CENTRO DE DOCUMENTACIÓN
Biblioteca

INFORMATIVO CEDOC

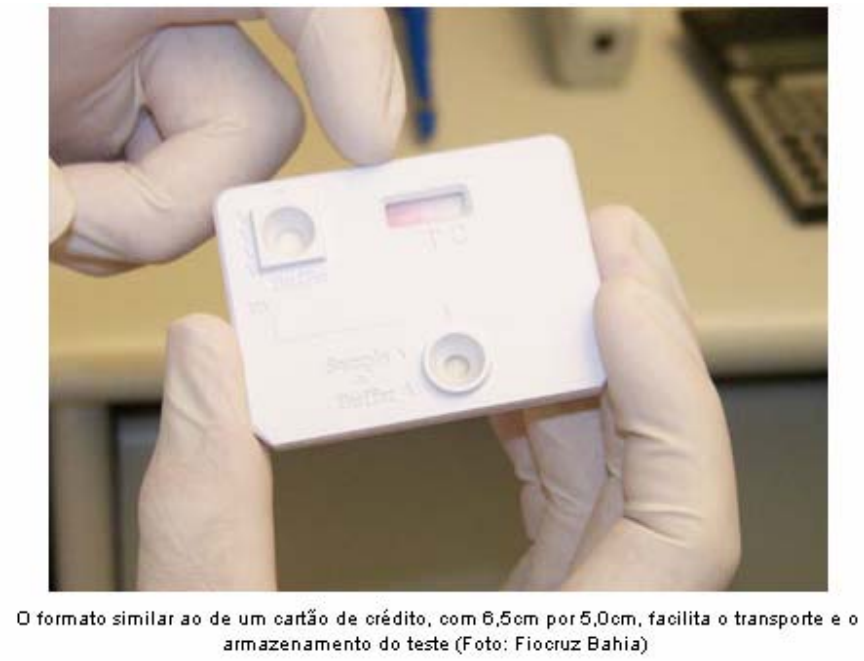
No. 1 Julio 2007

CEDOC	
Misión	**Objetivo**
Mantener informados a los profesionales del Centro Panamericano de Fiebre Aftosa – OPS/OMS (PANAFTOSA-OPS/OMS) como proceso de educación continuada en Salud Pública Veterinaria a través del suministro de información técnico-científica.	Ofrecer subsidios bibliográficos técnico-científicos, suministrando información a los usuarios de PANAFTOSA-OPS/OMS en salud pública veterinaria, incluida las zoonosis, fiebre aftosa, enfermedades vesiculares y la inocuidad de alimentos.

Organización Panamericana de la Salud
Oficina Regional de la Organización Mundial de la Salud

CENTRO PANAMERICANO DE FIEBRE AFTOSA
Unidad de Salud Pública Veterinaria – OPS/OMS

Desenvolvido teste rápido que diagnostica leptospirose em 15 minutos



O formato similar ao de um cartão de crédito, com 6,5cm por 5,0cm, facilita o transporte e o armazenamento do teste (Foto: Fiocruz Bahia)

Após dez anos de trabalho, os pesquisadores do Centro de Pesquisa Gonçalo Moniz (CPqGM), unidade da Fiocruz na Bahia, apresentaram um teste diagnóstico da leptospirose que, além de oferecer o resultado em 15 minutos (os de micro aglutinação exigem até 15 dias para apontar uma resposta), amplia para 92% a chances de o diagnóstico estar correto. Como a leptospirose, transmitida pela urina de ratos, é uma doença que apresenta sintomas semelhantes à dengue, hepatite e gripe, o diagnóstico errado pode levar a progressão para formas mais graves, inclusive com hemorragia pulmonar, que geralmente leva 50% dos pacientes ao óbito em 48 horas.

