

เอกสารอ้างอิง

- บุญล้อม ชีวะอิสระกุล. 2543. หลักการโภชนศาสตร์สัตว์ : แร่ธาตุและวิตามิน. ใน : เอกสารการสอน
ชุดวิชาหลักโภชนศาสตร์และอาหารสัตว์, หน้า 80-86, สาขาส่งเสริมการเกษตรและ
สหกรณ์ มหาวิทยาลัยสุโขทัยธรรมาธิราช, กรุงเทพฯ.
- บุญล้อม ชีวะอิสระกุล. 2546. ชีวเคมีทางสัตวศาสตร์. ปรับปรุงครั้งที่ 2. ภาควิชาสัตวศาสตร์ คณะ
เกษตรศาสตร์ มหาวิทยาลัยเชียงใหม่, เชียงใหม่. 202 หน้า.
- บุญล้อม ชีวะอิสระกุล และสุชน ตั้งทวีวัฒน์. 2540(ก). การเสริมเอนไซม์ไฟเตสในอาหารไก่เนื้อ
1. อาหารที่มีกากเรปซีดหรือกากทานตะวันหรือมีโปรตีนและฟอสฟอรัสระดับต่ำ. *ว.
เกษตร*, 13 (1):76-87.
- บุญล้อม ชีวะอิสระกุล และสุชน ตั้งทวีวัฒน์. 2540(ข). ไฟเตส : สารขัดขวางการใช้ประโยชน์ของ
ฟอสฟอรัสในสัตว์. *ว. สัตวบาล*, 7(37): 23-30.
- ปณิธาวิรี แก้วบริสุทธิ. 2546. การเสริมเอนไซม์ไฟเตสเพื่อทดแทนโภชนะบางส่วนในอาหารไก่
เนื้อ. ปัญหาพิเศษปริญญาโท ภาควิชาสัตวศาสตร์ คณะเกษตรศาสตร์ มหาวิทยาลัย
เชียงใหม่, เชียงใหม่. 65 หน้า.
- เปี่ยมศักดิ์ แมนะเสวต. 2538. แหล่งน้ำกับปัญหามลพิษ. สำนักพิมพ์จุฬาลงกรณ์มหาวิทยาลัย,
กรุงเทพฯ. 318 หน้า.
- มนต์ชัย ดวงจินดา. 2537. การใช้โปรแกรม SAS เพื่อวิเคราะห์งานวิจัยทางสัตว. ภาควิชาสัตว
ศาสตร์ คณะเกษตรศาสตร์ มหาวิทยาลัยขอนแก่น ขอนแก่น. 129 หน้า.
- ยงยุทธ โอสถสภา. 2543. ธาตุอาหารพืช. ภาควิชาปฐพีวิทยา คณะเกษตรศาสตร์ มหาวิทยาลัย
เชียงใหม่, เชียงใหม่. 424 หน้า.
- รุ่งนภา ลิ้มเจริญพร. 2544. การเสริมเอนไซม์ไฟเตสในอาหารสัตว์ปีก. วิทยานิพนธ์ปริญญาโท
ภาควิชาสัตวศาสตร์ คณะเกษตรศาสตร์ มหาวิทยาลัยเชียงใหม่, เชียงใหม่. 135 หน้า.
- รุ่งนภา ลิ้มเจริญพร, บุญล้อม ชีวะอิสระกุล และสุชน ตั้งทวีวัฒน์. 2540. การเสริมเอนไซม์ไฟ
เตสในอาหารไก่เนื้อ 2. อาหารที่มีกากเรปซีดโดยมีฟอสฟอรัสระดับต่ำ. ใน : รายงานการ
ประชุมทางวิชาการสาขาสัตวศาสตร์ งานเกษตรภาคเหนือครั้งที่ 1, หน้า 139-151,
มหาวิทยาลัยเชียงใหม่. เชียงใหม่.
- วิโรจน์ จันทรัตน์. 2538. กายวิภาคและสรีรวิทยาของสัตว์ปีก. ภาควิชาเทคโนโลยีทางสัตว สถาบัน
เทคโนโลยีการเกษตรแม่โจ้, เชียงใหม่. 873 หน้า.

