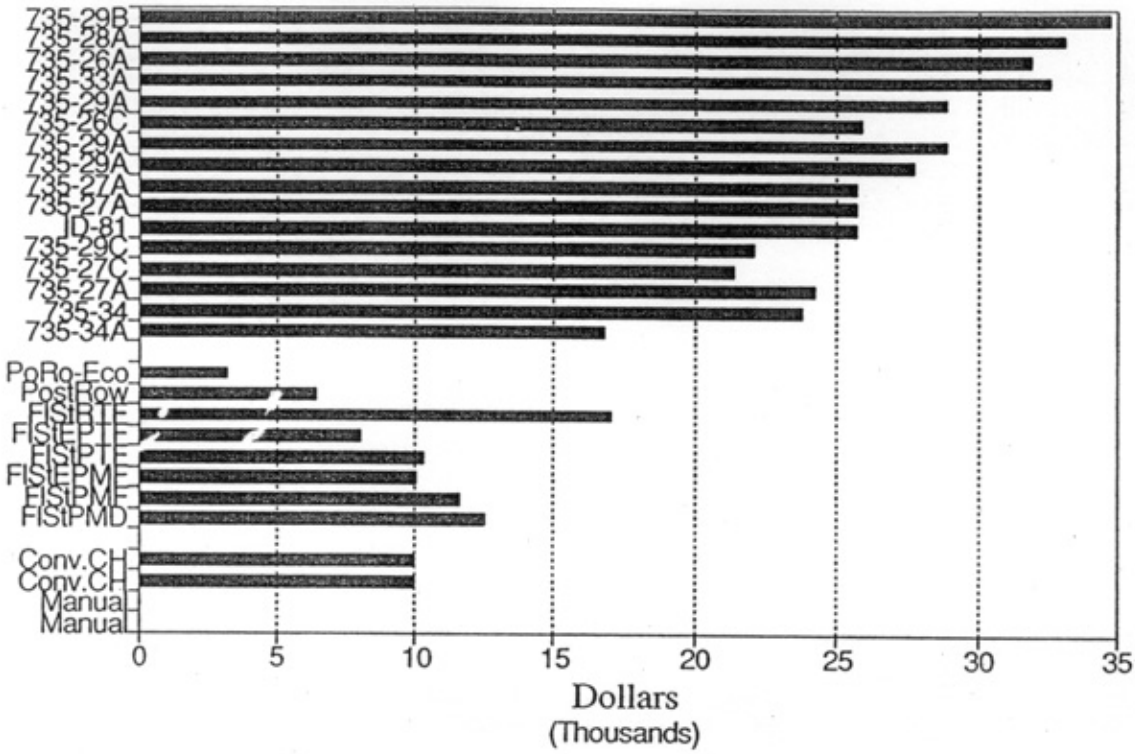
So, do you want a facility having the lowest investment cost, longest life, lowest loan payoff cost, only one or two worker housing, or lowest labor, repairs and maintenance cost for many years? No one facility provides all advantages. The data enable anyone to compare features and cost and choose a type that best fits the planned tobacco production methods for the coming years. Remember that the increasing scarcity and higher costs of labor and adaptations for mechanized harvest and housing can have an important bearing on burley curing facilities of the future. Keep current with improvements so you can plan and adopt the best methods for your tobacco production.

