News articles and CAB reviews for April 2022

News articles

Enterococcus strains in probiotics may carry antimicrobial resistance genes
https://www.cabi.org/vetmedresource/news/68447
Some E. faecium strains in probiotics carry genes encoding resistance to medically important antibiotics, researchers find
Date: 14 April 2022

Equine analgesics: survey of horse owners in the United States
https://www.cabi.org/vetmedresource/news/68443
Some horse owners purchase analgesics without having a veterinarian examine their horse first, a survey has found
Date: 6 April 2022

Hare die-off attributed to Cronobacter turicensis
https://www.cabi.org/vetmedresource/news/68442
Pathogen is mainly known for causing disease in immunocompromised humans and newborns
Date: 6 April 2022

Insulin concentration is a key indicator of laminitis risk in ponies
https://www.cabi.org/vetmedresource/news/68436
Research has the potential to improve the abilities of owners and vets to identify high risk ponies and implement management changes
Date: 1 April 2022

Study identifies risk factors for canine repetitive behaviours
https://www.cabi.org/vetmedresource/news/68437
Aggressiveness, ADHD-like behaviour, and environment all influence repetitive behaviour in dogs
Date: 1 April 2022

MicroRNAs in milk could aid early diagnosis of bovine mastitis
https://www.cabi.org/vetmedresource/news/68438
Milk levels of microRNAs were found to be associated with changes in mammary inflammation
Date: 1 April 2022

Model predicts risk of cross-species disease spread in livestock
https://www.cabi.org/vetmedresource/news/68435
A mathematical model may help direct disease control efforts more efficiently and cost-effectively
Date: 24 March 2022

Infectious bronchitis virus: reverse genetics system aids vaccine development
https://www.cabi.org/vetmedresource/news/68433
Mutations in non-structural proteins offer a promising mechanism for the development of rationally attenuated live vaccines against infectious bronchitis virus
Date: 24 March 2022

Researchers discover genetic cause of oesophageal disorder in German shepherds
https://www.cabi.org/vetmedresource/news/68431
A genetic test is now available to facilitate breeding decisions aimed at reducing disease incidence
Date: 18 March 2022

Model suggests gene editing combined with vaccination could eliminate PRRS

https://www.cabi.org/vetmedresource/news/68429
Disease elimination may be achievable within three to six years, model predicts
Date: 8 March 2022

Genome-wide association study investigates blood pressure and kidney disease in cats
https://www.cabi.org/vetmedresource/news/68425
Findings pave the way to generating important information about the development of the complex conditions, chronic kidney disease and hypertension
Date: 1 March 2022

Novel Hendra virus variant discovered in Australian horses
https://www.cabi.org/vetmedresource/news/68424
Study highlights the importance of surveillance for detecting emerging pathogens
Date: 1 March 2022

Mitral valve disease compared in Miniature Schnauzers and Yorkshire Terriers
https://www.cabi.org/vetmedresource/news/68419
Study identifies differences, with implications for diagnosis and prognosis
Date: 23 February 2022

Increased diversity of Vibrio species in UK waters as temperatures rise
https://www.cabi.org/vetmedresource/news/68420
Vibrio species may play a role in both human and shellfish diseases
Date: 23 February 2022

Swine influenza: study examines the adaptive immune response of pigs
https://www.cabi.org/vetmedresource/news/68416
Findings may help the development of vaccines against respiratory diseases
Date: 16 February 2022

Stem cell lines to aid study of host-pathogen interactions in pigs
https://www.cabi.org/vetmedresource/news/68414
Novel approach could help improve understanding of how infectious agents interact with the immune system of livestock and reduce the use of animals in research
Date: 9 February 2022

Open-data, community science study explores canine health and longevity
https://www.cabi.org/vetmedresource/news/68412
Project aims to understand how genes, lifestyle, and environment influence aging
Date: 3 February 2022

Highly virulent Escherichia coli causes oedema disease in wild boars
https://www.cabi.org/vetmedresource/news/68411
Discovery highlights the need for wildlife monitoring
Date: 2 February 2022

FMDV: fibrils may play a key role in viral replication
https://www.cabi.org/vetmedresource/news/68405
Understanding viral replication is important for therapeutic development
Date: 20 January 2022

Coronavirus RNA synthesis occurs within membrane-bound sites
https://www.cabi.org/vetmedresource/news/68403
Understanding more about the replication of coronaviruses may help control them
Date: 14 January 2022

Study of cancer risk across mammals in zoos
https://www.cabi.org/vetmedresource/news/68401
Carnivores found to be more prone to cancer
Date: 6 January 2022

First case of fragile foal syndrome in a Thoroughbred
https://www.cabi.org/vetmedresource/news/68400