- สมาคมผู้ผลิตไก่เพื่อส่งออก. 2546. สถานการณ์ไก่เนื้อปี 2542-2546. *ธุรกิจอาหารสัตว์*, 20(89): 5-10.
- สมาคมผู้ผลิต ผู้ค้า และส่งออกไข่ไก่. 2546. สถานการณ์ไข่ไก่ปี 2542-2546. *ธุรกิจอาหารสัตว์*, 20(90):9-14.
- ศุภมาส พนิชศักดิ์พัฒนา. 2540. ภาวะมลพิษของดินจากการใช้สารเคมี. พิมพ์ครั้งที่ 2. สำนักพิมพ์ มหาวิทยาลัยเกษตรศาสตร์, กรุงเทพมหานคร. หน้า 1-81.
- Acamovic, T. 2001. Commercial application of enzyme technology for poultry production. *World's Poult. Sci. J.*, 57:225-242.
- Arends, J.J. 2003. Fly manement for poultry production [online]. Available : www.jabb.com/flymanualjabb.pdf [2004, Apr 6].
- Autin, J. L. and L. S. Lee. 2000. Calcium, phosphorus, vitamin D and vitamin K. In : Swine nutrition, pp: 187-212, 2nd ed., CRC Press, Inc., Boca Raton, London.
- Ballam, G.C., T.S. Nelson and L.K. Kirby. 1985. Effect of different dietary levels of calcium and phosphorus on phytate hydrolysis by chick. *Nutr. Rep. Intern.*, 32(4):909-913.
- Beer, S. and A.W. Jongbloed. 1992. Effect of supplementary *Aspergillus niger* phytase in diets for piglets on their performance and apparent digestibility of phosphorus. *Anim. Prod.*, 55:425-430.
- Boling, S.D., M.W. Douglas, M.L. John, X. Wang, C.M. Parson, K.M. Koelkebeck and R.A. Zimmermant. 2000(a). The effects of dietary available levels and phytase on performance of young and older laying hens. *Poult. Sci.*, 79:224-230.
- Boling, S.D., M.W. Douglas, R.S. Shirley, C.M. Parson and K.M. Koelkebeck. 2000(b). The effects of various dietary levels of phytase and available phosphorus on performance of laying hen. *Poult. Sci.*, 79:535-538.
- Bruce, J.A.M. and F. Sundstol. 1995. The effect of microbial phytase in diets for pigs on apparent ileal and faecal digestibility, pH and flow of digesta measurements in growing pigs fed a high fibre diet. *Can. J. Anim. Sci.*, 75:121-127.
- Camden, B.J., P.C.H. Morel, D.V. Thomas, V. Ravindran and M.R. Bredford. 2001. Effectiveness of exogenous microbial phytase in improving the bioavailabilities of phosphorus and other nutrients in maize soya bean meal diets for broilers. *Anim. Sci.*, 73:289-297.

- Carlos, A.B. and H.M. Edwards. 1998. The effects of 1,25-dihydroxycholecalciferol and phytases on the natural phytate phosphorus utilization by laying hens. *Poult. Sci.*, 7:850-858.
- Cole, J.A. 1991. The role of the nutritionist in designing feeds for the future. *Pig News and Inf.*, 12(3) :393-401.
- Cromwell, G.L. and R.D. Coffey. 1991. Phosphorus a key essential nutrient, yet a possible major pollutant; its central role in animal nutrition. *In: Biotechnology in the Feed Industry. Proceedings of Alltech's Seventh Annual Symposium.* pp. 133-145, Alltech Technical Publication. Kentucky.
- Cromwell, G.L. T.S. Stahly, R.D. Coffey, H.J. Monegue and J.H. Randolph. 1993. Efficiency of phytase in improving the bioavailability of phosphorus in soybean meal and corn soybean meal diets for pigs. *J. Anim. Sci.*, 71:1831-1840.
- Daniel, B.B. and A.K. Edward. 1995. Water pollution and treatment. *In : Environmental science,* pp:398-423, John Wiley and Sons, Inc., New York.
- Edward, H.M., Jr. 1983. Phosphorus. 1. Effect of breed and strain on utilization of sub-optimal levels of phosphorus in the ration. *Poult. Sci.*, 62:77-84.
- Edward, H.M. and J.R. Veltmann. 1983. The role of calcium and phosphorus in the etiology of tibial dyschondroplasia in young chicks. *J. Nutr.*, 113:1568-1575.
- Eeckhout, W. and N. De Paepe. 1994. Total phosphorus, phytate phosphorus and phytase activity in plant feedstuffs. *Anim. Feed Sci. Technol.*, 47:19-29.
- Eng, K. 1996. Nutrition, manure, environment do not equal a simple equation. *Feedstuffs*, 68 (44):11-12.
- Gordon, R.W. and D.A. Roland, Sr. 1997. Performance of commercial laying hens fed various phosphorus levels with and without supplement phytase. *Poult. Sci.*, 76:1172-1177.
- Gordon, R.W. and D.A. Roland, Sr. 1998. Influence of supplemental phytase on calcium and phosphorus utilization in laying hens. *Poult. Sci.*, 77:290-294.
- Hunton, P. 1990. Reduce exposure to ammonia. *Poultry Misset*, 22:11.
- Jacob, J.P., S. Ibrahim, R. Blair, H. Namkung and I.K. Paik. 2000(a). Using enzyme supplemented reduced protein diets to decrease nitrogen and phosphorus excretion of broilers. *AJAS*, 13(11):1561-1567.

