

INTERNATIONAL WATER ASSOCIATION HEALTH-RELATED WATER MICROBIOLOGY

Web page: www.iwa-microbiology.org

NEWSLETTER

July 2003

In this issue –

2003 Cape Town Symposium

- Registration details
- Oral and poster programmes

2007 Symposium – call for bids

Information required

HRWM 2003 CAPE TOWN

REGISTER NOW!

The final oral and poster programmes are given below which hopefully will encourage you to register for this most important Symposium! However, an absolutely final final programme will be published in August. This will allow us to exclude any papers that may have been withdrawn in the interim. Delegates and presenters are advised to check their documentation when they arrive in Cape Town and *register at the convention centre* for the latest in any changes.

Registration details can be found on the Symposium web page at

www.iwaconferences.co.za/water/Health_1.html

If you have any difficulties with the site please contact Willie Grabow at grabow@med.up.ac.za.

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Please note that this is the most likely oral programme but presenters and delegates to the Symposium should check the final programme in the documentation handed out at registration - also check the Group's web page (www.iwa-microbiology.org) and the Symposium web page (www.iwaconferences.co.za/water/Health_1.html) for more information and full abstracts.

SUNDAY 14 SEPTEMBER 2003

1600 - 1800 Registration at the Convention Centre
1800 - 2000 Welcome Reception at Convention Centre

MONDAY 15 SEPTEMBER 2003

0830 - 1000 Opening Ceremony
1000 - 1030 Presidential Address: **25 years of water virology**
Willie Grabow (South Africa)

1100 - 1240

Session 1
MICROBIAL ECOLOGY

- 1100 Paper 1: ***Dispersion and transport of Cryptosporidium oocysts from faecal pats under simulated rainfall events***
Cheryl M Davies, C Kaucner, CM Ferguson, N Altavilla, D Deere & NJ Ashbolt (Australia)
- 1120 Paper 2: ***Genotypic analyses of Escherichia coli isolated from tropical soils***
Clarivel Lasalde, H Smith & GA Toranzos (Puerto Rico; US Virgin Islands)
- 1140 Paper 3: ***Indigenous soil bacteria and low moisture may limit but allow faecal bacteria to multiply and become a minor population in tropical soils***
M Byappanahalli & Roger Fujioka (USA)
- 1200 Paper 4: ***Sources and occurrence of Campylobacter spp in impoundment reservoirs used for drinking water production***
Gertjan J Medema, L Heijnen & HAM Ketelaars (The Netherlands)
- 1220 Paper 5: ***Tracking Campylobacter in the environment***
M Devane, JA Hudson, M Baker, N Garret, JK Klena, C Nicol, P Scholes, D Williams & Marion Savill (New Zealand)

1400 - 1540

Session 2
WATERBORNE DISEASE

- 1400 Paper 6: ***Outbreaks associated with private water supplies in England and Wales***
Bengü Said, F Wright, GL Nichols, M Reacher, W Smerdon & M Rutter (UK)
- 1420 Paper 7: ***Norovirus outbreak among primary school children after playing in an interactive recreational water fountain***
Ana Maria de Roda Husman, CJPA Hoebe, H Vennema & YTHP van Duynhoven (The Netherlands)
- 1440 Paper 8: ***Detection of noroviruses in waterborne outbreaks***

- L Maunula, I Miettinen & Carl-Henrik von Bonsdorff (Finland)
 1500 Paper 9: ***Genetic analysis of norovirus (NV) taken from patients of gastroenteritis, river water and oysters***
Yuo Ueki, K Akiyama, T Watanabe & T Omura (Japan)
 1520 Paper 10: ***Case control study of sporadic cryptosporidiosis with genotype analysis***
 Paul R Hunter, S Hughes, Q Syed, S Woodhouse, R Chalmers
 & N Verlander (UK)

1610 - 1730

Session 3

MANAGEMENT OF DRINKING WATER QUALITY SAFETY

- 1610 Paper 11: ***Application of HACCP principles as a management tool for monitoring and controlling microbiological hazards in water treatment facilities***
Corinne Jagals & P Jagals (South Africa)
 1630 Paper 12: ***HACCP as a tool for assuring microbiologically safe drinking water: the Vivendi Water experience***
Laurence de Beir, M-C Müller, H de Mascureau & J-C Joret (France)
 1650 Paper 13: ***Investigation of opportunistic pathogens in municipal drinking water under different supply and treatment regimes***
M Pryor, Susan Springthorpe, S Riffard, T Brooks, Y Huo, G Davies & SA Sattar (USA; Canada)
 1710 Paper 14: ***Short-term fluctuations in drinking water quality and their significance for public health***
P Teunis, A Davison & D Deere (The Netherlands; Australia)

