

# Curriculum Vita

## Basil Kamil Dalaly

**Professor of Nutrition, Food Science and Hospitality  
South Dakota State University**

**Department:** Nutrition, Food Science and Hospitality

**Email:** basil.dalaly@sdstate.edu

**Original Employment Date:** February, 11, 2004

### Graduate Degrees and/or Educational Experience:

| Degree | Institution                   | Major            | Year |
|--------|-------------------------------|------------------|------|
| B.Sc.  | University of Baghdad         | Animal Husbandry | 1963 |
| M.S.   | South Dakota State University | Dairy Science    | 1967 |
| Ph.D.  | University of Nebraska        | Biotechnology    | 1970 |

### Professional Experience/Employment:

| Employer                        | Position                | Duties                    | Dates               |
|---------------------------------|-------------------------|---------------------------|---------------------|
| University of Nebraska          | Post-doctorate Fellow   | Research                  | 1970                |
| University of Mosul (Iraq)      | Assistant Professor     | Teaching,<br>And Research | 1971-1975           |
| University of Mosul             | Dean, College of Agric. |                           | 1975-1977           |
| Michigan State University       | Visiting Professor      | Research                  | 1977-1978           |
| University of Mosul (Iraq)      | Dean, College of Agric. |                           | 1984-1996           |
| Academy of Science (Iraq)       | Member                  |                           | 1996-present        |
| Giessen University<br>(Germany) | DAAD, Fellow            | Research                  | June-August<br>1989 |
| Ministry of Agriculture         | Senior Deputy Minister  | Research                  | 1996-2004           |
| South Dakota State Univ.        | Professor               | Teaching,<br>and Research | 2004-present        |

### Teaching Experience (At SDSU):

NFS 792 Enzymes  
NFS 760 Vitamins and Minerals  
NFS 704 Phytochemicals  
NFS 634 Techniques in Food and Nutrition research  
NFS 490/590 Seminar  
NFS 450/550 Food Analysis  
NFS 360 Food Chemistry  
NFS 151 Food Technology  
NFS 798 Thesis

## Significant Contribution to Research or Scholarship:

My main research interest is in the field of biotechnology, particularly enzyme isolation, purification, and immobilization for food industry.

In the ministry of Agriculture (Iraq), my objective was restructuring the research activities of the ministry and creates links with the colleges of agriculture.

## Awards and Honors:

First award of the Federation of Arab scientific Research Councils for authoring the book entitled "Selected Topics in Biotechnology", 1997.

Distinguished Professor Award, Mosul University, 1983.

## Patents

1. Using Crude Extract of *Calotropis procera* in Leather Bating, 2002.
2. A Design of Multi-Needles Injection Apparatus for Meat Tenderization, 2002.

## Publications

### A. Books:

1. Fundamentals of Biochemistry (1980).
2. Enzymes in Food Processing (translated 1981)
3. Food Chemistry (1982).
4. Understanding Enzymes (translated 1983).
5. The Proteins (1984).
6. Fundamentals of Biochemistry (revised 1986).
7. Food Analysis (1987).
8. Food Chemistry (revised 1988)
9. Selected Topics in Biotechnology (1993).
10. Fundamentals of Biochemistry (revised 1994)

### B. Journal Articles:

1. Factors in body and water-holding capacity of a low-fat spread-type dairy product. B.K. Dalaly, K.R. Spurgeon and S.W. Seas. J. Dairy Sci. Vol.51, No.6, 1968. (Abstract)
2. Isolation of human milk ribonuclease. B.K. Dalaly, I.R. Vakil and K.M. Shahani. J. Dairy Sci. Vol. 51, No. 6, 1968. (Abstract).
3. Simultaneous isolation of human milk ribonuclease and lysozyme. B.K. Dalaly, E. Eitenmiller, and K.M. Shahani. Analytical Biochemistry Vol. 37, No. 1, 1970.
4. Ammonia production in sheep in relation to different kinds of feed. M.R. Taka. B.K. Dalaly and N. Thanoon. Mesopotamia J. Agric. Vol. 8, No. 2, 1973.

