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## Understanding the Effects of Stress on Embryonic Mortality in Cattle: When Should I Not Ship Cows?

John Paterson, Extension Beef Specialist

Sarah Fields and George Perry from South Dakota State University recently published a paper (Beef Horizons, March, 2008) presenting the effects of stress on embryonic mortality in cattle. The following table demonstrates how transporting cows at different days after insemination affected pregnancy rates. Briefly, shipping cows between days 5 and 42 could be detrimental to embryo survival, and cause approximately a 10% decrease in pregnancy rates. Other research showed that shipping cattle 45 to 60 days after insemination could result in 6% of embryos being lost. Critical time points such as blastocyst formation, hatching, maternal recognition of pregnancy and adhesion to the uterus take place during this early time of pregnancy. If any of these time points are disturbed, then the result would lead to increased embryonic mortality and decreased pregnancy rates.

### Effect of time of transport after insemination on pregnancy rates

Item	Days after insemination that transportation occurred			
	1 to 4	8 to 12	29 to 33	45 to 60
Synchronized pregnancy rate	74%	62%	65%	
% Pregnancy loss compared to transportation on days 1 to 4		12%	9%	6%**
Breeding season pregnancy rate	95%	94%	94%	

\*\* Loss compared to precent pregnant prior to transportation (pregnancy determined by transrectal ultrasonography)

Data adapted from Harrington et al, 1995 and Merrill et al., 2007

### Take Home Message:

#### Time points for shipping pregnant cows:

When to ship	Days 1 to 4 or days 45 to 60
When not to ship	Days 6 to 42

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