TH100 A model of personal preparation for the international agricultural teaching and extension program between the United States and China. J. Peng*, *Purdue University*, *West Lafayette, IN*.

There are prosperous agricultural education collaborations between the U.S. and China as a result of intensifying global economic integration. A globally competent person is one of the many factors that can affect the success of an international agricultural program between the U.S. and China. With growing globalization, the increased demand for qualified persons to fill international agriculture educator positions at colleges and universities prompted the idea of writing this paper. This autoethnographic study mainly draws on an animal agricultural educator′s long-term personal life and professional agricultural education experiences in China as well as a six-year (2002-2007) personal life and professional agricultural education experiences in the U.S. This autoethnographic study specifically focuses on an animal agricultural educator′s beliefs and practices relate to the U.S.-China culture and agricultural science learning. This autoethnographic study outlines the important personal preparation experiences that relate to the international agriculture teaching and extension program between the U.S. and China. The personal preparation experiences eventually build up the personal competence for the international agricultural teaching and extension program. Among the personal competence, the understanding of other cultures and languages is emphasized as a basic communication skill that is required to work in an international program. Personal motivation is another key competence that is required to work in any international program. Using the real examples of an international agriculture educator, this paper indicates the role as well as the specialization areas of individuals who plan to work in the international agricultural teaching and extension arena. Overall, this paper presents an innovative model of the preparation of an educator in the international agricultural teaching and extension area, with also the hope for the other educators and administrators to evaluate and generate their own 'ideal' personnel qualifications for that area.

Key Words: International, Personal Preparation, Agricultural Teaching and Extension

TH101 Energy and financial analysis of the conversion of a conventional beef cattle production system to an organic beef foodchain in Veracruz, Mexico. P. Fajersson*[1], G. Alvarado[1], G. Benítez[1], I. J. González[1], J. Nieto[1], W. Sangabriel[1], and P. Parada[2], [1]*Colegio de Postgraduados, Campus Veracruz*, *Veracruz, Mexico*, [2]*Carnes La Rumorosa*, *Poza Rica, Veracruz, Mexico*.

Energy and financial analyses were conducted for the conversion of a conventional 730 ha pasture based 550 head beef cattle system (CPS) to an organic beef cattle foodchain (OBF), selling beef in 8 states in Mexico, to evaluate its sustainability and profitability over time. Visits to the OBF, interviews with the owner and a questionnaire were used to obtain production costs, quantify inputs and collect data to calculate the energy and financial costs before and after the conversion. In the energy analysis, the inputs used were identified, quantified, each assigned a value and then transformed into energy units (thousands of BTU) and compared, and also used to determine critical points of the foodchain to identify opportunities to improve resource use. A sensibility analysis of 3 future scenarios identified strengths and weaknesses in a dynamic environment. The fixed costs were USD 525,010 over time, but the variable ones (USD 85,932 in the CPS) were less than in the OBF (USD 67,227). The marginal gain of the fixed costs were USD -448,296 and USD -368,682, respectively, while the difference between return on investment was 21% in the CPS and 63% in the OBF, which represents the real gain from the conversion. Using only the variable costs, the marginal gain was USD 86,407 for the CPS and USD 166,022 for the OBF, in a 1 to 1.92 ratio. The organic certification increases production costs, but guarantees access to value added markets. It is possible for the OBF to achieve the required increase in beef production to remain competitive without deterioration of natural resources in its low input, organic agroforestry system, but the economic gain depends on the value added to the organic beef. The energy flow reflected the utilization of natural resources and the values their direct and indirect use in generating beef for society. In this context, the OBF was more efficient, 0.65 compared to 0.45, and 3.2 times more efficient in producing a kg of beef than the CPS. The conversion increased the system´s sustainability and the OBF remained profitable in all future scenarios.

Key Words: Organic Beef, Energy Efficiency, Profitability

TH102 A meta-analysis on effects of supplementing low quality roughages with tree foliages on intake and growth in sheep. A. K. Patra*, *West Bengal University of Animal and Fishery Sciences*, *Belgachia, Kolkata, India*.

A meta-analysis of data obtained from previous studies was conducted to understand the responses of foliage supplementation on intakes of basal DM (BDMI), total DM (TDMI), and daily gain (ADG). Thirty-four published studies containing 223 treatments and 1127 sheep met criteria for inclusion in the meta-analysis. Major predictive variables considered were percentages of foliages in diet (SPTP), CP in foliages (SCPP), CP in basal roughages (BCPP), CP in diet (CPP) and foliage CP intake (SCPI). TDMI (g/d) increased quadratically ($P < 0.001$) with increasing SCPP, SCPI ($R^2 = 0.66$), BCPP, SPTP ($R^2 = 0.58$) and CPP ($R^2 = 0.73$). The maximal TDMI was 778 g/d at 42% SPTP, 894 g/d at 19.8% CPP, 893 g/d at 148 g/d SCPI and 749 g/d at 26.4% SCPP ($P < 0.001$; $R^2 = 0.58$, 0.73, 0.66, and 0.37, respectively). BDMI increased quadratically with increasing SPTP, CPP and BCPP; but decreased quadratically with increasing SCPP ($P < 0.001$; $R^2 = 0.07$). The breakpoint of BDMI was 570 g/d at 6.58% of CPP ($P < 0.001$, $R^2 = 0.28$). Overall, BDMI responded at very low level of SPTP, peaking at 7.6% SPTP with 572 g/d of BDMI ($P < 0.001$, $R^2 = 0.72$). However, when BCPP was less than 3%, the maximal BDMI was 489 g/d at foliage levels of 25.7%. When BCPP was between 3 to 6%, maximal BDMI was at 13% of foliage and the basal forage intake of 597 g/d; However, BDMI decreased linearly with SPTP when BCPP was greater than 6%. Foliage CP content did not influence on BDMI (g/d) when basal diets had CP percentage greater than 4%, but decreased quadratically with increasing SCPP when BCPP was less than 4%. ADG responded positively and quadratically to SCPP, SCPI, STPT, CPP and TDMI (g/d) and the relationships were moderate to high. Maximal ADG was 42 g/d at 43% SPTP, 41 g/d at 9.4% CPP, 42 g/d at 53 g/d SCPI, 35 g/d at 25% SCPP and 46 g/d at 889 g/d TDMI ($P < 0.001$; $R^2 = 0.74$, 0.84, 0.74, 0.29 and 0.74, respectively). Results indicate that the interactions of quality and quantity of foliage and quality of basal forage influence the intake of DM and animal performance in sheep.

Key Words: Foliage Supplements, Meta-Analysis, Intake