

CURRICULUM VITAE



GENERAL

Name. Héctor Aarón Lee Rangel

Date of birth. November 3, 1981.

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Work and Research Experience

Professor (2011-present), Universidad Autónoma de San Luis Potosí, Facultad de Agronomía. Coordinator of the program of Animal Sciences.

National System Researches (SNI, spanish abreviattion) Level I. CONACYT-Mexico (National Council for Science and Technology). Area VI Biotechnology and Agricultural Sciences.

Education

B.S. (2005). Animal Science. Universidad Autónoma Chapingo (UACH). Mexico.

M.Sc. (2007). Nutrition of ruminants. Colegio de Postgraduados. Mexico.

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Ph.D. (2011). Nutrition of ruminants. Colegio de Postgraduados. Mexico.

Research stay. (2012). Improvement in energy metabolism research and intake regulation. Faculty of Veterinary Medicine, National University of La Plata, Buenos Aires, Argentina.

Research visit. (2018). Ohio State University. Dr. A. E. Relling, OARDC, Wooster, Ohio.

Director MSc. Thesis

Fulgencio Ferretiz Rodriguez. 2019. Effect of protected methionine and choline on dairy production and milk quality. Thesis. Master of Agricultural Sciences, College of Agriculture. UASLP.

Nydia Suarez suarez. 2018. Biocoline evaluation on productivity in transition period of east friesland ewes. Thesis. Master of Agricultural Sciences, College of Agriculture. UASLP.

Israel Mendez Cardona. 2018. *In vitro* fermentation of diets with three levels of inclusion of copra meal. Thesis. Master of Agricultural Sciences, College of Agriculture. UASLP.

Carolina Tovilla Espinoza 2018. Nutritional contribution of thermoprocessed soybean in sheep rambouillet. Thesis. Master of Agricultural Sciences, College of Agriculture. UASLP.

Jose Alejandro Roque Jimenez 2016. Effect of natural zeolite on live weight changes, ruminal fermentation and nitrogen metabolism of ewes. Thesis. Master of Agricultural Sciences, College of Agriculture. UASLP.

Carlos Gomez Flores 2015. Fibrolytic use of exogenous enzymes on rambouillet ewes in early lactation. Thesis. Master of Agricultural Sciences, College of Agriculture. UASLP.

Arredondo Ruiz Victalina. 2013. Morphological characterization of Pelibuey sheep in Colima, México. Thesis. Master of Agricultural Sciences, College of Agriculture. UASLP.

Cifuentes Lopez R. O. 2012. Growth, completion and carcass characteristics of lambs fed diets high in grain. Thesis. Master of Agricultural Sciences, College of Agriculture. UASLP.

Director PhD. Thesis

Cifuentes Lopez O. 2018. Effects of dietary calcium propionate on hypothalamic neuropeptide messenger RNA expression and performance in finishing lambs. Thesis. PhD. Animal Sciences, College of Agriculture. UASLP.

Cayetano de Jesus J. 2019. Effects of different levels of zilpaterol hydrochloride supplementation on growth performance and carcass characteristics in finishing ram lambs in feedlot. Thesis. PhD. Animal Sciences, College of Agriculture. UASLP.

Peer-reviewed publications

C.V. Dr. Héctor Aarón Lee Rangel

Ochoa, M. C., Meza, C. H., Vázquez, J. G., Stewart, C. A., Rosales, C. N., Ochoa, A. A., **Lee-Rangel H** & Martin, G. B. (2019). Pregnancy and Litter Size, But Not Lamb Sex, Affect Feed Intake and Wool Production by Merino-Type Ewes. *Animals: an open access journal from MDPI*, 9(5).

German David Mendoza, Mario Francisco Oviedo, Juan Manuel Pinos, **Héctor Aarón Lee-Rangel**, Anayeli Vázquez, Rogelio Flores, Francisco Pérez, Alejandro Roque, Oswaldo Cifuentes. 2019. Milk production in dairy cows supplemented with herbal choline and methionine. http://revista.fca.uncu.edu.ar/images/stories/pdfs/En_prensa/Lee_Rangel.pdf

Roque-Jiménez, J. A., Pinos-Rodríguez, J. M., Rojo-Rub, R., Mendoza, G. D., Vazquez, A., De Jesus, J. C., & **Lee-Rangel, H. A.** (2018). Effect of natural zeolite on live weight changes, ruminal fermentation and nitrogen metabolism of ewe lambs. *South African Journal of Animal Science*, 48(6).