5. Effect of spray drying process on the reconstitution of powdered milk of various domestic animals. M.K. Farag and B.K. Dalaly. *Mesopotamia J. Agric.* Vol. 8, No. 2, 1973.
6. Studies on retarding the viscosity development in milk caused by *Alcaligenes viscolactis* by using some common preservatives. B.K. Dalaly and M.K. Farag. *Mesopotamia J. Agric.* Vol. 8, No. 2, 1973.
7. Chemical and bacteriological studies on mineral and thermal springs in Ninevah province. B.K. Dalaly, S.A. Rahim and M.K. Farag. *Mesopotamia J. Agric.* Vol. 9, No. 2, 1974.
8. Studies on the factors affecting resistance to heat injured bacteria. M.K. Farag and B.K. Dalaly *Assuit Agric.* Vol. 6, No. 1, 1975.
9. The manufacture and composition of awshari cheese. B.K. Dalaly, L. Abdel Mottaleb and M.K. Farag. *Dairy Industries* Vol. 41, No. 2, 1976.
10. Studies on improving the quality of dibbis. B.K. Dalaly and H. Nour El-din. *Mesopotamia J. Agric.* Vol. 1, No. 2, 1976.
11. Effect of seasonal variations on the physical and chemical properties of essential oils in *Eucalyptus camaldulensis* Dehn. H. Nour El-din, A. Abou Dahab, B.K. Dalaly and F. Al-Ani. *Mesopotamia J. Agric.* Vol. 1, No. 1, 1976.
12. The composition of buffaloes milk in the Mosul area. B.K. Dalaly, L. Abdel Mottaleb and A. ElShasy. *Mesopotamia J. Agric.* Vol., No. 2, 1976.
13. Study of transformation of PP-DDT under the effect of certain treatments as revealed by gas chromatography. B. K. Dalaly and A.A. Salim. *Annals of Agric. Sci., Moshtaher*, Vol.8, 1977.
14. Effect of storage on residues of Anthio : S- (N- formal - methyl - carbamoyl - metal) dimethyl thiolothionate, on and in orange fruits. B.K. Dalaly and A.A. Salim. *Annals of Agric. Sci., Moshtaher*, Vol. 8. 1977.
15. Plastein from soybean protein isolate. B.K. Dalaly and R. Brunner. *Mesopotamia J. Agric.* Vol. 14, No. 2, 1979.
16. The paracaseinate-phosphate complex from buffalo milk under different concentrations of acid and salt. B.K. Dalaly, L. Abdet-Mottaleb. *Mesopotamia J. Agric.* Vol. 14, No. 2, 1979.
17. The suitability of different Iraqi barley varieties for malt production. A.S.H. Hussein, Hussein, B.K. Dalaly and K.H. Sharif. *Mesopotamia J. Agric.* Vol. 14, No. 2, 1979.
18. The distribution of natural and added copper in buffalo milk. B.K. Dalaly and L. Abdet-Mottaleb *Mesopotamia J. Agric.* Vol. 15, No. 1, 1980.
19. Human milk ribonuclease. B.K. Dalaly, R. Eitenmiller, B.A. Friend and K.M. Shahani. *Biochemical et Biophysical Acta.* 615: 381-391, 1980.