- Jacob, J.P., S. Ibrahim, R. Blair, H. Namkung and I.K. Paik. 2000(b). Using enzyme supplemented reduced protein diets to decrease nitrogen and phosphorus excretion of White Leghorn hens. *AJAS*, 13(12):1743-1749.
- Kamberi, M.A., H.M. Edwards, G.M. Pesti, S. Muratovic, S. Muji and R.I. Bakalli. 2001. The response of laying hens to phytase added to corn soybean meal based diets containing two levels of available phosphorus. 2. Phytate phosphorus utilization. *Poult. Sci.*, 80 (Suppl.1):1978 (Abstr.).
- Keshavarz, K. 1998(a). Investigation on the possibility of reducing protein, phosphorus and calcium requirement of laying hen by manipulation of time of access to these nutrients. *Poult. Sci.*, 77:1320-1332.
- (b). Further investigation on the effect of dietary manipulation of protein, phosphorus and calcium requirement for reducing their daily requirement of laying hens. *Poult. Sci.*, 7:1333-1346.
- Keshavarz, K. 2000(a). Nonphytate phosphorus requirement of laying hens with and without phytase on a phase feeding program. *Poult. Sci.*, 79:748-763.
- (b). Reevaluation of nonphytate phosphorus requirement of growing pullets with and without phytase. *Poult. Sci.*, 79:1143-1153.
- Kies, A.K., K.H.E. Van Hemert and W.C. Sauer. 2001. Effect of phytase on protein and amino acid digestibility and energy utilisation. *World's Poult. Sci. J.*, 57:109-126.
- Kim, S.H., W.J. Lee, S.J. Lee, D.J. Yu, S.Y. Park, B.S. Kang, J.C. Na and K.S. Ryu. 2001. Effects of dietary supplemental microbial phytase and nonphytate phosphorus on performance, nutrient digestibility and egg quality of laying hens. *Poult. Sci.*, 80 (Suppl. 1):1977 (Abstr.).
- Korin, L.L. and C.N. Coon. 1999. A bioassay to determine the effect of phytase on phytate phosphorus hydrolysis and total phosphorus retention of feed ingredients as determined with broilers and laying hens. *Poult. Sci.*, 78:1151-1157.
- Leek, B.F. 1993. The problem of nitrogen waste products in animal production : Investigation into mode of action of certain glycocomponents capable of manipulating nitrogen. *In : Biotechnology in the Feed Industry*, pp. 307-330, Alltech Technical Publications, Kentucky.