Cifuentes-Lopez, R. O., **Lee-Rangel, H. A.**, Garcia-Lopez, J. C., Vicente, J. G., Flores-Primo, A., & Pinos-Rodriguez, J. M. (2018). Effect of calcium propionate on live weight, consumption and carcass of lambs fed on alfalfa hay (*Medicago sativa*). *Agrociencia*, 52, 81-88.

García-López Juan C, **Lee-Rangel Héctor A**, López S, Vicente J, Pardo-Sedas V, Estrada-Coates AT, Pinos-Rodríguez JM. 2018. Effects of *larrea tridentata* on growth, organ weights and hepatic enzymes of broilers. *Agrociencia* 52: 1-8.

Sánchez, N., Mendoza, G. D., Martínez, J. A., Hernández, P. A., Camacho Diaz, L. M., **Lee-Rangel, H. A.**, ... & Flores Ramirez, R. (2018). Effect of *Caesalpinia coriaria* Fruits and Soybean Oil on Finishing Lamb Performance and Meat Characteristics. *BioMed Research International*, 2018.

Lerma-Reyes, I., Mendoza-Martínez, G. D., Rojo-Rubio, R., Mejia, M., García-Lopez, J. C., & **Lee-Rangel, H. A.** (2018). Influence of supplemental canola or soybean oil on milk yield, fatty acid profile and postpartum weight changes in grazing dairy goats. *Asian-Australasian journal of animal sciences*, 31(2), 225.

J.C. García-López, G. Álvarez-Fuentes, J.M. Pinos-Rodríguez, Y. Jasso-Pineda, H.I. Contreras-Treviño, M.A. Camacho-Escobar, S. López-Aguirre, H.A. Lee-Rangel and J.A. Rendón-Huerta. 2017. Anti-inflammatory Effects of *Chrysactinia mexicana* Gray Extract in Growing Chicks (*Gallus gallusdomesticus*) Challenged with LPS and PHA. *Int. J. Curr. Microbiol. App. Sci.* 6(1): 550-562.

Miranda, L. A., Lee-Rangel, H. A., Mendoza-Martínez, G. D., Crosby-Galván, M. M., Relling, A. E., Pinos-Rodríguez, J. M., ... & González Hernandez, M. (2017). Influence of calcium propionate on in vitro fermentation of sorghum-based diets. *Revista de la Facultad de Ciencias Agrarias*, 49(1).

Negrete, L. O., Pinos-Rodríguez, J. M., Grajales-Lagunes, A., Morales, J. A., García-López, J. C., & Lee-Rangel, H. A. (2017). Effects of increasing amount of dietary *Prosopis laevigata* pods on performance, meat quality and fatty acid profile in growing lambs. *Journal of animal physiology and animal nutrition*, 101(5).

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Gaston Federico, Rolando Rojo, Leonel Avendaño, Jose Vazquez, **Hector Lee**, Benito Albarran, Agustin Olmedo, Ingacio Dominguez, Abdel Fattah. 2016. Productivity, quality and fatty acids profile in milke of goats feed with two forage source. *Ecosistemas y Recursos Agropecuarios*, Vol 3, Pag. 173-180.

D. Lopez, JF Vazquez, N. Lopez V, **H. A. Lee**, A.Z.M. Salem, J.L. Borquez, I.A. Dominguez and R. Rojo. 2016. In vitro gas production of foliage from three browse tree species treated with different dose levels of exogenous fibrolytic enzymes. *Journal of Animal Physiology and Animal Nutrition*. Accepted.

Mendoza Martínez G, Pinos J, **Lee Rangel H**, Hernández García P, Rojo Rubio R, Relling R. 2016. Effects of dietary calcium propionate on growth performance and carcass characteristics of finishing lambs. *Anim. Prod. Sci.* <http://dx.doi.org/10.1071/AN14824>.

R. Rojo-Rubio, A.E. Kholif, A.Z.M. Salem, G.D. Mendoza, M.M.M.Y. Elghandour, J. F. Vazquez-Armijo, **H. Lee-Rangel**. 2015: Lactation curves and body weight changes of Alpine, Saanen and Anglo-Nubian goats as well as preweaning growth of their kids, *Journal of Applied Animal Research*, DOI: 10.1080/09712119.2015.1031790.

Olmedo J. A., Rojo R. R., Arece G. J., Salem A. Z., Morales A. E., Albarrán P. B., **Lee-Rangel H.**, Vázquez A. F. 2015. Lysiloma acapulcensis extract on digestibility and ruminal fermentation of a diet for sheep. *Ecosistemas y Recur. Agropecuarios* vol.2 no.5.