20. The plastein reaction and modified food protein system. B.K. Dalaly and J. Brunner. International Symposium on Food Technology in Developing Countries. Page 16. 1980.
21. Amylase production from yeast. B.K. Dalaly and A. Al-Banna. Mesopotamia J. Agric. Vol. 16, No. 1, 1981.
22. Human ribonuclease: II. Further studies on the isolated ribonuclease. B. K. Dalaly, R. Eitenmiller, B. A. Friend and K.M. Shahani. Published as paper No. 5859. J. series, Nebraska Agricultural Experimental Station. 1981.
23. Extracellular proteases from *Pseudomonas sp.* Isolated from raw milk. B.K. Dalaly and A. Abbo. Vol. 1, XXI International Dairy Congress, page 487, 1982.
24. Isolation of a protease from *S. Cerevisiae*. B.K. Dalaly and A. Al-Banna. Iraqi J. Agric. Sci. Vol. 1, No. 1, 1983.
25. Further studies on amylase from bakers yeast. B. K. Dalaly and A. Al-Banna. Iraqi J. Agric. Sci Vol. 2, No. 2, 1984.
26. Isolation of heat resistance proteases from *Pseudomonas fluorescence*. B.K. Dalaly and A. I. Abbo. Iraqi J. Agric. Sci. (Zanco) Vol. 3, 1985.
27. Partial purification and characterization of glucomylase from *Aspergillus niger*. B.K. Dalaly and A. Mahmood. Zanco J. Vol. 3, No. 2, 1985.
28. Isolation of heat resistance proteases from *Pseudomonas florescence*. B.K. Dalaly and A.I. Abbo. Zanco J. Vol. 3, No. 2, 1985.
29. Purification of trypsin inhibitor from *Viciafaba*. B.L. Dalaly and S.M.R. Al-Janabi. Zanco J. Vol. 3, No. 4, 1985.
30. Characterization of trypsin inhibitor from *Vicia faba*. B.K. Dalaly and S.M.R. Al-Janabi. Zanco J. Vol. 4, No. 1, 1986.
31. Isolation and partial characterization of glucose isomerase from *Streptomyces sp.* B.K. Dalaly and M.S. Abdullah. Zanco J. Vol. 4, supplement 1986.
32. Characterization of crude glucose isomerase from *Streptomyces sp.* A-B//32. B.K. Dalaly and M.S. Abdullah. Zanco J. Vol. 4, supplement 1986.
33. Studies on low activity of Bakers dry yeast upon storage, B.K. Dalaly and M.S. Tawfeeq. Zanco J. Vol., No. 1, 1987.
34. The composition of cow's milk in Mosul area. A. El-Shasly, B.K. Dalaly, and Abdel-Mottaleb. Mesopotamia J. Agric. Vol. 8. 1987.
35. Suitability of the different Iraqi barley varieties for malt production: H-Proteolytic and diastolic activity of some malted barley grain K.H.H. Sharaf and B.K. Dalaly. Proceedings; The first Scientific Conference of the Foundation of Technical Institutes. 1988.

36. Isolation and characterization of Iraq sheep lipase. B.K. Dalaly and R.M. Hanna. Mesopotamia J. Agric. Vol. 2 1. No. 2, 19 89.
37. Isolation characterization of Pepsin from local Sheep's. K. A. Shaker, B.K. Dalaly and .A. Saied. Basrah J. Agric. Sci. Vol. 2. No. 1.2. 1989.
38. Distribution of grain's chemical constituents of some Iraqi barley varieties. K.H.H. Sharaf and B.K. Dalaly. Tech. Res. J. Vol. 6, 1990.
39. Effect of mutation and some cultural condition on citric acid production by local strain of *Aspergillus niger*. M. Abdul-salam, F.A. Al-Ani and B.K. Dalaly Mesopotamia J. Agric. Vol. 1, No. 23, 199 1.
40. Some chemical and physical properties of locally grown wheat starches. S. Husain, A.B. Soolaka and B.K. Dalaly Mesopotamia J. Agric. Vol. 2, No. 23, 1991.
41. The influence of heat treatment on some chemical and physical properties of sheep milk. N.A.Al-Talib, M. Al-Tayar and B.K. Dalaly. Mesopotamia J. Agric. Vol. 23, No. 4, 1991.
42. Production of citric acid by a local strain of *Aspergillus niger*. And its mutants in date juice medium. M. Abdul-Salam, F.A. Al-Ani and B.K. Dalaly. Proceedings: The second Arab Modern Biotechnology Conference. Jordan, 1993.
43. Isolation and purification of B-galactosidase from *Streptococcus thermophilus*: I. Immobilization and some properties. W.A. Mahmood and B.K. Dalaly (sent for publication).
44. Isolation and purification of B-galactosidase from *Streptococcus thermophilus*: II, Characterization and some properties. W.A. Mahmood and B.K. Dalaly. Archives of Biotechnology, an International J., Vol. 43, 1994.
45. Isolation and immobilization of B-galactosidase from *Streptococcus thermophilus*: Further studies. B.K. Dalaly and W.A. Mahmood Mesopotamia J. Agric., Vol. 27, No. 2, 1995.
46. Hydrolysis of lactose in whey using B-galactosidase of *Kluyvermyces from* permeabilized cells. B.K. Dalaly and W.A. Mahmood. Mesopotamia J. Agric., Vol. 27, No. 2, 1995.
47. Improving citric acid production by mutation of *Asergillus niger* A.M. Al-Gubory and B.K. Dalaly. Mesopotamia J. Agric. Vol. 27, No. 2. 1995.
48. Fermentation columns for citric acid production by *Aspergillus niger* WCGUC-142 using solid state fermentations. A.M. Al-Gubory and B.K. Dalaly. Mesopotamia J. Agric. Vol. 28, No. 1, 1996.
49. Optimum conditions for citric acid production from *Aspergillus niger* WCOUC-142 using solid state fermentation. A. M. AL-Gubory and B. K. Dalaly. Mesopotamia J. Agric. vol. 25, No. 1, 1996.