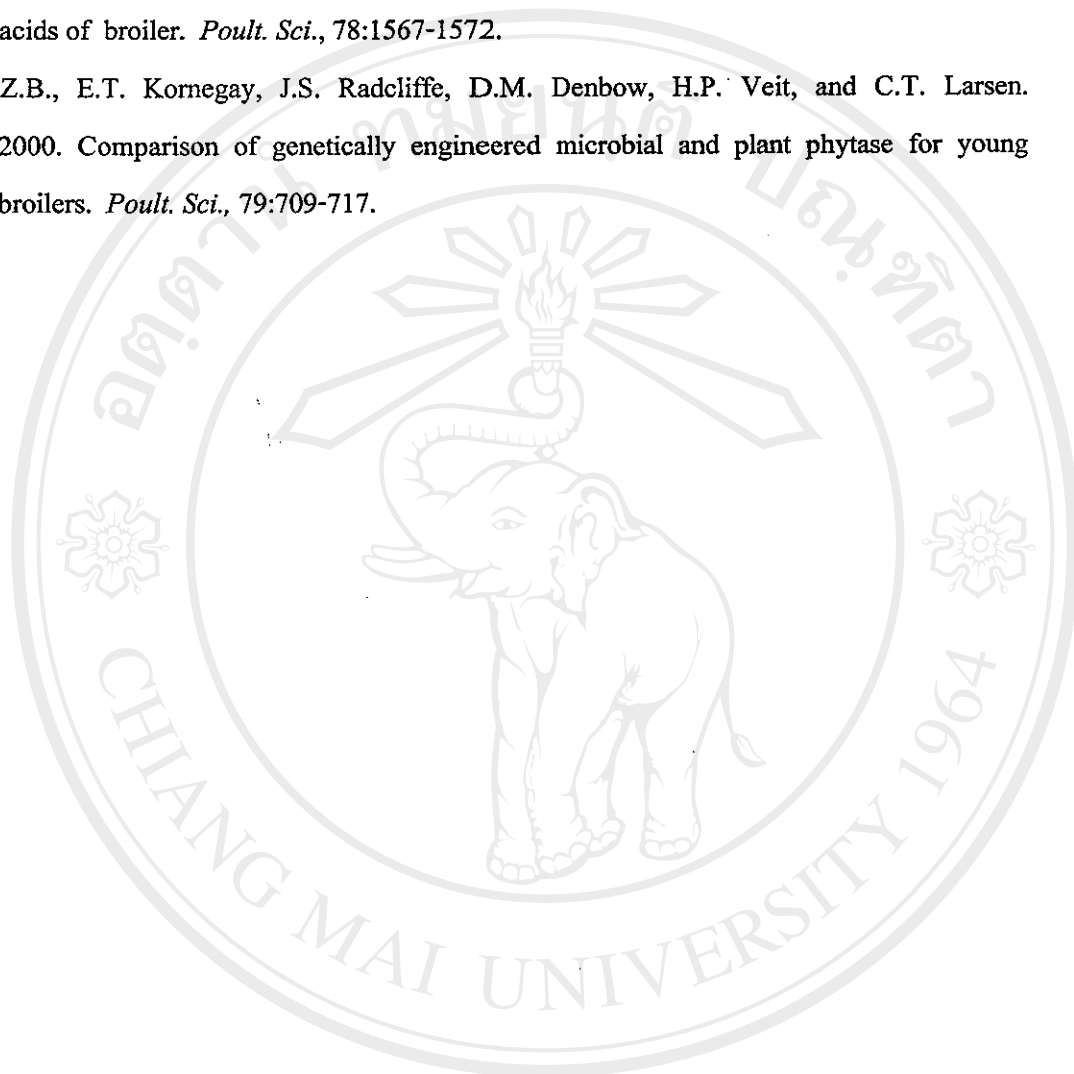
- Leeson, S. and J.D. Summers. 1997. *Commercial Poultry Nutrition*, 2nd ed., University of Guelph, Ontario.
- Lei, X.G., P.K. Ku, E.R. Miller and M.T. Yokoyama. 1993. Supplement corn-soybean meal diets with microbial phytase linearly improves phytate phosphorus utilization by weanling pigs. *J. Anim. Sci.*, 71:3359-3367.
- Liburn, M. and J. Nixon. 2001. The effects of supplemental phytase on egg shell quality in broiler breeder hens. *Poult. Sci.*, 80 (Suppl. 1):554 (Abstr.).
- Meevootisom, V. 1993. Biotechnology of animal feeds and additives : Use of microbes as probiotics in animal feeds. *In : Work shop 15-26 March , 1993. Center for Biotechnology and Department of Biotechnology. pp. 1-20., Mahidol Univ., Bangkok.*
- Mohammed, A., M.J. Gibney and T.G. Tyaylor. 1991. The effects of dietary levels of inorganic phosphorus, calcium and cholecalciferol on the digestibility of phytate P by the chick. *Br. J. Nutr.*, 66:251-259.
- Nahm, K.H. 2000. A strategy to solve environmental concerns caused by poultry production. *World's Poult. Sci. J.*, 56:379-388.
- Namkung, H. and S. Leeson. 1999. Effect of phytase enzyme on dietary nitrogen corrected apparent metabolizable energy and the ileal digestibility of nitrogen and amino acids in broiler chicks. *Poult. Sci.*, 78:1317-1319.
- Nelson, T.S. 1976. The hydrolysis of phytate phosphorus by chicks and laying hens. *Poult. Sci.*, 55:2262-2264.
- NRC (National Research Council). 1994. *Nutrient Requirements of Poultry*, 9th ed. National Academy Press, Washington, D.C.
- Paul, P. 2001. Using dietary and management strategies to reduce the nutrient excretion of poultry [online]. Available : www.lpes.org/Lesson11/11_2_N_Poultry_Manure_Litter.pdf [2004, Apr 3].
- Pauzenga, U. 1991. Animal production in the 90's in harmony with nature : A case study in the Netherland. *In : Biotechnology in the Feed Industry. Proceedings of Alltech's Seventh Annual Symposium. pp. 121-131, Alltech Technical Publication. Kentucky.*