Sánchez-Trocino M. Mendoza G.D. Gual-Sill F. Plata F. X. Martínez J. A. **Lee H.** and Crosby M. M. 2013. The effect of *Muhlenbergia macroura* dietary level on intake, digestibility and weight changes in volcano rabbit (*Romerolagus diazi*). *J. App. Anim. Research* DOI:10.1080/09712119.2012.739087

Arredondo-Ruiz V., Macedo-Barragán R., Molina-Cárdenas, Magaña-Álvarez J., Prado-Rebolledo O., García-Márquez L., Herrera-Corredor A., and **Lee-Rangel H.** 2012. Morphological characterization of Pelibuey sheep in Colima, México. *Trop. Anim. Health Prod.* DOI 10.1007/s11250-012-0303-1.

Lee-Rangel H. A., Mendoza, G. D. and González, S.S. 2012. Effect of calcium propionate and sorghum level on lamb performance. *Animal Feed Science and Technology* 177: 237–241.

Mota, N., G.D. Mendoza, F.X. Plata, J.A. Martínez, **H. Lee**, R. Rojo and M.M. Crosby. 2011. Effect of exogenous glucoamylase enzymes and reduction of grain level on lamb performance. *J. App. Anim. Research*, 39,2: 129-131.

P.A. Hernández, G.D. Mendoza, J.R. Bárcena, F.X. Plata, J.A. Martínez and **H.A. Lee**. 2011. Effect of exogenous fibrolytic enzyme and slow release urea in finishing rations for lambs. *J. App. Anim. Research*, 39:2, 104-107.

Rodríguez, A., L., C. Mendoza, M., G., D. Mota, S., N. Osorio, T., A., I. **Lee, R., H.** y Hernández, G., P., A. 2011. Efecto del selenio y cromo orgánico sobre el comportamiento de ovinos en finalización: Nota técnica. *Revista Científica, FCV-LUZ*, Vol. XXI, No. 2, 152-155.

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Lee-Rangel H.A., J.M. Pinos-Rodríguez, G.D. Mendoza, S.S. González, M.A. Montes, A.S. Trejo, Y. Jasso-Pineda. 2010. Effect of a ruminal buffer and exogenous amylolytic enzymes on growth and digestion in lambs fed high concentrate diets. *J. Appl. Anim. Res.* 37: 117-120.

Mendoza, M. G. D., Plata P. F. X., Ramírez M. M., Mejía D. M. A., **Lee R. H. A.**, Bárcena G. R. 2007. Evaluación de alimentos integrales para el engorde de intensivo de ovinos. *Revista Científica, FCV-LUZ*, Vol. XVII, No. 1, 66-72.

Lee-Rangel, H. A., Mendoza, G. D., Pinos-Rodríguez, J. M., Bárcena, R. Plata, F. Ricalde, R. 2006. Effect of an exogenous glucoamilase during different periods of time of performance of lambs fed sorghum based diets. *J. Appl. Anim. Res.* 29: 141-144.

Conference Proceedings

M. M. Crosby, G. D. Mendoza-Martinez, A. Relling, A. Vazquez- Valladolid, **H. A. Lee-Rangel**, J. A. Martinez, and M. Oviedo. 2017. Influence of supplemental choline on milk yield, fatty acid profile, and postpartum weight changes in suckling ewes. *J. Dairy Sci.* Vol. 100, Suppl. 2 125.

E. Castillo-Lopez, J. Moats, N. D. Aluthge, H. A. Ramirez Ramirez, T. A. McAllister, C. L. Anderson, D. A. Christensen, T. Mutsvangwa, **H. Lee-Rangel**, G. B. Penner, and S. C. Fernando. 2016. Effect of feeding different faxseed-based products on the rumen microbial community of dairy cows evaluated by high-throughput DNA sequencing. *J. Anim. Sci* Vol. 94, E-Suppl. 5/*J. Dairy Sci.* Vol. 99, E-Suppl. 1

J. Cayetano de Jesús, R. Rojo-Rubio, **H. Lee-Rangel**, L. Avendaño-Reyes, U. MaciasCruz, A. Olmedo-Juarez, J. Vazquez-Armijo, and S. Rebollar-Rebollar. 2016. Effects of different levels of zilpaterol hydrochloride on feedlot performance and carcass characteristics of hair-breed ram lambs. *J. Anim. Sci* Vol. 94, E-Suppl. 5/*J. Dairy Sci.* Vol. 99, E-Suppl. 1

Julio Godinez-Cruz, Oswaldo Cifuentes-Lopez, Jorge Cayetano, **Hector Lee-Rangel**, German Mendoza, Anayeli Vazquez, and Alejandro Roque. 2015. Effect of choline inclusion on lamb performance and meat characteristics. *J. Anim. Sci.* Vol. 93, Suppl. s3/*J. Dairy Sci.* Vol. 98, Suppl. 2, 766 pp.