50. Acid hydrolysis of spent grain. Y. A. Younis and B. K. Dalaly. *Mesopotamia J. Agric.* vol. 28, No. 3, 1996.
51. Production of single cell protein from acid hydrolysate by *C. utilis* and *T reesie*. Y. A. Younis and B. K. Dalaly. *Mesopotamia J. Agric.* vol. 28, No. 3, 1996.
52. Nutritional value of single cell protein produced from *C. utilis* and *T reesie*. Y. A. Younis and B. K. Dalaly. *Mesopotamia J. Agric.* Vol. 28, No. 3, 1996.
53. Low-Fat Butter, B. K. Dalaly and A. K. Hassan. *Iraqi J. of Agric.* vol. 4, No. 8. 1999.
54. Production of low-fat butter and partial substitution with vegetable oils. I- Fat constants and characteristics. . B. K. Dalaly and A. K. Hassan. *Iraqi J. of Agric.* vol. 4, No. 4. 1999.
55. Production of low-fat butter and partial substitution with vegetable oils. II- Physical and organolyptic properties. B. K. Dalaly and A. K. Hassan. *Iraqi J. of Agric.* vol. 4, No. 4. 1999.
56. The fatty acids and their relation with physical properties 'of the butter substituted with vegetable oils. B. K. Dalaly and A. K. Hassan. vol. 4, No. 8. 1999.
57. The composition of some legumes consumed in Iraq and the influence of cooking. B. K. Dalaly, H. M. Shahwan and A. S. H. Hussan. *Mesopotamia J. Agric.* vol. 31, No. 2, 1999.
58. The mineral content of some legumes consumed in Iraq. B. K. Dalaly, H. M. Shahwan and A. S. H. Hussan. *Mesopotamia. Iraqi J. Agric.* vol. 31, No. 2. 1999.
59. Some properties of local sheep pepsin and effect of some additives on its clotting activity. B. K. Dalaly, K.A. Shaker, N. A. Saeed, *Basrah J. Agric. Sci.* vol. 12, No. 2. 1999.
60. The role of poly galacturonase in fruit ripening of *Carica papaya* B. K. Dalaly, S. M. Rashed and F. A. Hussain. *Iraqi J. of Agric.*, vol. 5, No. 4. 2000.
61. Rainfed agriculture in Iraq for the season 1998-1999 and the drought issue. B. K. Dalaly and S. T. Al- Najafi. *J. of perspective Research.* vol. 1, 2000.
62. Ecological study on Bahr Al-Nagafi depression and investment for fish production. B. K. Dalaly, A. A. Al- Lami and A. N. Balasem. *Iraqi J. of Agric.*, vol.5 No.4, 2000.
63. Physical properties and chemical composition of legumes used in Iraq. B. K. Dalaly, H. M. Shahwan, and A.S. H. Hussain. *Basrah J. of Agric. Sci.*, 14 (1) 2001.
64. The effect of changing pH and salt concentration on the amount of water held in reconstituted buffalo cheese. B. K. Dalaly, T. K. Hassan. *Tirkrit J. of Agric. Sci.*, vol. 1, No. 2, 2001.