TABLE 1: COST COMPARISONS FOR BURLEY CURING FACILITY OPTIONS*

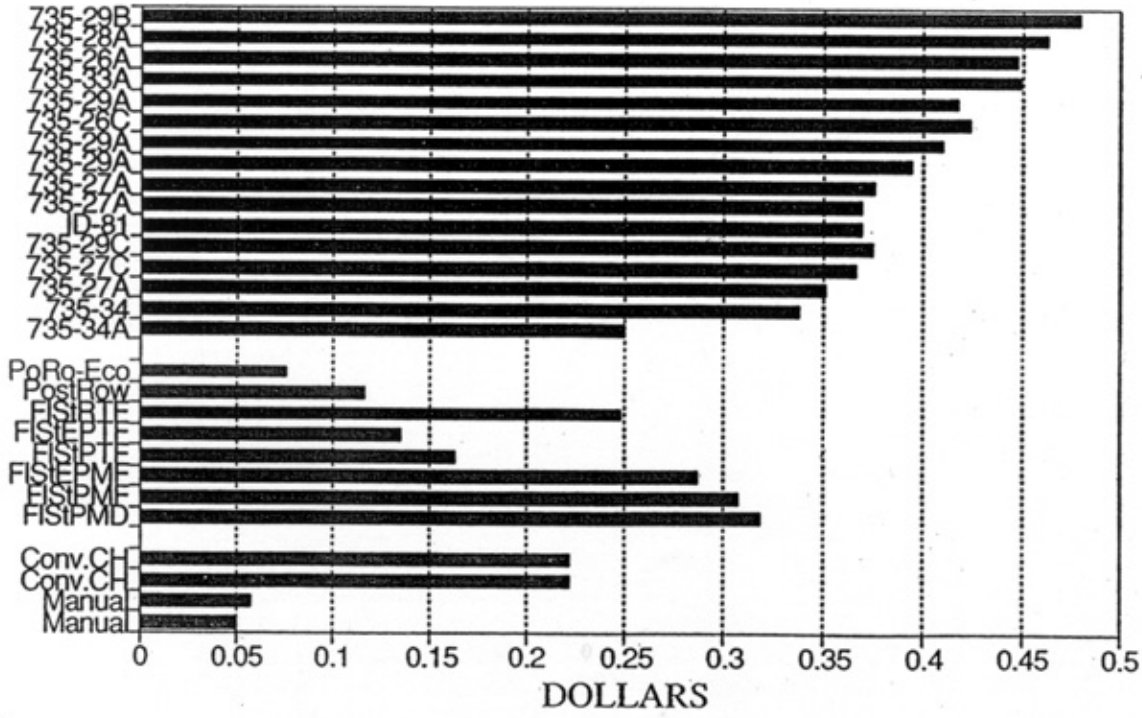
	FLD	STRUCT.		IN BARN					
METHOD	WKR HRS /Ac	WID	LEN	WKR HRS /Ac	INVEST-MENT	Net LN ¢/LB	Labor ¢/LB	Rep&Mn ¢/LB	Ln+ La + R&M/Lb	La+R&M ¢/LB
Manual, Conv. Barn	12	32'	160'	47	$0	-0.3	5.0	2.0	6.7	7.0
Manual, Conv. Barn	12	40'	113'	62	$0	-0.4	5.7	1.5	6.8	7.2
Convert to Cable Hoist	65	32'	140'	11	$14,100	21.9	3.5	0.9	26	4.5
Convert to Cable Hoist	65	40'	120'	11	$14,128	21.9	3.5	0.9	26	4.5
Fld. Structures, 'TYPAR', Hyd. Trailer	65	28'	407'	4.4	$16,540	25.8	3.2	8.2	37	11.5
Fld. Str., Econ. 'TYPAR', Hyd. Trlr.	65	28'	407'	4.4	$14,956	23.3	3.2	8.1	35	11.4
Fld. Str., 'TYPAR', Tier Rails	65	28'	342'	19	$ 9,408	14.7	3.7	5.4	24	9.1
Fld. Str., 'Economy', Plastic Tier Rails	60	28'	342'	19	$ 7,812	12.2	3.7	2.9	19	6.6
Fld. Str., Metal Roof, Tier Rails	60	28'	342'	19	$14,391	22.5	3.7	1.0	27	4.7
Post Row, Plastic, trtd wood	60	8'	1027'	19	$ 8,046	12.5	3.7	5.8	22	9.4
Econ. Post Row, Plastic, cut/untrt wd	60	8'	1027'	19	$ 4,280	6.6	3.7	5.5	16	9.2
Moveable Curing Frames, trtd wood	55	8'		6.4	$ 7,790	12.2	2.9	5.7	21	8.6
2 Tier, Part. Enclos, Plus 3rd Tier Rail	60	32'	120'	41	$15,992	24.9	4.7	1.1	31	5.8
2 Tier, Part. Enclosed	60	28'	180'	30	$22,660	35.4	4.2	1.5	41	5.7
New Cable Hoist Barn	60	48'	64'	11	$25,644	40.0	3.5	1.7	45	5.2
Conv. Barn, 3-4 Tier Plus 'Temp. Rail'	60	40'	87'	62	$19,305	29.9	5.7	1.3	37	7.0
	60	48'	95'	62	$22,646	35.2	5.7	1.5	42	7.2
Conv. Barn, 3-4 Tier	60	32'	160'	47	$30,108	47.0	5.0	2.0	54	7.0
Conv. Barn, 3 Tier										