Lerma-Reyes I, **HA Lee-Rangel**, MA Rivas-Jacobo, CA Herrera-Corredor. 2013. Inclusión de aceites vegetales en la alimentación de cabras criollas para la producción de leche y cabrito. XXIII Reunión de la Asociación Latinoamericana de Producción Animal. La Habana, Cuba.

Vazquez-Valladolid Vazquez-Valladolid A., Avalos G.C., Santoyo C. H., Avila J., **Lee-Rangel H.** 2013. Caracterización técnica, económica y social de empresas cunículas en el centro de México XXIII Reunión de la Asociación Latinoamericana de Producción Animal. La Habana, Cuba.

Héctor A. Lee, German D. Mendoza, Juan M. Pinos, Pedro A. Hernández. 2013. Effect of calcium propionate level on productive performance and carcass characteristics in finishing lambs II. 11th World Conference on Animal Production. Beijing, China.

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Herrera-Medina RE, MA Rivas-Jacobo, **HA Lee-Rangel**, RE Santos- Díaz y CA Herrera-Corredor. 2013. Suplementación con Granos de Cereales en Ovinos Rambouillet en Condiciones de Pastoreo. IV Congreso Internacional de Manejo de Pastizales SOMMAP. COLPOS, Texcoco, México.

Lerma-Reyes I, MA Rivas-Jacobo, **HA Lee-Rangel**, CA Herrera-Corredor. 2013. Productividad de Cabras Criollas en Pastoreo Suplementadas con Aceites Vegetales. IV Congreso Internacional de Manejo de Pastizales SOMMAP. COLPOS, Texcoco, México.

V. Arredondo-Ruiz, R. Macedo-Barragan, Molina-Cárdenas, J. Magaña-Alvarez, O. Rebolledo Prado, L. Garcia-Marquez, A. Herrera-Corredor, and **Lee H. Rangel** 2012. Body measurements of sheep and harmony morphostructural Pelibuey in the state of Colima. Proceedings of the National Congress Buiatrics XXXVI. Merida, Yucatan.

V. Arredondo-Ruiz, R. Macedo-Barragan, Molina-Cárdenas, J. Magaña-Alvarez, O. Rebolledo Prado, L. Garcia-Marquez, A. Herrera-Corredor, and **Lee H. Rangel**. 2012. Racial and Functional Indices Pelibuey sheep in the state of Colima. Proceedings of the National Congress Buiatrics XXXVI. Merida, Yucatan.

Lee-Rangel, H. A., González-Muñoz *, S. S., Miranda-Romero, L.A. and Mendoza-Martinez, G.D. 2011. Vitro fermentation of diets with two levels of grain and calcium propionate. Animal Production Argentina Magazine Vol 31 Suppl. 1: 271-401.

H. A. Lee-Rangel, S. S. González-Muñoz, G. D. Mendoza-Martinez, A. Hernández-Garay, and M. M. Crosby-Galvan. 2011. Calcium propionate and grain level effects on performance, ruminal variables and plasma glucose of finishing lambs. J. Anim. Sci Vol 89, E-Suppl. 1 / J Dairy Sci Vol 94, E-Suppl. 1. 145 pp.

Lee-Rangel, H. A., Mendoza-Martinez, G., D., Gonzalez-Munoz., S., S. Empirical prediction model to estimate feed intake in sheep farms in intensive conditions. XXXIX Annual Meeting Proceedings Mexican Association for Animal Production and Food Security. Chapingo, Mexico. May 4th – 6th 2011.

H. A. Lee-Rangel, G. D. Mendoza-Martinez, S. S. Gonzalez, G. Ramirez-Valverde, and J. H. Avellaneda-Cevallos. 2007. Effect of a rumen buffer and an amilolytic enzymes mixture added to a sorghum grain diet on Finishing Criollo lambs. J. Anim. Sci Vol 85, Suppl. 1 / J Dairy Sci Vol 90, Suppl. 1/Poult. Sci Vol 86, Suppl. 1. 338p.

Lee, R. H., Mendoza, M.G.D.; Pinos, R.J.M. 2004. Effect of exogenous amylolytic enzymes on rumen fermentation, digestibility and development of sheep fed on grain sorghum. XXXII Annual Meeting Proceedings Mexican Association of Animal Production. Monterrey, October 27th-29th . Mexico. Pp. 173-176.