1730

Meeting of the HRWM Group Steering Committee

TUESDAY 16 SEPTEMBER 2003

0845 - 1230

Session 4

INTERVENTION STRATEGIES - EFFECTS ON DISEASE CONTROL

- 0845 Paper 15: ***The impact of introducing treated water on aspects of community health in a rural community in KwaZulu-Natal, South Africa***
Ian W Bailey & L Archer (South Africa)
 0905 Paper 16: ***Are waste stabilisation ponds sources or barriers for toxigenic Vibrio cholerae: efficiency of recovery and preliminary performance data***
S Islam, SB Neogi, S Islam, M Barer & Tom Curtis (Bangladesh; UK)
 0925 Paper 17: ***The effect of engineering and educational interventions on the microbiological quality of container-stored water in developing world households***
Ntombifuthi P Nala & P Jagals (South Africa)

SHELLFISH

- 0945 Paper 18: ***Sewage impact on microbial contamination in a shellfish harvesting area***
Monique Pommepuy, MP Caprais, F Dumas, P Camus, C Le Mennec, S Parneadeau, B Sarrette, P Vilagines, E Kholi, R Brachet & F Le Guyader (France)
 1005 Paper 19: ***Viral clearance during depuration at elevated temperatures determined by an index organism and direct quantitation of norovirus***
William J Doré, K Henshilwood & DN Lees (UK)

- 1100 - 1240
- Session 5
TRACING SOURCES OF MICROBIAL CONTAMINATION
- 1100 Paper 20: ***Determining the origin of faecal pollution source in waters by selective detection of Bifidobacterium spp***
 Anicet R Blanch, X Bonjoch, F Lucena & J Jofre (Spain)
- 1120 Paper 21: ***A simplified low-cost approach to antibiotic resistance profiling for faecal source tracking***
 James E Ebdon, JL Wallis & HD Taylor (UK)
- 1140 Paper 22: ***Potential use of species-specific molecular markers in Enterococcus faecalis as an index of human faecal pollution***
 Troy M Scott, TH Jenkins, J Lukasik & JB Rose (USA)
- 1200 Paper 23: ***Pathogenic Escherichia coli isolates from environmental and human sources in the Limpopo region of South Africa***
 C Larry Obi, E Green, PO Bessong, E Igumbor & N Potgieter (South Africa)
- 1220 Paper 24: ***Escherichia coli O157:H7 from private drinking water supplies in the Netherlands***
 Ciska Schets, M During, JFM Versteegh, L Heijnen, FAM Swinkels & AM de Roda Husman (The Netherlands)
- 1400 - 1540
- Session 6
INTERVENTION STRATEGIES WATER TREATMENT
- 1400 Paper 25: ***Elimination of viruses, bacteria and protozoan oocysts by slow sand filtration***
 Wim AM Hijnen, JF Schijven, P Bonné, A Visser & GJ Medema (The Netherlands)
- 1420 Paper 26: ***Removal of F-specific RNA bacteriophage in artificial recharge of groundwater: a field study***
 RM Niemi, A Kytövaara, J Pääkkönen & Kirsti Lahti (Finland)
- 1440 Paper 27: ***Microbicidal efficacy of advanced oxidation process using ozone/hydrogen peroxide in water treatment***
 Regina Sommer, W Pribil, S Pflieger, T Haider, P Gehringer & M Werderitsch (Austria)
- 1500 Paper 28: ***Using ultraviolet light for disinfection of finished water***
 Zia Bukhari, F Abrams & M LeChevallier (USA)
- 1520 Paper 29: ***Aerobic bacterial spores as process indicators for protozoan cysts in water treatment plants***
 B Galofré, S Israel, J Dellundé & Ferran Ribas (Spain)
- 1610 - 1730
- Session 7
MICROBIAL INTERACTIONS WITH BIOFILMS
- 1610 Paper 30: ***Biofilms, thermophilic amoebae and legionellae: a quantitative risk assessment for distributed water***
 Michael V Storey, NJ Ashbolt & T-A Stenström (Sweden; Australia)
- 1630 Paper 31: ***Control of Legionella in biofilms: evidence for disinfection inefficiencies in a pilot hot water distribution system***
 Sebastien Saby, A Vidal, J Kittel, S Giloupe & M Lotierzo (France)
- 1650 Paper 32: ***Interaction of Cryptosporidium oocysts with drinking water biofilms***
 J Chandy, M Warnecke & Mark Angles (Australia)
- 1710 Paper 33: ***Investigation of Helicobacter pylori by culture and PCR in potable water and biofilm samples from water distribution systems in England***
 Claire L Watson, RJ Owen, S Lai, JV Lee, S Surman, G Nichols, B Said, D Drury & A Lloyd (UK)
- 1730
- Open meeting of the Health-related Water Microbiology Group***

WEDNESDAY 17 SEPTEMBER 2003

0900 - 1040

Session 8

CRYPTOSPORIDIUM

- 0900 Paper 34: ***Die-off of Cryptosporidium spp in tapwater, in seawater and in soil: comparison between infectivity and viability***
Abid M Nasser, E Teuto, L Tenenbaum & Y Netzan (Israel)
- 0920 Paper 35: ***Cryptosporidium distribution among HIV patients in Rostov region (southern Russia) and detection of oocysts in tap water samples***
V Kartashev, R Mitov, C Kourenti, S Gusarev, Y Ponomarenko, L Kushnir, Y Ambalov & Panagiotis Karanis (Russia; Germany)
- 0940 Paper 36: ***Giardia and Cryptosporidium in source waters of São Paulo State, Brazil***
EM Hachich, Maria IX Sato, AT Galbani, JRN Menegon & JLN Mucci (Brazil)