Desenvolvido no Laboratório de Patologia e Biologia Molecular (LPBM) da Fiocruz-Ba, em parceria com as universidades de Cornell e da Califórnia, o teste diagnóstico funciona com procedimento semelhante ao de gravidez. A rapidez no diagnóstico foi alcançada em função da identificação pelos pesquisadores do componente da bactéria (a proteína Lig) capaz de estimular a produção de anticorpos nas pessoas infectadas. A partir desta descoberta foram produzidos in vitro antígenos, em parceria com Biomanguinhos, que permitiram a construção do teste.
http://www.fiocruz.br/ccs/cgi/cgilua.exe/sys/start.htm?infoid=1110&sid=9

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apimente@panaftosa.ops-oms.org

Encefalopatías Espongiformes Transmisibles

A model (BSurvE) for evaluating national surveillance programs for bovine spongiform encephalopathy
Prattley DJ, Morris RS, Cannon RM, Wilesmith JW, Stevenson MA
Prev Vet Med. 2007; 81 (4): 225-235

Our BSurvE spreadsheet model estimates the BSE prevalence in a national cattle population, and can be used to evaluate and compare alternative strategies for a national surveillance program. Each individual surveillance test has a point value (based on demographic and epidemiological information) that reflects the likelihood of detecting BSE in an animal of a given age leaving the population via the stated surveillance stream. A target sum point value for the country is calculated according to a user-defined design prevalence and confidence level, the number of cases detected in animals born after the selected starting date and the national adult-herd size. Surveillance tests carried out on different sub-populations of animals are ranked according to the number of points gained per unit cost, and the results can be used in designing alternative surveillance programs.

Enfermedades Vesiculares

Microarray-based molecular detection of foot-and-mouth disease, vesicular stomatitis and swine vesicular disease viruses, using padlock probes
Baner J, Gyarmati P, Yacoub A, Hakhverdyan M, Stenberg J, Ericsson O, Nilsson M, Landegren U, Belak S
J Virol Methods. 2007 Aug; 143 (2): 200-206

The World Organization for Animal Health (Office International des Epizooties, OIE) includes the diseases caused by foot-and-mouth disease virus (FMDV), swine vesicular disease virus (SVDV), and vesicular stomatitis virus (VSV), as "Diseases Notifiable to the OIE". Foot-and-mouth disease (FMD) outbreaks have severe economical as well as social effects and cannot be differentiated from the diseases caused by the other two viruses on the basis of clinical symptoms. Efficient laboratory techniques are therefore required for detection and identification of the viruses causing similar vesicular symptoms in swine. A rapid method is described using padlock probes and microarrays to detect simultaneously and differentiate the three viruses in a single reaction, as well as providing serotype information in cases of VSV infection. The padlock probe/microarray assay detected successfully and identified 39 cDNA samples of different origin representing the three viruses. The results were in complete agreement with identities and serotypes determined previously. This novel virus detection method is discussed in terms of usefulness and further development.

Fiebre Aftosa

Identification of a novel foot-and-mouth disease virus specific T-cell epitope with immunodominant characteristics in cattle with MHC serotype A31
Gerner W, Carr BV, Wiesmuller KH, Pfaff E, Saalmuller A, Charleston B
Vet Res. 2007 July-August; 38 (4): 565-572

To identify foot-and-mouth disease virus (FMDV) specific T-cell epitopes within the entire polyprotein sequence of the virus, 442 overlapping pentadecapeptides were tested in proliferation assays using lymphocytes from cattle experimentally infected with FMDV. Four months post-infection cells from all investigated animals (n = 4) responded by proliferation and interferon-gamma production to a peptide located on the structural protein 1D (VP1), amino acid residues 66-80. Major histocompatibility complex (MHC) serotyping of the investigated cattle indicated that all animals shared the MHC serotype A31 which comprises the class II allele DRB3 0701. This may explain the common recognition of this newly discovered epitope. Responses to other peptides could only be observed in one animal and rapidly declined during the time course of the study.

These observations point to an immunodominant role of this epitope located on the protein 1D in cattle with MHC serotype A31.

Thermal inactivation of foot-and-mouth disease virus in milk using high-temperature, short-time pasteurization

Tomasula PM, Kozempel MF, Konstance RP, Gregg D, Boettcher S, Baxt B, Rodriguez LL
J Dairy Sci. 2007 Jul; 90 (7): 3202-11

