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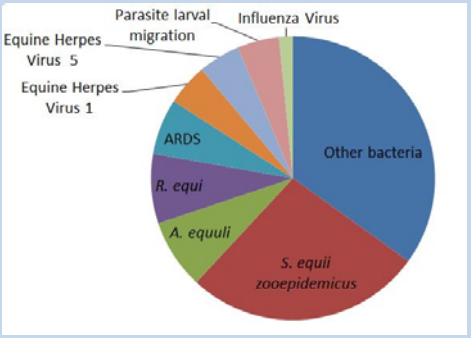
Equine pneumonia

Among 59 horses and donkeys with primary or concurrent **pneumonia** submitted to CAHFS laboratories for necropsy in the past year, *Streptococcus equi* ssp *zooepidemicus* (17 cases) was the most common agent found. This organism usually caused severe pneumonia and often pleuritis. In five cases, the organism was found with aspirated plant or amniotic material in the lung. There were five cases of *Rhodococcus equi* infection, 4 in foals 6-14 weeks of age and one in a mare with a foal that had been sick and recovered. Two of the *R. equi* foals and two additional 2-month-old foals had acute respiratory distress syndrome (ARDS) with hyaline membranes and interstitial pneumonia. The ARDS cases all occurred during the summer. A variety of other bacteria isolated from pneumonia cases were found sporadically (in <3 cases each) with the exception of *Actinobacillus equuli* (5 cases) which was seen as interstitial pneumonia associated with septicemia or a polymicrobial bronchopneumonia. There were three cases of Equine Herpes Virus type 1 in 1- to 50-day-old foals and donkeys. Two premises reported multiple deaths. Equine Herpes virus type 5 associated with equine multinodular pulmonary fibrosis was diagnosed in three horses ranging from 6 – 20 years of age. There was one case of influenza. Six adult and young equine were diagnosed with concurrent selenium deficiency. Three, 3- to 4-month-old foals had incidental findings of eosinophilic pneumonia associated with parasite larval migration. Several bacteria were found in equine tracheal washes but were not reported in cases of fatal pneumonia and these include *Nicoletella semolina* and *Pasteurella caballi*.



Parasites

Internal parasites can produce severe damage to the intestines as well as other organs, particularly in young and growing horses. The life cycles of many equine parasites, including large strongyles, small strongyles, and ascarids include a larval migratory phase. Penetration through intestinal mucosa and migration through blood vessels (especially the cranial mesenteric artery) can result in permanent damage; sequellae include recurrent colic, hemorrhage, and death. Small strongyles encyst within the horse and are protected from all deworming treatments in this stage. Ascarid eggs can persist in the environment for up to eight years, highlighting the risks of contaminated pastures to young horses. Pulmonary damage and intestinal impaction resulting from ascarids are frequent complications found in young horses. Moist pastures and mild environmental temperatures in California favor the survival of eggs over the winter, which can be present in large numbers as young foals enter pastures in the spring. Resistance to available dewormers, including Ivermectin, has been reported in many species of equine parasites, and can be increased with continued drug administration. Fecal testing, particularly using a semi-quantitative (McMasters) method, to assess the prevalence and type of worm burden, as well as post-deworming fecal evaluations, can help in the development of farm-specific deworming strategies.

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Study of laryngopharyngeal pathology in Thoroughbred horses in Southern California

Due to increasing anecdotal evidence among horse owners, trainers and equine clinicians of a high prevalence of subepiglottic ulcers that may have a negative effect on racing performance, the pathologists at CAHFS San Bernardino performed a prevalence study with characterization of laryngopharyngeal lesions. The study was carried out on 91 Thoroughbred racehorses received for post mortem examination from four major Southern California racetracks. Thirteen horses (14.3%) had at least one type of laryngopharyngeal abnormality and seven horses (7.7%) had lesions in the subepiglottic soft tissues, including four subepiglottic ulcers, two soft palate "kissing lesions" and one "subepiglottic scar". The most common lesions detected in this study were in the subepiglottic area, suggesting that an important percentage of laryngopharyngeal abnormalities may be missed during routine endoscopy of the standing horse if this area is not evaluated. Pathologically, subepiglottic ulcers were chronic-active with viable epithelial margins, suggesting that proper healing and re-epithelialization should occur with appropriate treatment. More extensive prevalence studies and correlation between abnormalities found and performance are needed to assess the clinical relevance of laryngopharyngeal lesions accurately.

Clostridium difficile infection in horses

C. difficile is recognized as one of the most important causes of enterocolitis in horses of all ages. Close to 50 cases of infection by this microorganism have been diagnosed by the CAHFS laboratories in the past 10 years. The infection affects horses of any age (including newborn foals) and produces severe diarrhea often culminating in death. Antibiotic treatment (any antibiotic) and hospitalization are the main predisposing factors, although in some cases these factors are not present, which indicates that other yet unknown factors may predispose to infection by this microorganism. In young animals the small intestine (jejunum and ileum) is more frequently affected, while adult horses tend to present with colitis or typhlocolitis. Confirmation of the diagnosis is based on detection of *C. difficile* toxins (A/B) in intestinal content or feces of horses. In the absence of toxin detection, isolation of *C. difficile* followed by typing to confirm that the isolated strain is toxigenic should be performed. Since *C. difficile* is very rarely isolated from normal horses, this information can provide useful diagnostic information in horses with enteric disease of an otherwise unexplained cause. To increase the likelihood of confirming a diagnosis of *C. difficile* infection in horses it is recommended that both ELISA for toxin detection and culture are always performed.

Clenbuterol suspended for Quarter Horses

Clenbuterol, a bronchodilator, is used therapeutically in horses with respiratory problems to relax smooth muscles in the airway, causing the airway to dilate. It also stimulates the activity of the cilia in the trachea, assisting the process of eliminating mucus and microscopic debris. The underlying concern with clenbuterol is that as β-2 agonist and like all drugs in this category has adrenergic (muscle building) effects, especially at dosages far above the FDA approved recommendation. The California Horse Racing Board authorization for the threshold level for clenbuterol will be suspended for Quarter Horse races at Los Alamitos. Therefore, clenbuterol becomes regulated as other drugs not specifically authorized by the CHRB. If the Equine Analytical Chemistry Laboratory detects clenbuterol at any concentration, it will be a violation. The new regulations went into effect on October 14, 2011 and were prompted by the increasing abuse of the substance as a replacement for anabolic steroids. For Thoroughbreds, the CHRB still continues to use the authorized limits of 5 µg/ml of clenbuterol in urine and 25 pg/ml of clenbuterol in serum.