INTERVENTION STRATEGIES - WASTEWATER TREATMENT

- 1000 Paper 37: ***The development of a quantitative RT-PCR assay for the detection of norovirus in wastewater and its application to studies on virus removal during sewage treatment***
Kathy Henshilwood, L Cross & DN Lees (UK)
- 1020 Paper 38: ***Pathogen removal efficiency from USB+BF effluent using conventional and UV post-treatment systems***
Regina Keller, RF Passamani-Franca, F Passamani, L Vaz, ST Cassini, N Sherrer, KN Rubim, TD Sant'Ana & FR Gonçalves (Brazil)

1110 - 1240

Session 9

VIRUSES

- 1110 Paper 39: ***Development and evaluation of methods to detect coliphages in large volumes of water***
Mark D Sobsey, SD Pillai, A Margolin, D Batigelli, S Goyal, MV Yates, F-C Hsu, G Lovelace & N Nwachuku (USA)
- 1130 Paper 40: ***National sample survey of viruses and the influences on the Korean water supplies***
Hyenmi Chung, Y Rim & DK Rhee (Korea)
- 1150 Paper 41: ***Indicator of viral contamination in river water***
S Skraber, L Schwartzbrod & Christophe Gantzer (France)
- 1210 Paper 42: ***Potential transmission of human polyomaviruses through water or food contaminated with urban sewage***
S Bofill-Mas, N Albiñana-Giménez, M Formiga-Cruz & Rosina Girones (Spain)
- 1220 Paper 43: ***Adequacy of membrane specifications for predicting the removal of infectious viral agents in drinking water systems***
Debra Huffman, J Bae, J Seiter, T Idocks, A Madec, J Jacangelo & K Schwab (USA)

1400 - 1540

Session 10

RISK ASSESSMENT

- 1400 Paper 44: ***A monitoring system of Cryptosporidium proposed from the quantitative risk assessment from the counted data in purified water in Japan***
Yoshifumi Masago, H Katayama, T Hirata & S Ohgaki (Japan)

- 1420 Paper 45: **Assessment of microbial infection risks posed by ingestion of water during domestic water reuse and full-contact recreation in a mid-southern African region**
Maronel Steyn, P Jagals & B Genthe (South Africa)

BATHING WATERS AND HEALTH

- 1440 Paper 46: **A marine water quality and health study in South Africa: a summary**
Bettina Genthe & N Strauss (South Africa)
- 1500 Paper 47: **Area-integrated sampling and calculation of time-integrated quality scores: proposal for a new way of monitoring and classifying fresh and sea water bathing sites based on epidemiological evidence**
Albrecht Wiedenmann & K Botzenhart (Germany)
- 1520 Paper 48: **Hepatitis A virus in surface recreational water in South Africa: what is the risk?**
JME Venter, JC Vivier, WOK Grabow & MB Taylor (South Africa)

1700 **Conference dinner**

THURSDAY 18 SEPTEMBER 2003

0900 - 1040

Session 11

IDENTIFICATION OF MICROBIAL CONTAMINANTS

- 0900 Paper 49: **Evaluating real-time PCR for the quantitation of distinct pathogens and indicator organisms in environmental samples**
Michael Lebuhn, M Effenberger, A Gronauer & PA Wilderer (Germany)
- 0920 Paper 50: **Detection, isolation and characterisation of stx₂ phages in sewage**
Maria Teresa Muniesa, C Garcia-Aljaro, AR Blanch & J Jofre (Spain)
- 0940 Paper 51: **Investigation of faecal pollution detection techniques for enumeration and presumptive identification of coliforms and Clostridium perfringens in different aquatic habitats in a tropical country, Uganda**
Denis Byamakama, RL Mach, F Kansiime, M Manafi & AH Farnleitner (Uganda; Austria)
- 1000 Paper 52: **Molecular typing of the Legionella pneumophila population isolated from several locations in a contaminated water network**
Anne-Sophie Lepeuple, M Jovic & M-R de Roubin (France)
- 1020 Paper 53: **Development of a TaqMan^R RT-PCR for the detection and quantitation of viable Campylobacter jejuni in environmental waters**
S Lin, B Gilpin & Marion Savill (New Zealand)

1110 - 1240

Session 12

LEGIONELLA

- 1110 Paper 54: **Is Legionella a threat in South Africa?**
Estelle le Roux & P Coubrough (South Africa)
- 1130 Paper 55: **Pathogenic Legionella species in dental unit waterlines**
Tanusha Singh & MM Coogan (South Africa)

MOLECULAR STUDIES

- 1150 Paper 56: **Rotavirus VLPs as tracers in studies of virus persistence in the environment**