- Punna, S. and D.A. Roland. 1999. Influence of supplemental microbial phytase on first cycle laying hens fed phosphorus-deficient diets from day one of age. *Poult. Sci.*, 78:1407-1411.
- Qian, H., H.P. Veit, E.T. Kornegay, V. Ravindran and D.M. Denbow. 1996. Effect of supplemental phytase and phosphorus on histological and other tibial bone characteristic and performance of broilers fed semipurified diets. *Poult. Sci.*, 75:618-626.
- Qian, H., E.T. Kornegay and D.M. Denbow. 1997. Utilization of phytate phosphorus and calcium as influenced by microbial phytase, cholecalciferol and the calcium total : phosphorus ratio in broiler diets. *Poult. Sci.*, 76:37-46.
- Radcliffe, J.S., E.T. Kornegay and R.S. Pleasant. 1999. Effects of microbial phytase on amino acid and mineral digestibilities in pigs fitted with steered ileo-cecal valve cannulas and fed a low protein corn soybean meal based diet. *J. Anim. Sci.*, 77 (Suppl. 1):242 (Abstr.).
- Rao, S.V.R., V.R. Reddy and V.R. Reddy. 1999(a). Enhancement of phytate phosphorus availability in the diets of commercial broilers and layers. *Anim. Feed Sci. Technol.*, 79:211-222.
- 1999(b). Non-phytin phosphorus requirements of commercial broilers and White Leghorn layers. *Anim. Feed Sci. Technol.*, 80:1-10.
- Ravindran, V., W.L. Bryden. and E.T. Kornegay. 1995. Phytase : Occurrence, bioavailability and implications in poultry nutrition. *Poult. Avian Biol. Rev.*, 6(2):125-143.
- Ravindran, V., S. Cabahug, G. Ravindran, P.H. Selle and W.L. Bryden. 2000. Response of broiler chickens to microbial phytase supplementation as influenced by dietary phytic acid and non phytate phosphorus levels. II. Effects on apparent metabolizable energy, nutrient digestibility and nutrient retention. *Br. Poult. Sci.*, 41:193-200.
- Ravindran, V., P.H. Selle, G. Ravindran, P.C.H. Morel, A.K. Kies and W.L. Bryden. 2001. Microbial phytase improves performance, apparent metabolizable energy and ileal amino acid digestibility of broilers fed a lysine-deficient diet. *Poult. Sci.*, 80:338-344.
- Reddy, N.R., M.D. Pierson, S.K. Scaathe and D.K. Salunkhe. 1989. Phytates in cereals and legumes. CRC Press, Inc., Boca Raton, Florida. 152 p.

- Reed, R., J. Nixon and M. Lilburn. 2001. The effects of dietary protein and available phosphorus on production measures and nutrient excretion by egg-type hens from 21 to 36 weeks of age. *Poult. Sci.*, 80 (Suppl. 1):367 (Abstr.).
- Riis, P.M. 1983. Minerals : Calcium and Phosphorus. *In* : Dynamic biochemistry of animal production. Department of animal, The Royal Veterinary and Agricultural University, pp. 295-301, Copenhagen.
- Rosie, W. 1999. Parathyroid hormone [online]. Available : <https://courses.stu.qmul.ac.uk/srmd/kb/resources/endocrinology%20resource/systems/calcium.htm> [2004, Apr 6].
- Scheideler, S.E., N. Ward and M. Jalal. 2001. Effects of Roche Ronozyme CT on Hy-Line W-98 laying hen performance when fed low phosphorus diets. *Poult. Sci.*, 80 (Suppl. 1):1979 (Abstr.).
- Schoner, F.J. and P.P. Hoppe. 1992. Microbial phytase, a tool to alleviate environmental phosphorus pollution from broiler production. *In* : Proc. 14th World Poultry Congress, Vol.3, pp. 429-432, Montreal.
- Scott, T.A., R. Kampen and F.G. Silversides. 1999. The effect of phosphorus, phytase enzyme and calcium on the performance of layers fed corn-based diets. *Poult. Sci.*, 78:1742-1749.
- Sebastian, S., S.P. Touchburn, E.R. Chavez and P.C. Lague. 1996(a). The effects of supplemental microbial phytase on the performance and utilization of dietary calcium, phosphorus, copper and zinc in broiler chickens fed corn-soybean diets. *Poult. Sci.*, 75:729-736.
- Sebastian, S., S.P. Touchburn, E.R. Chavez and P.C. Lague. 1996(b). Efficacy of supplemental microbial phytase at different dietary calcium levels on growth performance and mineral utilization of broiler chickens. *Poult. Sci.*, 75:1516-1523.
- Simons, P.C.M., H.A.J. Versteegh, A.W. Jongbloed, P.A. Kemme, P. Slump, K.D. Bos, M.G.E. Wolters, R.F. Beudeker and G.J. Verschoor. 1990. Improvement of phosphorus availability by microbial phytase in broilers and pigs. *Br. J. Nutr.*, 64:525-540.
- Sohail, S.S., and D.A. Roland. 1999. Influence of supplemental phytase on performance of broilers four to six weeks of age. *Poult. Sci.*, 78:550-555.
- Sonzogni, W.C., S.C. Chapra, D.E. Armstrong, and T.J. Logan. 1982. Bioavailability of phosphorus inputs to lakes. *J. Environ. Qual.*, 11:555-563.

