



## COLOSTRUM BANK

Patrick M. McCue

DVM, PhD, Diplomate American College of Theriogenologists

This article will focus on harvesting colostrum and starting a colostrum bank on the farm. An owner or farm manager generally does not know in advance which foal will need supplemental colostrum. An on-site supply of frozen colostrum can be critical for the health of a valuable neonate.

The best colostrum donors are mares that have had one or more foals and are 4 to 15 years of age. Vaccination 4 to 6 weeks prior to foaling will increase antibody content of colostrum and consequently increase the quality of colostrum to be collected for storage. Colostrum volume and quality are not as good from young maiden mares or older mares. Mares that have dripped milk for several hours prior to foaling may not have a large volume of good quality colostrum remaining in their udder and may not make suitable donors for a colostrum bank. Colostrum should not be saved from a mare with a history of having a foal affected by neonatal isoerythrolysis (NI or Jaundice Foal Syndrome) or that died from unknown causes within the first few days after birth.

Good quality colostrum is thick, yellow in color and sticky in texture. Poor quality colostrum is often watery, white in color and non-viscous in texture. Antibody content can be estimated by measurement of specific gravity using an equine colostrometer. Good colostrum has a specific gravity of  $>1.06$ . A

low specific gravity is indicative of low antibody levels and poor colostrum quality. A sugar or Brix-type refractometer can also be used to assess colostrum quality. Good quality colostrum will have a refractive index of  $\geq 23\%$  when using a sugar refractometer. Sugar refractometers are easy to use, require a minimum of colostrum (i.e. one drop) and results are highly correlated with IgG concentrations as determined by laboratory testing.

Ideally, colostrum to be banked should also be tested for the presence of anti-RBC antibodies, to prevent the possibility of inducing neonatal isoerythrolysis in a foal receiving stored colostrum. Testing for NI antibodies can be performed at the University of Kentucky and the University of California, Davis.

The technique for harvesting colostrum is relatively simple. The udder of the mare should be washed with warm water and soap to remove debris and bacteria. It is recommended that colostrum be collected from one side of the mammary gland from a donor mare in the first hour after foaling before her foal has nursed. A total of 8 to 16 oz may be safely harvested from the mare without adversely affecting the ability of the newborn foal to acquire sufficient colostrum for adequate passive transfer of antibodies.

Stripping or milking colostrum by hand directly into a clean glass or plastic measuring cup 16 to 32 oz in capacity will make it easy to evaluate the volume that has been collected. Alternatively, colostrum can be harvested using an inverted 60-ml syringe as a simple milking device. To make the unit, cut the tip off of a 60-ml plastic syringe. Reverse the syringe plunger (i.e. insert the plunger into the end the tip was removed from) and place the flared end of the syringe over the mare's teat snug against the udder. A gentle pull on the plunger will create suction and draw colostrum down into the syringe. The colostrum in the syringe is then transferred into a larger measuring cup and the process repeated until the desired volume is obtained.

Harvested colostrum should be passed through a gauze filter or new cheesecloth into a storage container. Colostrum should be stored in 8 to 16 oz plastic bottles labeled with the donor mare's name, collection date and colostrum quality. Glass bottles or plastic freezer bags are not recommended for storage of frozen colostrum. Frozen equine colostrum can be safely stored for 1 to 2 years in a standard  $-20^{\circ}\text{C}$  freezer. Colostrum should be harvested each breeding season to replenish the colostrum bank with a fresh supply. Colostrum that is  $>1$  year old can be used to supplement at-risk foals on the farm.

Frozen colostrum should be thawed in a water bath at room temperature. Thawing in hot water or in a microwave will destroy the antibodies and render the colostrum useless.

Colostrum is considered to be 'liquid gold' by horse breeders and veterinarians alike. Making deposits in the bank early and often during a breeding season will provide dividends for years to come.