- Albert Bosch, S Caballero, FX Abad, J Cohen, F Le Guyader & RM Pintó (Spain)
- 1210 Paper 57: ***Assessment of virulence-factor activity relationships (VFARs) for waterborne disease***
 TM Jenkins, TM Scott, JR Cole, SA Hasham & Joan B Rose (USA)
- 1230 Paper 58: ***Development of a multiplex-PCR assay for the detection of enterohaemorrhagic E coli and E coli O157:H7 virulence factors from water sources and faecal samples***
Etienne E Müller, MM Ehlers & WOK Grabow (South Africa)

1400 - 1540

Session 13

INTERVENTION STRATEGIES - CONTROL AT POINT OF USE

- 1400 Paper 59: ***Toward a new water and sanitation paradigm: the role of point-of-use water quality interventions in the prevention of diarrhoea***
Rob E Quick (USA)
- 1410 Paper 60: ***A randomised health outcome trial of a household-based flocculant disinfectant for drinking water treatment***
Steve Luby, TM Chiller, CE Mendoza, MB Lopez, M Alvarez, R Hoekstra & BH Keswick (USA; Guatemala)
- 1430 Paper 61: ***A trial of point-of-use chlorination and safe water storage for diarrhoea prevention in a high-risk rural Kenyan population***
Philip Makutsa, V Garrett, P Ogotu, P Barasa, S Ombeki, A Mwaki, G Aluoch & R Quick (Kenya; USA)
- 1450 Paper 62: ***Comparison of the effectiveness of two point-of-use water treatment systems in the developing world***
Daniele S Lantagne (USA)
- 1510 Paper 63: ***The impact of a safe water system (SWS) on household water quality and diarrhoea among persons with and without HIV in rural Uganda***
John R Lule, J Mermin, S Malamba, A Coutinho, F Kizito, D Nakanjako, P Ekwaru, B Waiswa, R Ransom & R Quick (Uganda; USA)
- 1530 Discussion and conclusions

1610 - 1710

Session 14

MISCELLANY

- 1610 Paper 64: ***Bioaerosols from the land application of biosolids in the desert southwest USA***
John Brooks, B Tanner, K Josephson, CP Gerba & I Pepper (USA)
- 1630 Paper 65: ***Evaluation of electrochemically-generated ozone for the disinfection of water and wastewater***
Benjamin D Tanner, S Kuwahara, CP Gerba & KA Reynolds (USA)
- 1650 Paper 66: ***Prevalence of human adenoviruses in raw and treated water***
Juanita van Heerden, MM Ehlers, WB van Zyl & WOK Grabow (South Africa)

FRIDAY 19 SEPTEMBER 2003

WORLD HEALTH ORGANISATION SEMINAR

Chair: Jamie Bartram (Switzerland)

See Symposium web page for more details

POSTER PRESENTATIONS

(These are arranged, *very broadly*, under the themes of the oral programme)

MICROBIAL ECOLOGY

- Poster 1: ***Occurrence of pathogens in surface water***
F Dangendorf, A Queste, I Stalleicken, T Kistemann & M Exner (Germany)
- Poster 2: ***Survival of microorganisms in soil amended with sewage sludge and their subsequent persistence in crops***
B Chale-Matsau & H Snyman (South Africa)
- Poster 3: ***Effects of rainfall and animal faeces on the microbiological quality of small rural water supplies in the United Kingdom – implications for water quality monitoring***
R Morris, K Shepherd, J Watkins & AP Wyn-Jones (UK)
- Poster 4: ***Quality of source water in a rural area of Guatemala***
B López, M Álvarez, C Mendoza, CP Gerba, J Naranjo, S Luby & R Klein (Guatemala; USA)
- Poster 5: ***Detection and quantification of Microcystis in Florida lakes through microbiological methods***
MR Woodall, TM Scott & JB Rose (USA)
- Poster 6: ***Antibiotic resistance of bacteria in surface water and wastewater***
FF Reinthaler, G Wüst, J Posch, G Feierl, D Haas, F Mascher, F Pichler-Semmelrock, O Feenstra & E Marth (Austria)
- Poster 7: ***First records of the recent species Aeromonas culicicola in drinking water***
MJ Figueras, A Suarez-Franquet, MR Chacón, L Soler, M Navarro, C Alejandre, B Grasa & J Guarro (Spain)
- Poster 8: ***Bacteria present in hospital water supplies***
M Gomila, J Gil, J Gascó & J Lalucat (Spain)
- Poster 9: ***A study of the microbial contamination in non-sterile pharmaceuticals by culture and polymerase reaction***
A Abdulraheem (Kuwait)
- Poster 10: ***Salmonella enterica subsp enterica survives in, and is readily released from, river sediments***
I Kgotlagomang, LM Burke, VS Brözel & SN Venter (South Africa)
- Poster 11: ***Adhesion of Enterococcus faecalis in the non-culturable state to zooplankton is the main mechanism responsible for its persistence in both lake and seawater***
C Signoretto, G Burlacchini, M del Mar Lleò, G Franzini, C Pruzzo, L Pane & P Canepari (Italy)
- Poster 12: ***Persistence of adhesive properties in Vibrio cholerae after long-term exposure to seawater***
C Pruzzo, R Tarsi, P Canepari, C Signoretto, RR Colwell & M del Mar Lleò (Italy)
- Poster 13: ***Environmental Aeromonas and Vibrio spp isolated from Mai Po Nature Reserve and Inner Deep Bay of Hong Kong, and their responses to environmental factors***
Y Wang, MY Lai & J-D Gu (Hong Kong SAR)
- Poster 14: ***The role of aquatic eco-systems as reservoirs of antibiotic resistant bacteria and antibiotic resistance genes***
PT Biyela & J Lin (South Africa)
- Poster 15: ***Persistence of E. coli in deep backshore sand of two southern Lake Michigan beaches***
R Whitman, D Shively, M Nevers & M Byappanahalli (USA)
- Poster 16: ***Seasonal variation of faecal pollution in the Plankenbrug river using Escherichia coli as indicator organism: interpretational difficulties when assessing sanitation interventions***
JM Barnes, MM Slabbert, A Huisamen, PD Haasbroek & L Liebowitz (South Africa)
- Poster 17: ***The microbiological quality of ice for human consumption from food and drink premises in London***
S Surman, L Gordon & S Platt (UK)