Previous studies of laboratory simulation of high temperature, short time pasteurization (HTST) to eliminate foot-and-mouth disease virus (FMDV) in milk have shown that the virus is not completely inactivated at the legal pasteurization minimum (71.7 degrees C/15 s) but is inactivated in a flow apparatus at 148 degrees C with holding times of 2 to 3 s. It was the intent of this study to determine whether HTST pasteurization conducted in a continuous-flow pasteurizer that simulates commercial operation would enhance FMDV inactivation in milk. Cows were inoculated in the mammary gland with the field strain of FMDV (01/UK). Infected raw whole milk and 2% milk were then pasteurized using an Arm-field pilot-scale, continuous-flow HTST pasteurizer equipped with a plate-and-frame heat exchanger and a holding tube. The milk samples, containing FMDV at levels of up to 10(4) plaque-forming units/mL, were pasteurized at temperatures ranging from 72 to 95 degrees C at holding times of either 18.6 or 36 s. Pasteurization decreased virus infectivity by 4 log10 to undetectable levels in tissue culture. However, residual infectivity was still detectable for selected pasteurized milk samples, as shown by intramuscular and intradermal inoculation of milk into naïve steers. Although HTST pasteurization did not completely inactivate viral infectivity in whole and 2% milk, possibly because a fraction of the virus was protected by the milk fat and the casein proteins, it greatly reduced the risk of natural transmission of FMDV by milk.

Influenza Aviar

Bird flu: if or when? Planning for the next pandemic

Sellwood C, Asgari-Jirhandeh N, Salimee S
Postgrad Med J. 2007 Jul; 83 (981): 445-50

Avian influenza or "bird flu" is causing increasing concern across the world as experts prepare for the possible occurrence of the next human influenza pandemic. Only influenza A has ever been shown to have the capacity to cause pandemics. Currently A/H5N1, a highly pathogenic avian influenza virus, is of particular concern. Outbreaks of this disease in birds, especially domestic poultry, have been detected across Southeast Asia at regular intervals since 2003, and have now affected parts of Africa and Europe. Many unaffected countries across the world are preparing for the possible arrival of HPAI A/H5N1 in wild birds and poultry within their territories. All such countries need to prepare for the rare possibility of a small number of human cases of HPAI A/H5N1, imported through foreign travel. Although it is by no means certain that HPAI A/H5N1 will be the source of the next pandemic, many countries are also preparing for the inevitable occurrence of human pandemic influenza.
http://pmj.bmj.com/cgi/reprint/83/981/445

Inocuidad de los Alimentos

An overview of microbial food safety programs in beef, pork, and poultry from farm to processing in Canada

Rajic A, Waddell LA, Sargeant JM, Read S, Farber J, Firth MJ, Chambers A
J Food Prot. 2007 May;70(5):1286-94

Canada's vision for the agri-food industry in the 21st century is the establishment of a national food safety system employing hazard analysis and critical control point (HACCP) principles and microbiological verification tools, with traceability throughout the gate-to-plate continuum. Voluntary on-farm food safety (OFFS) programs, based in part on HACCP principles, provide producers with guidelines for good production practices focused on general hygiene and biosecurity. OFFS programs in beef cattle, swine, and poultry are currently being evaluated through a national recognition program of the Canadian Food Inspection Agency. Mandatory HACCP programs in federal meat facilities include microbial testing for generic Escherichia coli to verify effectiveness of the processor's dressing procedure, specific testing of ground meat for E. coli O157:H7, with zero tolerance for this organism in the tested lot, and Salmonella testing of raw products. Health Canada's policy on Listeria monocytogenes divides ready-to-eat products into three risk categories, with products previously implicated as the source of an outbreak receiving the highest priority for inspection and compliance. A national mandatory identification program to track livestock from the herd of origin to carcass inspection has been established. Can-Trace, a data standard for all food commodities, has been designed to

facilitate tracking foods from the point of origin to the consumer. Although much work has already been done, a coherent national food safety strategy and concerted efforts by all stakeholders are needed to realize this vision. Cooperation of many government agencies with shared responsibility for food safety and public health will be essential.

Rabia

Evaluation of a rapid immunodiagnostic test kit for rabies virus

Kang B, Oh J, Lee C, Park BK, Park Y, Hong K, Lee K, Cho B, Song D
J Virol Methods. 2007 Jul 10

A rapid immunodiagnostic test kit for rabies virus detection was evaluated using 51 clinical samples and 4 isolates of rabies virus. The quick detection of rabies virus under field conditions may be helpful in determining if post-exposure prophylaxis is needed, thereby avoiding unnecessary treatments, as well as undue economic burden. There are several widely used diagnostic methods for rabies, including fluorescent antibody tests, reverse transcription polymerase chain reaction, and electron microscopy; however, these methods include time-consuming, intricate, and costly procedures. The rapid immunodiagnostic test was able to detect rabies virus in clinical samples, including brain tissue and saliva, in addition to 10(3.2) 50% lethal dose (LD(50))/mL cell-adapted rabies virus. The assay was not cross-reactive with non-rabies virus microbes. When the performance of the rapid immunodiagnostic test was compared to a fluorescent antibody test, the rapid immunodiagnostic test had a sensitivity of 91.7% and specificity of 100% (95.8% CI).

