



## *the COST of BRUCELLOSIS PREVENTION*

# FENCING STACKYARDS

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Transmission of brucellosis between cattle, elk, and bison affects the viability of cow-calf operations in northwest Wyoming.

In response to a series of recent infections, producers are experimenting with a growing suite of management tools to reduce the risk of livestock contracting brucellosis. Game-proof fencing of stackyards has the potential to reduce brucellosis risk by limiting interaction between elk and cattle while protecting stored crops. This interaction often occurs when ranchers stack hay near cattle winter-feeding areas. Keeping hay near feeding areas allows convenient and cost-effective feeding; however, unprotected stackyards often attract elk – luring them into close proximity with cattle.

The economic feasibility of fencing stackyards depends upon its costs and benefits. Its benefits are difficult to value due to uncertainty about the degree to which fencing stackyards reduces brucellosis risk. We therefore focus on providing an accurate cost estimate, which producers can weigh against their personal estimates of benefits.

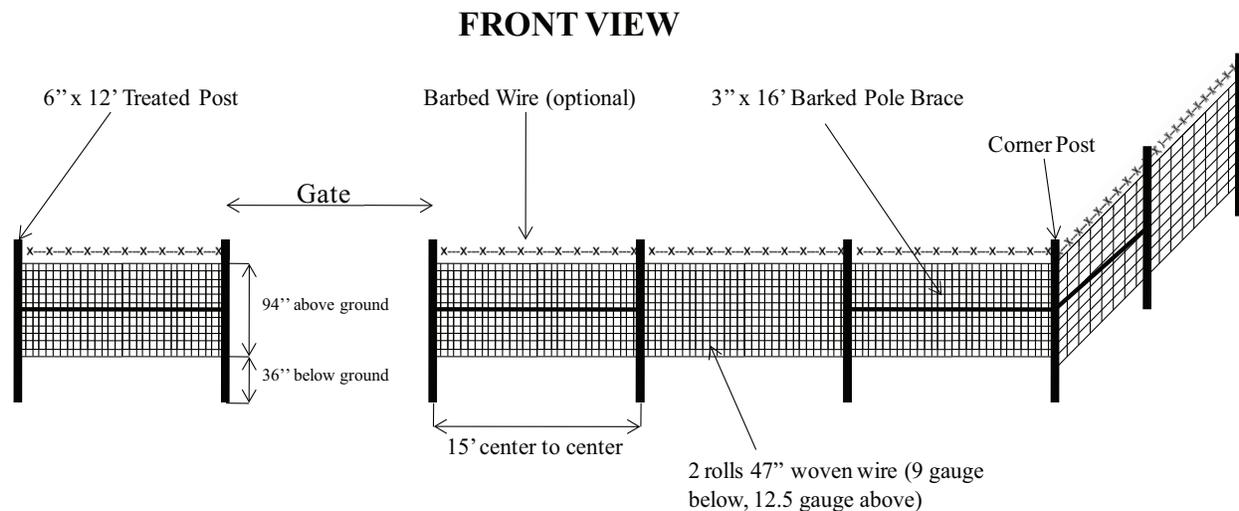
The table below provides a cost breakdown for a representative 105-foot wide by 210-foot long stackyard fence that meets Wyoming Game and Fish Department (2010) construction recommendations. The representative fence, with a perimeter of 630 feet, will enclose 1,950 one-ton square bales stacked three tiers high. It is constructed with posts spaced on 15-foot centers and has two access gates. Each corner and gate has two brace poles, one on each side, for structural support. The recommended design includes two sections of either 12.5-gauge or 9-gauge, 47-inch woven wire to reach the recommended height of 94 inches; the heavier (9-gauge) wire is usually erected on the ground level where the majority of wear occurs.

Under current brucellosis prevention practice, the Wyoming Game and Fish Department (WGFD) provides most fencing materials where elk-cattle commingling is a concern; the producer covers installation costs. We organize tool and material costs into two subcategories, based on whether or not WGFD pays for them. We place labor

cost in its own category. We provide two labor cost estimates: one for using owner/hired labor, and another for using custom labor (i.e., hiring a third-party construction crew). Owner/hired labor costs are derived using the Fence Calculator (University of Kentucky, 2009) to determine labor hours and the Bureau of Labor Statistics (2009) to determine hourly wage rates. Custom labor

rates are from Hewlett and Sedman (2006). For completeness, our cost breakdown assumes all tools must be purchased or rented (see references for a list of cost sources). These costs could be removed if the needed tools are available on-site, although the costs of wear-and-tear should be considered.

## Wyoming Game and Fish Department's recommended game-proof stackyard fence design



## References

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- Wyoming Game and Fish Department. 2010. *Stackyard size and material specifications*. Pinedale Regional Office, Pinedale, WY. Unpublished data.

	Description	Quantity	Cost (per unit)	Unit	Total cost
<b>Materials (provided by WGFD)</b>					
Treated posts	6"×12'	42	\$22.50	post	\$945.00
Barked poles	3"×16'	12	\$8.50	pole	\$102.00
Woven wire	47" (20 rod, 9 bar, 5" stay, 12.5-gauge)	2	\$159.90	roll	\$465.08
	47" (20 rod, 9 bar, 5" stay, 9-gauge)	2	\$232.54	roll	\$319.80
<b>Total materials cost (provided by WGFD)</b>					<b>\$1,831.88</b>
<b>Tools and materials (not provided by WGFD)</b>					
Gate 1	16' Steel	1	\$98.00	gate	\$98.00
Gate 2	18' Steel	1	\$112.00	gate	\$112.00
Post auger		1	\$120.00	day	\$120.00
Tractor/skid loader		1	\$168.33	day	\$168.33
Fencing pliers	10-1/2"	1	\$28.49	each	\$28.49
Shovel	Long-handle, round-point shovel	1	\$34.99	each	\$34.99
Hammer	21 oz. framing hammer	1	\$28.99	each	\$28.99
Drill	10" bit brace	1	\$29.99	each	\$29.99
Wire stretcher		1	\$31.49	each	\$31.49
Tamping bar		1	\$39.99	Each	\$39.99
<b>Total tools &amp; materials cost (not provided by WGFD)</b>					<b>\$692.27</b>
<b>Labor</b>					
Owner/hired labor		47	\$13.85	hour	<b>\$650.95</b>
<b>Total cost to WGFD</b>					<b>\$1,831.88</b>
<b>Total cost to producer<sup>1</sup></b>					<b>\$1,343.22</b>
<b>Total cost<sup>1</sup></b>					<b>\$3,175.10</b>

<sup>1</sup> If using custom labor (for example, hiring a third-party crew to construct the fence), replace the \$650.95 labor cost with \$1,976.

Contact your local game warden or Wyoming Game and Fish Department office for more information on the stackyard cost-share program and alternative fence designs.

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