WATERBORNE DISEASE

- Poster 18: ***Waterborne gastroenteritis outbreak in Albania***
M Divizia, R Gabrieli, D Donia, A Bosch, S Guix, C Villena, RM Pintó, L Palombi, E Buonomo, F Cenko & S Bino (Italy; Spain; Albania)
- Poster 19: ***The relationship between drinking-water quality and gastrointestinal disease in children***
P Weinstein, AJ Woodward, A Ball, K Grimwood, D Read, CJ Nokes, JE Gregor & C Salmond (Australia; New Zealand)
- Poster 20: ***Linking a hospital outbreak of norovirus to its distribution in the community and presence in the environment***
J Sellwood & J Shore (UK)
- Poster 21: ***Mapping sporadic cryptosporidiosis in Wales and northwest England***
S Hughes, Q Syed, S Woodhouse, PR Hunter, I Lake, R Chalmers & K Osborn (UK)

MANAGEMENT OF DRINKING WATER QUALITY SAFETY

- Poster 22: ***The surveillance of water quality for private drinking water supplies in England and Wales***
B Said, C Lane & GL Nichols (UK)
- Poster 23: ***To boil or not to boil?***
K Osborne, A Godfree & C Kerr (UK)
- Poster 24: ***Changing household knowledge, attitudes and practices towards hygienic handling of container-stored water***
M Moabi, NP Nala, P Jagals & TJ Tsubane (South Africa)

INTERVENTION STRATEGIES - EFFECTS ON DISEASE CONTROL

- Poster 25: ***Is it useful to disinfect dental unit water systems? A study of the dental unit water systems of Barcelona City***
RM Araujo & N Contreras (Spain)

SHELLFISH

- Poster 26: ***Probing Norwalk-like virus presence in shellfish with artificial neural networks***
G Brion, S Lingeriddy, TR Neelakantan, M Wang, R Girones, DN Lees, A Allard & A Vantarakis (USA; Spain; UK; Sweden; Greece)
- Poster 27: ***Comparison of different primer sets for the RT-PCR detection of hepatitis A virus and astrovirus in mussel tissues***
JL Romalde, C Ribao, L Vilariño & JL Barja (Spain)
- Poster 28: ***Virological analysis of shellfish for food safety and control***
A Carducci, N Lucchesi, B Casini, F Mazzoni & M Verani (Italy)
- Poster 29: ***Environmental factors influencing human viral pathogens and their potential indicator organisms in the Blue Mussel, *Mytilus edulis*: first Scandinavian report***
BE Hernroth, A-C Conden-Hansson, A-S Rhenstam-Holm, R Girones & AK Allard (Sweden; Spain)

TRACING SOURCES OF MICROBIAL CONTAMINATION

- Poster 30: ***Differentiation of faecal *Escherichia coli* from humans and animals by Random Amplified Polymorphic DNA-PCR (RAPD-PCR)***
D Venieri, A Vantarakis & M Papapetropoulou (Greece)
- Poster 31: ***F-RNA coliphages and faecal sterols used as indicators in tracing the source of faecal pollution to either animal or human origin in the Umgeni water catchment area***
A Sundram, N Jumanlal, W John, IW Bailey, MM Ehlers & WOK Grabow (South Africa)

- Poster 32: **Detection of animal enteric viruses in water samples**
V Ley, MA Jiménez-Clavero, N Gomez & JC Sáiz (Spain)
- Poster 33: **The utility of a novel bacterial ratio for watershed management: a case study**
J Booth & GM Brion (USA)
- Poster 34: **Detection of adenovirus by PCR for tracing the source of faecal contamination from human, swine, or bovine/ovine origin**
CM de Motes¹, P Clemente-Casares¹, A Hundesa¹, M Martín² & R Girones¹ (Spain)
- Poster 35: **The generation and evaluation of an E. coli ribotype Library for Tampa Bay**
TL Berg, VJ Harwood & JB Rose (USA)
- Poster 36: **Determining contamination sources of coastal bathing sites in northern Germany by application of biological and chemical tracer substances**
C Höller & E-A Heinemeyer (Germany)
- Poster 37: **Tracing and quantifying turbidity and suspended particles in protected catchments**
K Cinque, M Stevens, S Haydon, D Roser, N Ashbolt & R Leeming (Australia)

