

## Consultation Experience

Working on a beer that can be consumed by people that are allergic to wheat, barley, etc.

Consulting for a winery. The work involves keeping the fermentation on track, keeping microbials in check, and formulating the final blends. The wine is selling well!

Analysed and wrote reports as the specialist outside consultant in response to consumer complaints and problems for a bakery in Johannesburg.

Formulated an anti-cariogenic beverage for toddlers. My client patented this product.

Designed and commissioned a small vegetable freezing plant. The company do contract batch freezing for the catering industry.

Formulated a recipe for a shelf-stable frozen soft-serve yoghurt mix. Performed all the consumer acceptance tests to select the most acceptable formulation.

Developed a recipe, did the scale-up and managed the industrial trials for high grade "best in the world" yoghurt "ice-cream". The company did very well with this product and they extended the line to multiple flavors.

Developed and presented 60-hour training programs to train poorly qualified production personnel in quality control and sanitation.

Commissioned the Food Technology Processing Centre at Technikon Witwatersrand. The retort, the exhaust box and the bottom outlet jam-pot were built from my designs. All the control instrumentation was designed to my specifications. The lines included an all-purpose canning line, processed meat line, milk pasteurizer and cheese bath, beer brewing and bottling line, baking facility including mixers, molders and deck ovens, a spray drier, a short screw extruder, and a section for product development. I had to get donations from industry for most of the equipment and for all the alterations to change the abandoned student union into a processing facility.

Upgraded a biscuit factory in Mozambique where the technology stagnated since the revolution in 1977. All the recipes for the stamped, rotary moulded and wire-cut biscuits were reformulated. The processing line was upgraded and a quality control programme was started. Calibrated and balanced the oven to equalize browning across the rows. The staff was taught how and when to sample raw materials and finished products. Calibrated an infrared analyser, an alveograph and other laboratory equipment. Trained the staff to operate and maintain the equipment. The staff was also taught how to setup, maintain and use SPC. Established a quality control program for the factory including the tests that need to be done.

Developed a cheap flavored pearled sorghum product to enhance the variety of food available to destitute people that are fed by charity organizations. (The cost of the product to feed a person with two generous meals per day for one month is \$10).

Developed a range of vegetarian pate's that was acceptable to vegetarians and the kosher market.

Developed a recipe for and designed a continuous processing line for the production of pre-fried bread lumps (vetkoek) that could be heated in a microwave. This product was sold to the chamber of mines as part of the weekly staple for mine workers.

Developed a recipe for a cheap, high-energy value corn flour confection as a lunch additive for laborers.

Patented a recipe for instant custard (Patent no SA93-6223)

Took out a preliminary patent for a low energy value (87kJ per serving) ergonomic chocolate beverage.

Developed a recipe for and designed a continuous processing line for the production of traditional 'steam baked' sorghum-wheat bread.

## Professional Experience

1996 to present Program Director at the University of Minnesota Crookston where I am responsible for program and curriculum development for the B of Manufacturing Management. I manage the delivery of the program on the Crookston campus, and also at various off-campus sites including industrial sites. I appoint and supervise up to 20 adjunct instructors each year. My other responsibilities include budgeting, recruiting, advising, advertisements, and marketing of the program. I teach Quality Standards, Applied Engineering Principles, Products Development Management, Cereal Processing, and Electronic Spreadsheets. In 2001 I published a book **Food Plant Engineering Systems**. TC Robberts. CRC Press ISBN 1-56676-969-8. It is used as a textbook for food engineering at some universities.

1989 – 1994 Associate Director in the School of Biotechnology where I managed the program budgets and nine teaching and technical staff members for Food Technology, and Biotechnology. My teaching load was reduced to allow for administration. In 1993 I was awarded a merit bonus for work excellence. My teaching responsibilities included Food Technology, Food Biochemistry, and Bioengineering pre-grad, and Food Production Management, Food Biochemistry, Analytical Biochemistry, and Food Engineering post-grad. Industrial outreach and partnering was included in the job description. I was allowed 20 % release to do consultation.

1980 – 1988 Lecture at Cape Technikon, with teaching responsibilities for Food Technology, Food Biochemistry, Food Production Management, Food Biochemistry, Analytical Biochemistry, and Food Engineering.

1978 – 1980: Lecture at Pretoria College for Advanced Technical Education, with teaching responsibilities included Food Technology, Physiological Chemistry, Biochemistry and Meat Technology.

1970 – 1978: Worked for the Sorghum Beer Research Unit of the National Chemical Research Institute of the Council of Scientific and Industrial Research. The work included various analyses and enzymatic studies aimed at upgrading the nutritional value of sorghum beer. For analysis I used gas chromatography, an Auto Analyzer, atomic absorption spectrophotometry, high voltage electrophoresis, column chromatography (ion exchange and exclusion), HPLC and various enzymatic and analytical chemical methods.

## Education

1998: - 2001 Warnborough University: The subject of my dissertation was '*Predictive modelling of the molecular weight distribution of the wheat storage proteins on the breadmaking properties of wheat flour*'.

1988 - 1991: Cape Technikon: Master's Diploma in Technology (Food Technology) The subject of my Master's Diploma Dissertation was '*The influence of lipid changes in bran and offal on the baking properties of wheat flour*'.

1983 - 1984: Cape Technikon: National Higher Diploma in Food Technology.

1980 - 1981: Cape Technikon: National Higher Diploma in Post School Education.

1974 - 1976: Pretoria College for Advanced Technical Education: National Diploma in Food Technology.

1969: Damelin Management Institute: Computer-programming in COBOL.

## Patents and Publications

1999 Presented a keynote paper at the 1999 Fifteenth Biennial International Congress of the South African Association of Food Science and Technology in Cape Town titled: "The Use of Technology Enhanced Distance Education Modules to Support Anytime-Anywhere Learning" by TC Robberts

1997 Poster presented at the 1997 IFT Annual Meeting titled: "Interactive Learning and Assessment Modules to Enhance Classroom and Electronically Delivered Courses" by TC Robberts and JM Sims.

1996 Presented a paper at the Red River Trade Corridor Conference in Winnipeg titled: "ISO 9000 The Apex of Quality?" by TC Robberts.

1995 Presented a poster at the 1995 IFT Annual Meeting titled: "Developing entrepreneurship during the training of food technologists" by TC Robberts

1995 Presented a paper at a seminar of the Institute of Packaging (SA) titled: "A review of the filling and sterilization of metal containers: Methods and pitfalls" by TC Robberts

1978: Opening address at the International Cereal and Bread Congress in Winnipeg, Canada, with the title 'The biochemistry of germinating sorghum' by L. Novellie, KC Butler and TC Robberts.

1978: Journal of Agriculture and Food Chemistry Vol. 28 as 'Separation of phenolics of *Sorghum bicolor* (Linn.) moench grain' by WZ Kaluza, RM McGrath, TC Robberts and HH Schröder.

1977: Poster at the Biochemical Society With the title of 'The mode of protein breakdown in the gramineae' by L. Novellie, KC Butler and TC Robberts.

1976: Analytical Biochemistry Vol 70, 1976, 'Automated determination of proteolytic enzymes and of amino nitrogen by use of trinitrobenzenesulfonic acid' by CA Adams, TC Robberts and KC Butler.

## General

Professional member of the Institute of Food Technologists

Professional member of the American Association of Cereal Chemists

Speak, read and write English and Afrikaans

Read and converse in Dutch, Flemish and Friesian

Read German with limited conversation skills

I am a naturalized American citizen.