Síndrome Respiratoria y Reproductiva de los Porcinos

Assessment of the efficacy of commercial porcine reproductive and respiratory syndrome virus (PRRSV) vaccines based on measurement of serologic response, frequency of gamma-IFN-producing cells and virological parameters of protection upon challenge

Zuckermann FA, Garcia EA, Luque ID, Christopher-Hennings J, Doster A, Brito M, Osorio F
Vet Microbiol. 2007 Jul 20;123(1-3):69-85

The efficacy of two different types of commercial vaccines against PRRSV (Euro-type) was evaluated based on clinical parameters upon challenge as well as post-challenge virological profiles (viremia and viral load in tissues upon necropsy, measured in both cases by quantitative real time PCR). In an attempt to establish correlates of protective immunity, two commonly proposed parameters predictive of immunity were measured: (1) serologic responses (ELISA and neutralizing antibodies), (2) frequency of gamma interferon-producing cells in peripheral blood mononuclear cell fraction. The vaccines compared consisted of two commercially available products that are regularly marketed in Spain: one modified live virus and one killed vaccine. The efficacy assay was carried out by vaccinating twice 3 weeks apart groups of 5 and-a-half month-old female swine and then challenging them with a European type 1 PRRSV strain (Lelystad). The results obtained indicate that the modified live virus vaccine was the only type of vaccine capable of establishing protective immunity, as measured by viral load in blood and tissues. The killed vaccine, in spite of this product evoking a spontaneous interferon-gamma response and post-challenge titers of virus-neutralizing antibody, evoked no measurable protective immunity. In the case of the modified live vaccine, the protection exhibited did not appear to be based on humoral but rather on cell-mediated immunity.

Veterinaria - Educación a Distancia

La educación a distancia y online en las ciencias veterinarias desde el aula virtual veterinaria

Flores A, Andrés J, Antúnez Sanches G, Ramírez Sanches W, Rodríguez Valera Y
REDVET 2007 ; 8 (7) : 1-6

Usando las TICs en la Medicina Veterinaria, y en especial en la Educación a Distancia (EaD) y online, se puede lograr formación continuada de calidad para el profesional veterinario. La finalidad de esta comunicación es profundizar en la positiva experiencia y caudal de conocimientos acumulados por los docentes de la Facultad de Veterinaria de la Universidad de Granma, Cuba, en colaboración con Veterinaria Organización en esta modalidad educativa que aporta amplias posibilidades de superación profesional en el sector agropecuario. En el marco de la Maestría de Medicina Preventiva Veterinaria se desarrollaron, por primera vez cinco cursos a Distancia y un Diplomado empleando las TICs. Los módulos fueron impartidos por docentes de la Universidad de Granma, Cuba, y por profesores de las Facultades de Veterinaria de Lugo, Murcia y por varios profesionales de la organización de Veterinaria.org (http://www.veterinaria.org) con sede en Málaga, España. El proceso de

enseñanza-aprendizaje se efectuó desde la plataforma del Aula Virtual Veterinaria http://www.cursonline.net , que emplea el sistema Moodle, en cumplimiento del Convenio Marco de Colaboración Científica, Técnica y Educativa entre la Universidad de Granma y Veterinaria-org, en vigor desde abril de 2002, lo que ha permitido a ambas instituciones trabajar de conjunto en la educación a distancia veterinaria, impartiendo cursos y diplomados y otras actividades formativas. Se demostró que aplicando la EaD se reducen significativamente los costos en la capacitación y se mejora significativamente la calidad, contribuyendo decisivamente al ejercicio profesional y de complementación, haciéndolo más ejecutivo y técnico en la profesión Veterinaria, de tal manera que actualmente se continua desarrollando otros cursos para veterinaria integralmente online desde la misma plataforma Aula Virtual Veterinaria.
http://www.veterinaria.org/revistas/redvet/n070707/070703.pdf

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