INTERVENTION STRATEGIES WATER TREATMENT

- Poster 38: Inactivation of pathogens and indicator organisms in drinking water stored in rural household containers
N Potgieter, MM Ehlers & WOK Grabow (South Africa)
- Poster 39: **Microbiological quality of ground and surface water used for domestic purposes in rural areas of South Africa**
MA Vrey, MM Ehlers, WB Van Zyl, MB Taylor, DN Pavlov, J Van Heerden, JME Venter, JC Vivier, JC De Villiers, E Van Zyl & WOK Grabow (South Africa)
- Poster 40: **Evaluation of the microbial quality of water supplies to municipal, mining and squatter communities in the Bindura urban area, Zimbabwe**
H Nyati (Zimbabwe)
- Poster 41: **Repressive effects of yeast extract on photoreactivation of Escherichia coli**
K Oguma, H Katayama, H Mitani & S Ohgaki (Japan)
- Poster 42: **Microbicidal effect of hydrogen peroxide, silver and the combination of both in water**
W Pribil, S Pflieger & R Sommer (Austria)
- Poster 43: **Evaluation of factors affecting the performance of small water supplies for the removal of indicator bacteria in rural developing areas of South Africa: case study - Alice WTP**
MNB Momba, N Makala & B Brouckaert (South Africa)
- Poster 44: **Water quality monitoring at Blantyre Water Board, Malawi**
AD Kalea (Malawi)
- Poster 45: **Removal efficiencies of endocrine disruptors in drinking water treatment plants and incidence of microbial contaminants in Arizona, USA**
A Alum, H Ryu & M Abbaszadegan (USA)
- Poster 46: **Microbial quality of reclaimed water distribution systems and treatment efficacy**
M Abbaszadegan, H Ryu, A Alum & J Brereton (USA)

MICROBIAL INTERACTIONS WITH BIOFILMS

- Poster 47: **Biofilm process in constructed wetlands characterisation modelling and optimisation**
SMS Qasem, SR Ragusa, D McNevin & C Mitchell (Australia)
- Poster 48: **Construction and evaluation of a GFP labelled environmental Aeromonas hydrophila for use in biofilm studies**
SM September, SN Venter & VS Brözel (South Africa)
- Poster 49: **Occurrence of non-TB Mycobacterium in biofilms of drinking water distribution systems in South Africa**
SM September, FA Els, SN Venter & VS Brözel (South Africa)

CRYPTOSPORIDIUM

- Poster 50: ***Validation of a flatbed membrane concentration method for Cryptosporidium oocysts and Giardia cysts using US EPA Method 1623 as reference***
M du Preez, G Idema & N Ramgopaul (South Africa)
- Poster 51: ***Detection of infectious Cryptosporidium parvum oocysts in untreated and treated wastewater***
AL Gennaccaro, MR McLaughlin, W Quintero-Betancourt, JB Rose & DE Huffman (USA)
- Poster 52: ***The search for Cryptosporidium oocysts and Giardia cysts in source water used for purification***
M Grundlingh & CME de Wet (South Africa)
- Poster 53: ***The fate of Cryptosporidium oocysts and Giardia cysts during a treatment process***
M Grundlingh, CME de Wet, JC Geldenhuys, E van der Walt & H Enslin (South Africa)
- Poster 54: ***Validation and implementation of Method 1623 at Rand Water***
M Grundlingh & CME de Wet (South Africa)
- Poster 55: ***A comparison of Envirocheck™ and Filta-Max™ filtration systems for Cryptosporidium oocysts and Giardia cysts detection by USEPA Method 1623***
PMR Machada & DA Cerqueira (Brazil)
- Poster 56: ***Full-scale balance between disinfection and disinfection by-product: achieving bromate's standards while assuring Cryptosporidium inactivation***
C Bourny, C Galey, D Gatel, L Herremans & J Cavard (France)
- Poster 57: ***Removal of Cryptosporidium oocysts at a Yorkshire Water treatment works***
JG O'Neill, C Ridsdale & A Hockin (UK)

INTERVENTION STRATEGIES WASTEWATER TREATMENT

- Poster 58: ***Disinfection of sludge using lime stabilisation and pasteurisation in a small wastewater treatment plant***
R Keller, RF Passamani-Franca, ST Cassini & FR Goncalves (Brazil)
- Poster 59: ***The effects of sanitation management in expanding urban areas on the microbiological water quality of the Modder River - what does ten years of monitoring tell us?***
M Griesel & P Jagals (South Africa)