65. Cooking qualities of legumes consumed in Iraq. B. K. Dalaly, H. M. Shahwan, and A.S.H. Hussain. Tikrit J. Agric., Vol. I No. 3, 200 1.
66. Production, extraction, and crystallization of citric acid from sugar beet wastes using solid state fermentation by *Aspergillus niger*. B. K. Dalaly, A. M. Ali, Z. A. Saleh and R. M. Saleh. Education and Sci., J., Vol. 49, 200 1.
67. Milk production in Awassi and their crosses with D' man sheep. B. K. Dalaly, J. E Alkass, A.M. A. Saleh, and S. A. Magid. Iraqi J. Agric. Sci., 32 (5) 2001.
68. Using ground corn stover instead of ground barley straw as roughage for calves. B. K. Dalaly, S. A. Magid and A. A. A. Al- Sultan. Iraqi J. Agric. 7 (4) 2001.
69. Some change during production and storages of Yoghurt. F. O. Mhammad, A. K. Hassan, B. K. Dalaly. Iraqi J. Agric. Sci., Vol. 2 No.2, 200 1.
70. The food security of Iraq. B. K. Dalaly and S. T. Al- Najafi. Studies in Iraqi Economic. 2001.
71. Physico - chemical and bacteriological studies of drinking water characteristics of residential area of Midland Refineries Company. K. A. Shaker, B. K. Dalaly. J. Tikrit. Agric. Sci., Vol. (2), No. (3), 2002.
72. Practical Applications of *Calotropis procera* proteases. I- The utilization of *Calotropis* in leather bating. B. K. Dalaly, K. A. Shaker, Iraqi J. Agric. 2003.
73. Using *Calotropis procera* leaves protease in the tenderization of aged ewe meat.  
I. Immersion method. K. A. Shaker, O. F. Ahmeh, and B. K. Dalaly. Iraqi J. of  
Agric. Sci., Vol. (5), No. 4, 2005.
74. Using *Calotropis procera* leaves protease in the tenderization of aged ewe meat.  
II. Injection method. K. A. Shaker, O. F. Ahmeh, and B. K. Dalaly. Iraqi J. of  
Agric. Sci., Vol. (5), No. 4, 2005.
75. Isolation and Purification of Lysozyme from *Calotropis procera* Latex. K. A. Shaker. S. Abdulrahman, and B. K. Dalaly. Iraqi J. Agric. Sci., Vol. (1), 2006.
76. Partial Characterization of *Calotropis procera* Lysozyme. K. A. Shaker, S. Abdulrahman, and B. K. Dalaly. Iraqi J. Agric. Sci., Vol. (1), 2006.

## Significant Contributions in Research

1. DOE/USDA Biorefinary Proposal - Atmospheric Pressure Low Temperature Biomass Liquefaction and Biorefining Model, \$2.2 Million. (University of Minnesota, SDSU, University of Nebraska, Pending).

2. Sun Grant, South Dakota Center  
Introduction of a new line of enzyme research to obtain biomass derived sugar Through microbial enzymatic hydrolysis of cellulose and hemicellulose to glucose. A variety of fuels can be made from biomass resources. (Approved).
3. Biorefinery Institute for Renewable Energy (BIRE), SD-DOE EpSCoR Proposal \$3.375 Million.  
Also, submitted the following proposals in the field of renewable energy:
4. North Dakota Soybean Council (Biodiesel and Other New Uses Research).
5. South Dakota Corn Utilization Council (Immobilized Lipases for Biodiesel Production from Corn Oil).