Fragile foal syndrome is an autosomal recessive disorder reported previously only in warmbloods
Date: 6 January 2022

CAB reviews – full text available to Library members

Advances in the treatment of osteoarthritis in horses.
McCoy, A. M.; CABI, Wallingford, UK, Advances in the treatment of osteoarthritis in horses, 2022, 17, 007, 1-17
https://www.cabi.org/vetmedresource/review/20220061928

Osteoarthritis is a common and debilitating disease affecting horses across breeds and disciplines. Although the cornerstone of therapy among equine practitioners remains systemic and local anti-inflammatory medications, this approach only addresses the symptoms of osteoarthritis, rather than modifying the progression of the disease itself. There has been great interest in various biologic and cell-based therapies, such as autologous conditioned serum, platelet-rich plasma, and mesenchymal stem cells, as potentially being disease-modifying osteoarthritis drugs. In vitro and experimental results for these novel modalities are promising. However, although the use of these therapies is now widespread, scientific evidence supporting their efficacy in clinical cases is limited to date. Gene therapy for delivery of anti-inflammatory cytokines or growth factors has also been investigated experimentally with good results but has not entered widespread clinical practice. Standardized definitions of disease and large randomized controlled trials, organized across institutions, are needed improve evidence-based recommendations for osteoarthritis treatment. This review provides a brief overview of what is known about the pathophysiology of osteoarthritis and addresses the current literature for medical treatment of osteoarthritis in the horse.

A perspective review on the effect of different forms of zinc on poultry production of poultry with special reference to the hazardous effects of misuse.
El-Ghany, W. A. A.; CABI, Wallingford, UK, A perspective review on the effect of different forms of zinc on poultry production of poultry with special reference to the hazardous effects of misuse, 2022, 17, 013, 1-15
https://www.cabi.org/vetmedresource/review/20220158022

Zinc (Zn) is a unique micro-mineral because it is an essential component in many enzymes such as superoxide dismutase, carbonic anhydrase, and alkaline phosphatase, as well as being important for regulation of proteins and lipids metabolism, and sex hormones. This mineral is applied in poultry production in three forms; inorganic, organic, and nanoparticle form. The nano-form of Zn is preferable in application to other conventional forms with regard to absorption, bioavailability, and efficacy. Broilers fed on diets supplemented with Zn showed improvement of growth performance, carcass meat yield, and meat quality. In addition, Zn plays an important role in enhancing of both cellular and humeral immune responses, beside its antimicrobial and antioxidant activities. In laying hens, dietary addition of Zn improves the eggshell quality and the quantity of eggs. Moreover, Zn has a vital role in breeders in terms of improving the egg production, fertility, hatchability, embryonic development, and availability of the hatched chicks. Therefore, this review article is focused on the effects of using Zn on the performance and immunity of poultry, as well as its antimicrobial and antioxidant properties with special reference to the hazardous effects of the misusing of this mineral.

Realizing economic and environmental gains from cultivated forages and feed reserves in Ethiopia.
Dey, B.; Notenbaert, A.; Makkar, H.; Mwendia, S.; Yonas Sahlu; Peters, M.; CABI, Wallingford, UK, Realizing economic and environmental gains from cultivated forages and feed reserves in Ethiopia, 2022, 17, 010, 1-40
https://www.cabi.org/vetmedresource/review/20220158021

The livestock sector in Ethiopia is characterized by low productivity due to inadequate supply of affordable high-quality animal feed year-round, with more acute gaps in the drought-prone regions of the country. This paper presents the economic benefits and insights into the role of cultivated forages, such as densification into pellets, in bridging gaps in feed supply. Nutrient requirement calculations for feedlot and dairy animals and meeting those requirements using cultivated forage-based diets are presented. However, forage crops need a viable forage seed supply system to assure access to quality assured seeds. This study thus explores the role of forage seed systems and presents intervention areas for Ethiopia. Results suggest diets containing greater than 85% cultivated forages

can sustain daily body weight gain up to 1 kg in growing animals. The costs of nutrients from cultivated forages are up to 15-fold lower than those from conventional feed resources. The diets based on pelleted cultivated forages decrease costs of feeding animals during a 100-day drought period by 4-fold, fattening animals by 2.3-fold, and cost of feed for milk production by 4-fold. Utilization of cultivated forages could reduce methane emissions with abatement value between $165 and $240 USD per 1000 kg of body weight gain in the fattening sector. For the dairy sector, the abatement value would range from $1350 to $2400 USD per million liters of milk production. For the drought period of 120 days, the value of methane reductions would be between $5500 and $11,400 USD per 1000 animals.