VIRUSES

- Poster 60: ***Detection of enteroviruses in raw and treated drinking water supplies in South Africa***
MM Ehlers, WOK Grabow & DN Pavlov (South Africa)
- Poster 61: ***Series of surveys for enteric viruses and indicator organisms in Tokyo Bay after an event of combined sewer overflow***
H Katayama, K Oguma, H Furumai & S Ohgaki (Japan)
- Poster 62: ***Evaluation of virological quality of sewage from four biological treatment plants by a nested-PCR technique***
G Komninou, A Vantarakis & M Papapetropoulou (Greece)
- Poster 63: ***Application of a molecular method for the detection of group A rotaviruses in raw and treated water***
WB van Zyl, PJ Williams, WOK Grabow & MB Taylor (South Africa)
- Poster 64: ***Identification of cytopathogenic isolates from environmental matrices: application of analytical protocols***
B Casini, L Stefani, A Giuntini, M Verani & A. Carducci (Italy)
- Poster 65: ***Seasonal variation of total culturable viruses and indicator bacteria in drinking water sources***
H-M Chung, S-H Oh, Y-J Jang, H-K Lee, Y-S Jeong & Y-H Chung (Korea)

- Poster 66: ***Application of integrated-cell culture RT-PCRs to determine the occurrence of enteric viruses in irrigation water and associated minimally processed foods***
MB Taylor, S Nadan, WB van Zyl, JME Venter, D Pavlov, N Potgieter & JM Barnes (South Africa)
- Poster 67: ***Detection of infectious pathogenic viruses in water and wastewater samples from urbanised areas in Japan***
D Sano, T Watanabe, T Matsuo & T Omura (Japan)
- Poster 68: ***Poliovirus vaccine strains in sewage and river water in South Africa***
DN Pavlov, WB van Zyl, WOK Grabow & MM Ehlers (South Africa)

RISK ASSESSMENT

- Poster 69: ***Microbial risk assessment: small water systems in Taiwan***
B-M Hsu, Y-L Huang, N-M Wu, W-H Hsu & H-D Jang (Taiwan)
- Poster 70: ***Improved risk assessment of piped systems using Geographical Information Systems (GIS)***
S Godfrey & G Howard (UK)
- Poster 71: ***Associations between Giardia duodenalis genotypes and potential risks***
H Yip, H Wickins, J McLaughlin, G Nichols, C Amar, C Lane & B Said (UK)
- Poster 72: ***HIV/AIDS and groundwater: a grave concern for South Africa?***
LM Webber & MB Taylor (South Africa)
- Poster 73: ***Investigation of factors influencing the 2001 cholera epidemic in South Africa - development of a predictive risk model using GIS technology***
S Rushworth & IW Bailey (South Africa)

BATHING WATERS AND HEALTH

- Poster 74: ***Incident management protocol for cyanobacteria and their associated toxins***
L van Baalen, HH du Preez & A Maritz (South Africa)
- Poster 75: ***Characterisation of microbial water quality in recreational waters from Puerto Rico and St. Thomas, US Virgin Island***
EE Sánchez, GA Toranzos, M Suárez, R Harrigan & H Smith (Puerto Rico; US Virgin Islands)
- Poster 76: ***Poor quality water in swimming pools associated with a substantial risk of otitis externa due to Pseudomonas aeruginosa***
M Hajjartabar (Iran)
- Poster 77: ***Importance of phytoplankton populations of Loch Vaal for recreation***
AJH Pieterse & L van Baalen (South Africa)
- Poster 78: ***Survival and re-growth of enterococci in coastal environments***
HD Taylor & O Gvozdyak (UK)
- Poster 79: ***Evaluation of microbiological quality of Greek coastal waters***
A Vantarakis, A Tsibouxi, A Thanassiadou & M Papapetropoulou (Greece)
- Poster 80: ***A model for risk assessment of small-scale bathing ponds***
F Mascher, FP Pichler-Semmelrock, H Friedl, F Reinthaler, M Köck, O Feenstra & E Marth (Austria)
- Poster 81: ***Preliminary results from a survey of spa pool water quality in London***
S Surman, JV Lee, S Lai, L Gordon & S Platt (UK)

IDENTIFICATION OF MICROBIAL CONTAMINANTS

- Poster 82: ***Sensitive detection of pathogens in environmental water samples using magnetic capture hybridisation combined with PCR or real-time PCR***
DE Thompson, VB Rajal & S Wuertz (USA)
- Poster 83: ***The use of F-RNA coliphage serotyping to determine the origin of faecal contamination in drinking water stored in rural household containers***
N Potgieter, CL Obi, FMG Mushau, PO Bessong, EO Igumbor & WOK Grabow (South Africa)

