Alfalfa Hay Harvesting Costs

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Hay Market Continues to Evolve

- Custom harvest costs/prices vary in amounts and in quoting methods
- Large bales are becoming popular, replacing small bales

What is the current situation?

A survey of custom harvesters was conducted during Fall 2007

- Results provide snapshot of industry
- Results vary over regions (Inter-Mountain, San Joaquin Valley)

Custom harvesters

- 60% harvest their own hay and do custom work
- 13% harvest their own hay only
- 27% do only custom work

- 93% do small baling
- 73% do large baling (Ave: 1315 lbs)

Regional Production Differences

	Inter-Mountain	*SJ Valley*
Average number of cuttings per field per year	2.8	7.1
Range in number of cuttings per field per year	2 – 3	6 – 10
	(*tons/acre*)	
Average yield per acre for the **first cutting**	2.3	1.25
Low end of yields per acre for the **first cutting**	1.5	0.8
High end of yields per acre for the **first cutting**	2.8	1.7
Average yield per acre for the **last cutting**	1.3	0.9
Low end of yields per acre for the **last cutting**	0.9	0.6
High end of yields per acre for the **last cutting**	1.7	1.3

Custom Harvest Rates

"Fixed" costs per acre of owning equipment vary between firms because:

- Total costs of equipment owned varies
- Total acres harvested per year varies

"Variable" costs per acre of operation are often similar between firms because:

- Labor, fuel costs are similar in a region

Effects of Yield on Custom Rates

- More time is needed per acre as yield increases
- More time means more variable costs incurred per acre, thus justifying a higher price for the harvesting service

- Both regions
- All harvest functions/tasks
- Small and large bales

Bale size effects (Acres/hour)

	Yield: 1 t/ac	*2 t/ac*	*3 t/ac*
IM region			
Baling, small	6.9	5	3.4
Baling, large	13	12.2	8.7
SJV region			
Baling, small	11.75	9.4	7.3
Baling, large	22.5	19.25	16.25

Effects of Job Size on Custom Rates

- Harvesters tend to charge more per unit of output for small harvest jobs than they do for average or large jobs

- True for expressing prices of all harvest operations as a single charge per ton, as done in the IM, and for pricing of most individual harvest operations separately, as done in the SJV

Custom rates ($/ton), across job sizes with fixed yield of 2 t/ac: IM Region

Small bales:			
Operation	*Smallest job*	*Average job*	*Largest job*
Total harvest (roadside)	44	40.2	40.2
Large bales:			
Total harvest (roadside)	39.3	36.7	36.3

Custom rates, across job sizes with fixed yield of 1.25 t/ac: SJV Region Small Bales

Operation	*Smallest job*	*Average job*	*Largest job*
Swath ($/ac)	13	12.7	12.7
Rake ($/ac)	5.2	5	5
Swath & rake ($/ac)	17.2	16.8	16.8
Bale ($/bale)	0.95	0.92	0.92
Swath, rake, & bale ($/t)	28	28	28
Haul off field ($/bale)	0.38	0.38	0.38

Custom rates, across job sizes with fixed yield of 1.25 t/ac: SJV Region Large Bales

Operation	*Smallest job*	*Average job*	*Largest job*
Swath ($/ac)	13	12.7	12.7
Rake ($/ac)	5.2	5	5
Swath & rake ($/ac)	17.2	16.8	16.8
Bale ($/bale)	8.75	9.1	9.1
Swath, rake, & bale ($/t)	28	28	28
Haul off field ($/bale)	3	3.5	3.5

Rate Setting

Two common methods are used:

- Focusing on variable costs leads to setting a minimum rate per acre
- Focusing on fixed costs leads to setting a minimum rate per job

Minimum Charge Per Acre

- IM region: 60% have a minimum, averaging $42.80
- SJV region: 40% have a minimum, averaging $21.70

Minimum Charge Per Job

- IM region: 40% have a minimum, averaging $500
- SJV region: 10% have a minimum, averaging $200

Full-cost Pricing Method

- Begins with a rate per acre based on the fixed and variable costs incurred moving the equipment over an empty field that is flat and in good condition
- Actual rate charged is the base rate plus an adjustment for the actual yield

Quoting rates on a per-acre basis that includes a yield adjustment would standardize and improve on the pricing methods currently observed in California