## Supervising Graduate Students

### M.S. Students

1. Chemical change in processed cheese from Buffaloes Milk, 1978.
2. Evaluation of Different Barley Varieties for Malt production, 1978.
3. Cooking Qualities of Some Iraqi Legumes in Relation to Physico-Chemical Characteristics of Starch, 1979.
4. Isolation and Characterization of Amylase from *Saccharomyces cerevisiae*, 1980.
5. Isolation and characterization of Gluco-Amylase from *Aspergillus niger* 1981.
6. Isolation and Characterization of Trypsin Inhibitor from *Vicia faba*. 1982.
7. Isolation of Two Heat Resistant Proteases from *Pseudomonas fluorescense*. 1983.
8. Isolation of Glucose Isomerase from *Streptomyces sp.* 1985.
9. Studies on Reduced Activity of Bakers Yeast upon Storage. 1985.
10. Isolation and Characterization of Iraqi Sheep Milk Lipase. 1987.
11. Effect of Heat Treatment on Some Physico-chemical of Sheep Milk as Compared to Cow's Milk. 1987.
12. Isolation and Characterization of Pepsin from Fourth Stomach of Iraqi Sheep. 1987.
13. Citric Acid Production from *Aspergillus niger* and its Mutants in Sucrose and Dibis Media. 1988.
14. Structure and Characterization of Local Wheat Starch, 1988.
15. Using *Calotropis procera* protease in Tenderization of Aged Ewes Meat. 2002.

### Ph. D. Students

1. Isolation, Characterization and Immobilization of P-Glycosidase from *Streptomyces thermophilus*. 1992.
2. Citric Acid Production from Date Palm By-Products through Solid State Fermentation using *Aspergillus niger* and its Mutants. 1994.
3. Single Cell Protein Production from Spent Grain using *T. reesie*. 1994.
4. Production of Low-Fat Butter and Partial Substitution with Vegetable Oils. 1997.



5. Isolation, Purification, and Characterization of Lysozyme from *Calotropis procera* Latex. 2003.
6. Effect of *Calotropis procera* Proteases on Muscle Proteins of Aged Cows. 2003.

### **Academy of Science Membership**

Editing terminology in the following disciplines 1. Physics and Astronomy 1999.

2. Organic Chemistry 1999.
3. Animal Production 1999.
4. Poultry 1999.
5. Forecasting 1999.
6. Dairy 1999.
7. Biochemistry 2000.
8. Construction Engineering 2000.
9. Cell Biology 2001.
10. Heredity 2001.
11. Geology 2002.
12. Statistics 2002.

### **Other Professional Activities:**

1. Chairman of the organizing committees for the Annual Scientific Agricultural Research Conferences from 1999-2003.
2. Chairman. National Committee of Pesticides Registration and Release, 1999-2003.
3. Chairman, committee for editing and publishing Agricultural Encyclopedia, 1999-2003.
4. National Team Supervisor for planning annual coordination meetings between Iraq And the International Center for Agricultural Research in the Dry Area (ICARDA). 1997-2002.
5. Vice Editor-in-Chief, Iraqi J. of Agriculture, 1996-2003.
6. Editor-in-Chief, Mesopotamia J. of Agric. 1986-1990.

### **Conferences and Meetings:**

1. Federation of International Universities. Moscow, 1975.
2. Mosul University Delegation to Clair Mont Feran University, France, 1975.
3. Mosul University Delegation to Punjab Agricultural University, India, 1975.
4. Mosul University Delegation to Uppsala University, Sweden, 1977.
5. International Symposium on Food Technology, Malaysia, 1980.
6. International Dairy Conference. Moscow, 1982.
7. International Conference on Milk Proteins. Luxemburg, 1984.

**Membership and Affiliation:**

Institute of Food Technologists, the Society for Science and Technology.