*Assumes a need for 15,000 pound quota capacity (approximately 5 acres).
Labor cost data includes field loading and transport plus barn labor for methods shown. Estimated Initial Investment includess construction labor.
Loan cost based on five year period at 10% interest and other cost and tax factors.
Obtain full report for more details and data.

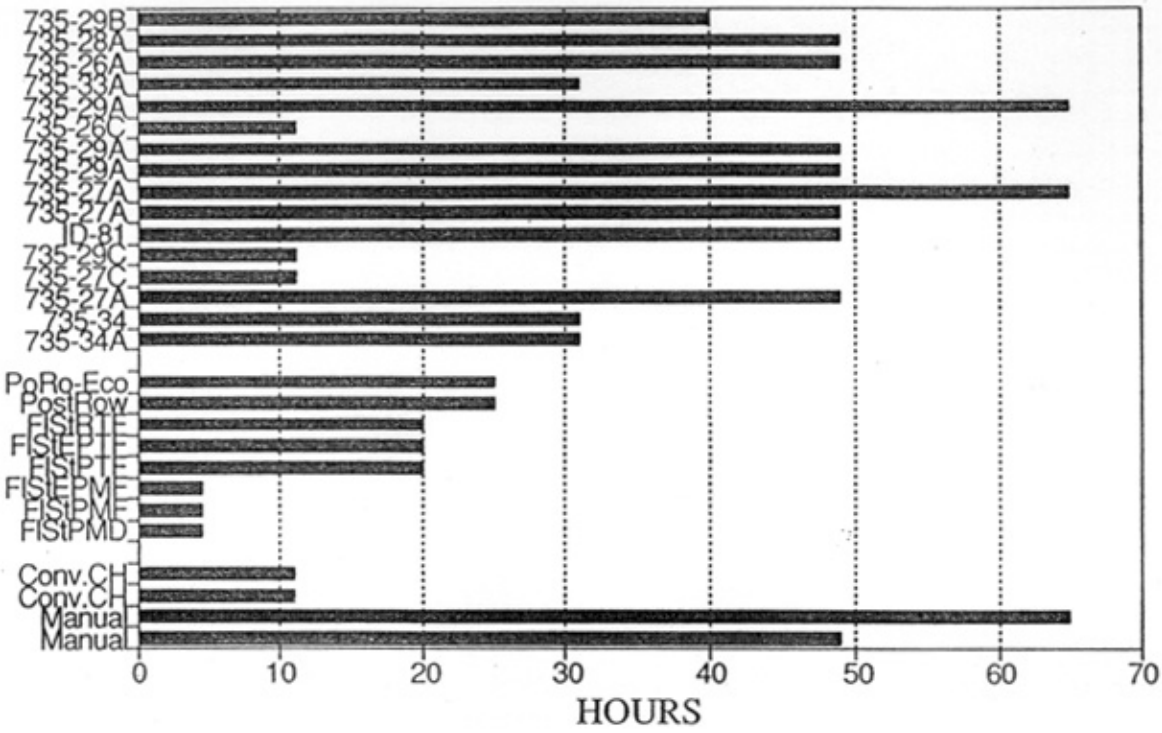
STRUCTURE COSTS
5 Acre Capacity



ANNUAL COSTS - 7 YR LOAN
5 Acre Capacity



LABOR HOURS
5 Acre Capacity



ANNUAL LABOR COSTS
5 Acre Capacity