TITLE: COMBINATION OF CULTURE METHODS AND qPCR FOR DETECTION OF *legionella pneumophila* IN HOUSEHOLD DRINKING WATER RESERVOIRS IN RESISTENCIA, CHACO, ARGENTINA.

AUTORS: Lösch LS[1,2], Villasanti ML[2], Deluca GD[1], Medina MG[1,2], Merino LA[1,2]
INSTITUTION: 1-Área de Bacteriología, Instituto de Medicina Regional, Universidad Nacional del Nordeste, Resistencia, Chaco, Argentina. 2-Cátedra de Microbiología, Parasitología e Inmunología, Facultad de Medicina, Universidad Nacional del Nordeste, Corrientes, Argentina

ABSTRACT
Legionella pneumophila and other related *Legionella* bacteria cause Legionellosis. *L. pneumophila* is the primary pathogen transmitted by water that produces 90% of cases of Legionnaires' disease. *Legionella* spp. is considered emerging pathogens that are found in a variety of aquatic environments. They are able to survive in a wide range of physicochemical conditions and colonize distribution systems and storage of drinking water. *Legionella* spp. pose a significant public health risk when they colonize man made water systems and grow to high concentrations.There is little information of the incidence of Legionnaires' disease in Latin America. In Argentina the incidence of pnuemonias as a consequence of *Legionella* infection is approximately 2%. Nonetheless there is no information of the occurrence of *Legionella* in engineered systems in the country. The aim of this study was to detect the presence of *Legionella pneumophila* in household drinking water tanks of the city of Resistencia, Chaco. The sampling was non-probabilistic for convenience. Forty water samples taken from different points in the city were studied. *Legionella* detection in the samples was performed by culture as set out in the ISO standard 11731:1998. Real-time polymerase chain reaction (qPCR) assay was applied to isolates obtained by culture and identified as *Legionella* spp according to the ISO standards. The target sequences used corresponded to *23S rRNA* gene, for the confirmation of the genus, and *mip* gene specific for the species *L. pneumophila*. In 15 (37.5%) of the 40 samples studied, *Legionella* spp was recovered. The presence of *L. pneumophila* was confirmed by qPCR in 14 of 15 positive samples. In addition, 4 of these samples (10%) were also positive for another species of the genus *Legionella.* The number of samples studies represents 0.03% of households connected to the public water distribution system of Resistencia city. This study demonstrated the presence of *L. pneumophila* and other *Legionella* species in residential drinking water reservoirs of Resistencia city. Also it represents the first report of the surveillance of this organism in engineered water systems of Argentina.

Keywords: Legionella pneumophila, drinking water, reservoirs

Development Agencies: Secretaría General de ciencia y Técnica -UNNE