- Traylor, S.L., G.L. Cromwell, M.D. Lindemann and D.A. Knabe. 2001. Effects of level supplemental phytase on ileal digestibility of amino acids, calcium and phosphorus in dehulled soybean meal for growing pigs. *J. Anim. Sci.*, 79:2634-2642.
- Temperton, H. and J. Cassidy. 1964. Phosphorus requirements of poultry. III. The effect of feeding a vegetable type diet without supplemental phosphorus to turkeys. *Br. Poult. Sci.*, 5:87-88.
- Um, J.S. and I.K. Paik. 1999. Effects of microbial phytase supplemental on egg production, eggshell quality, and mineral retention of laying hens fed different levels of phosphorus. *Poult. Sci.*, 78:75-79.
- Um, J.S., I.K. Paik, M.B. Chang and B.H. Lee. 1999. Effects of microbial phytase supplementation to diets with low non phytate phosphorus levels on the performance and bioavailability of nutrients in laying hens. *AJAS*, 12(2):203-208.
- Van der Klis, J.D., H.A.J. Versteegh, P.C.M. Simon and A.K. Kies. 1997. The efficacy of phytase in corn-soybean meal-based diets for laying hens. *Poult. Sci.*, 76:1535-1542.
- Yan, F., J.H. Kersey, C.A. Fritts, P.W. Waldroup, H.L. Stilborn, R.C. Crum, Jr., D.W. Rice, and V. Raboy. 2000. Evaluation of normal yellow dent corn and high available phosphorus corn in combination with reduced dietary phosphorus and phytase supplementation for broiler grown to market weights in litter pens. *Poult. Sci.*, 79:1282-1289.
- Yan, F., J.H. Kersey and P.W. Waldroup. 2001. Phosphorus requirements of broiler chicks three to six weeks of age as influenced by phytase supplementation. *Poult. Sci.*, 80:455-459.
- Yi, Z., E.T. Kornegay, V. Ravindran and D.M. Denbow. 1996. Improving phytate phosphorus availability in corn and soybean meal of broiler using microbial phytase and calculation of phosphorus equivalence value for phytase. *Poult. Sci.*, 75:240-249.
- Young, L.G., M. Leunissen and J.L. Atkinson. 1993. Addition of microbial phytase to diets of young pigs. *J. Anim. Sci.*, 71:2147-2150.
- Zhang, Z. and E.T. Kornegay. 1999. Phytase effects on ileal amino acid digestibility and nitrogen balance in finishing pigs fed a low-protein plant-based diet. *J. Anim. Sci.*, 77 (Suppl. 1):241 (Abstr.).

- Zhang, X., D.A. Roland, G.R. McDaniel, and S.K. Rao. 1999. Effect of natuphos phytase supplementation to feed on performance and ileal digestibility of protein and amino acids of broiler. *Poult. Sci.*, 78:1567-1572.
- Zhang, Z.B., E.T. Kornegay, J.S. Radcliffe, D.M. Denbow, H.P. Veit, and C.T. Larsen. 2000. Comparison of genetically engineered microbial and plant phytase for young broilers. *Poult. Sci.*, 79:709-717.



ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

Copyright© by Chiang Mai University

All rights reserved