- Poster 84: ***Biolog identification of Escherichia coli O157:H7 and other sorbitol-negative bacteria isolated from river water and sewage samples***
MM Ehlers, WOK Grabow & EE Müller (South Africa)
- Poster 85: ***Combining direct viable count (DVC) and fluorescent in situ hybridisation (FISH) to enumerate viable E. coli in rivers and wastewaters***
TG Armisen & P Servais (Belgium)
- Poster 86: ***Comparison of agar based methods for the isolation and enumeration of heterotrophic bacteria with the new multidose Idexx™ SimPlate method***
M Vulindlu, A Charlett, S Surman & JV Lee (South Africa; UK)
- Poster 87: ***Real-time monitoring of pathogenic microorganisms in the aquatic environment - new developments in cytometry and fluorescent probes***
P Lebaron, J Baudart & P Catala (France)
- Poster 88: ***Development of procedures for rapid detection of E. coli O157:H7 from source and finished water samples***
Z Bukhari, J Weihe & M LeChevallier (USA)
- Poster 89: ***Validating the verification procedure of total coliform bacteria and E. coli***
LY Liew, CME de Wet & AG de Wet (South Africa)
- Poster 90: ***Demonstration of a rapid microbial monitor for water quality monitoring***
AM Prescott, J Massanet-Nicolau & D Holt (UK)
- Poster 91: ***16S rDNA based identification of heterotrophic bacteria isolated from domestic water supply systems in Lebanon***
S Tokajian & F Hashwa (Lebanon)

LEGIONELLA

- Poster 92: ***Comparison of the use of natamycin in place of cycloheximide in the selective isolation medium for the isolation of Legionella species from environmental samples***
JV Lee, SB Surman & A Bouwer (UK)

MOLECULAR STUDIES

- Poster 93: ***Development of a sensitive PCR method for the detection of Toxoplasma gondii in water***
C Kourenti & P Karanis Germany)
- Poster 94: ***Evaluation of a rapid polymerase chain reaction based detection technique for Vibrio cholerae isolates***
WJ le Roux, D Masosabi, CME de Wet & SN Venter (South Africa)
- Poster 95: ***Construction and evaluation of GFP-tagged Salmonella isolates for use in survival and dissemination studies***
LM Burke, NS Brözel & SN Venter (South Africa)

INTERVENTION STRATEGIES CONTROL AT POINT-OF-USE

- Poster 96: ***Pilot field comparison of impact of traditional alum flocculation, chlorination, and combined flocculation-chlorination point-of-use water treatment on drinking water quality in Western Kenya***
JA Crump, GO Okoth, L Slutsker, BH Keswick & SP Luby (USA; Kenya)
- Poster 97: ***Evaluation of the purification capacity of nine portable, small scale water purification devices***
A Hörman, R Rimhanen-Finne, L Maunula, N Torvela, C-H von Bonsdorff, J Rapala, K Lahtii & M-L Hänninen (Finland)
- Poster 98: ***Safe household water treatment and storage using ceramic filtration***
TF Clasen (UK)
- Poster 99: ***Inactivation of enteric microbes in home water by electrochemical oxidant from brine (NaCl) and free chlorine***
LV Venczel, CE Robinson & MD Sobsey (USA)
- Poster 100: ***Combined flocculation/disinfection treatment for microbial and chemical contaminant removal on a point-of-use basis in developing countries***
BH Keswick, PF Souter, GD Cruickshank, MZ Tankerville, B Ellis, D Langworthy, K Metz, J Perry, MR Appleby, N Hamilton & AL Jones (USA; UK)

- Poster 101: ***“Real time”, microbiological performance monitored, drinking water purification systems for emergency situations***
D Zyser & G Tanny_(Israel)
- Poster 102: ***Providing safe water using a market-based approach to reduce paediatric diarrhoeal illness in areas of microbiologically contaminated water***
GS Allgood & BH Keswick (USA)
- Poster 103: ***Point-of-use water treatment units: new procedure for assessment of the elimination of microorganisms***
PJ Williams, EE Müller, DN Pavlov & WOK Grabow (South Africa)
- Poster 104: ***Improvement of microbiological quality in low-income households in New Delhi, India, through social marketing and behaviour change communications***
K Jafa (India)

2007 SYMPOSIUM – CALL FOR BIDS

It may seem a little early but at Cape Town there will be a call for ideas on where to hold the 2007 Symposium! Those interested in sponsoring the Symposium should (a) notify the Secretary by **July 31st 2003** and (b) be prepared to make a 5-10 minute presentation at Cape Town in support of their bid. The presentation will also be hosted on the Group’s web site and selection of the 2007 venue will be decided by email ballot of all HRWM Group members (who should hold IWA membership) registered with the Secretary as of October 1st 2003.

REQUEST FOR INFORMATION

Persistence of microbial pathogens in groundwater is a growing area of research. Specifically, the use of surrogate parameters, such as coliphage and *Clostridium perfringens*, for the presence of both faecal derived protozoan and viral presence in groundwater is becoming of increasing concern.

Research is being undertaken by Sam Godfrey of the Water, Engineering and Development Centre (WEDC), Loughborough University, UK into the effectiveness of varied engineering barriers to the reduction of risk of microbial contamination in point sources in Mozambique. He is examining the potential use of appropriate surrogate indicators and would be interested in learning of global experience in the survival times of these parameters in tropical climates. If you have any information that of relevance, please email Sam Godfrey.

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**Next issue deadline
15th August 2003**

Please send contributions to Ray Morris at microbe@ntlworld.com

DON'T FORGET TO REGISTER FOR CAPE TOWN!