

6. REFERENCES

- AHMAD, F. B., WILLIAMS, P. A., DOUBLIER, J. L., DURAND, S. AND BULÉON, A. 1999. Physico-chemical characterisation of sago starch. *Carbohydrate Polymers*. **38**: 361-370
- ALONSO, A. G., ESCRIG, A. J., CARRÓN, N. M., BRAVO, L. AND CALIXTO, F. S. 1999. Assessment of some parameters involved in the gelatinisation and retrogradation of starch. *Food Chemistry*. **66**: 181-187
- ALMGARD, G. 1963. High content of iron in teff. *Eragrostis abyssinica* Link. and some other crop species from Ethiopia—a result of contamination. *Lantbrukshogskolans Annaler*. **29**: 215-220
- AMERICAN ASSOCIATION OF CEREAL CHEMISTS. 1983. Approved Methods of the American Association of Cereal Chemists, 8th ed., American Association of Cereal Chemists, St. Paul, MN
- ANDERSON, R. A., CONWAY, H. F., PFEIFER, V. F. AND GRIFFIN, E. L. JR. 1969. Gelatinisation of corn grits by roll and extrusion cooking. *Cereal Science Today*. **14**: 4-7
- AREDA, A. 1990. Studies on the nutrient composition of tef [*Eragrostis tef* (Zucc. Trotter)] and the interactive influence of environment and genotype. Ph.D.Thesis, University of London, London, U.K.
- AREDA, A. 1995. Protein contents of twelve tef genotypes. *SINET: An Ethiopian Journal of Science*. **18**: 221-233
- AREDA, A., KETEMA, S., INGRAM, J. AND DAVIS, R. H. D. 1993. The iron content of tef [*Eragrostis tef* (Zucc.) Trotter]. *SINET: An Ethiopian Journal of Science*. **16**: 5-13

ASSEFA, M. 1978. Floral morphogenesis, temperature effect on growth, development and variation in nutritional composition and distribution among cultivars in *Eragrostis tef* (Zucc.) Trotter. Ph.D Thesis, University of Wisconsin–Madison, Wisconsin

ATWELL, W. A., HOOD, L. F., LINEBACK, D. R., VARRIANO–MARSTON, E. AND ZOBEL, H. F. 1988. The terminology and methodology associated with basic starch phenomena. *Cereal Foods World*. **33**: 306–311

AZUDIN, M. N. AND MORRISON, W. R. 1986. Non–starch lipids and starch lipids in milled rice. *Journal of Cereal Science*. **4**: 23–31

BAKER, A. A., MILES, M. J. AND HELBERT, W. 2001. Internal structure of the starch granule revealed by AFM. *Carbohydrate Research*. **330**: 249–256

BALDWIN, P. M. 2001. Starch granule–associated proteins and polypeptides: a review. *Starch/Stärke*. **53**: 475–503

BALDWIN, P. M., MELIA, C. D. AND DAVIES, M. C. 1997. The surface chemistry of starch granules studied by time–of–flight secondary ion mass spectrometry. *Journal of Cereal Science*: **26**: 329–346

BALDWIN, P. M., ADLER, J., DAVIES, M. C. AND MELIA, C. D. 1994. Holes in starch granules: Confocal, SEM and light microscopy studies of starch granule structure. *Starch/Stärke*. **46**: 341–346

BALDWIN, P. M., ADLER, J., DAVIES, M. C. AND MELIA, C. D. 1998. High resolution imaging of starch granule surfaces by atomic force microscopy. *Journal of Cereal Science*. **27**: 255 – 265

BANKS, W., GREENWOOD, C. T. AND MUIR, D. D. 1971. The characterisation of starch and its components. Part 3. The technique of semi–micro, differential, potentiometric iodine titration and the factors affecting it. *Starch/Stärke*. **23**: 118–124

- BATEY, I. L. AND CURTIN, B. M. 2000.** Effects on pasting viscosity of starch and flour from different operating conditions for the Rapid Visco-Analyser. *Cereal Chemistry*. **77**: 754-760
- BEKELE, E. AND LESTER, R. N. 1981.** Biochemical assessment of the relationships of *Eragrostis tef* (Zucc.) Trotter with some wild *Eragrostis* species (Gramineae). *Annals of Botany*. **48**: 717-725
- BEKELE, E. 1995.** Essential and non-essential amino acids in a free state and in the major protein fractions of teff seeds. *SINET: An Ethiopian Journal of Science*. **18**: 79-99
- BERHE, T. 1975.** A breakthrough in tef breeding technique. FAO Information Bulletin. Cereal Improvement and Production. Near East Project Xii, FAO, Rome, **3**: 11-13
- BESRAT, A. ADMASU, A. AND OGBAI, M. 1980.** Critical study of the iron content of tef (*Eragrostis tef*). *Ethiopian Medical Journal*. **18**: 45-52
- BETA, T., CORKE, H., ROONEY, L. W. AND TAYLOR, J. R. N. 2000.** Starch properties as affected by sorghum grain chemistry. *Journal of the Science of Food and Agriculture*. **81**: 245-251
- BIACS, P., AUBRECHT, E., LÉDER, I. AND LAJOS, J. 2002.** Buckwheat. In: BELTON, P. S. AND TAYLOR, J. R. N. (Eds.). Pseudocereals and less common cereals: grain properties and utilization. Springer, Berlin, p 134
- BILIADERIS, C. G. 1983.** Differential scanning calorimetry in food research—a review. *Food Chemistry*. **10**: 239-265
- BILIADERIS C. G. AND GALLOWAY, G. 1989.** Crystallisation behaviour of amylose-V complexes: structure-property relationships. *Carbohydrate Research*. **189**: 31-48

BILIADERIS, C. G., PAGE, C. M., MAURICE, T. J. AND JULIANO, B. O. 1986. Thermal characterisation of rice starches: A polymeric approach to phase transition of granular starch. *Journal of Agricultural and Food Chemistry*. **34**: 6-14

BLENNOW, A., BAY-SMIDT, A. M. AND BAUER. R. 2001. Amylopectin aggregation as a function of starch phosphate content studied by size exclusion chromatography and on-line refractive index and light scattering. *International Journal of Biological Macromolecules*. **28**: 409-420

BLENNOW, A., ENGELSEN, S. B., MUNCK, L. AND MØLLER, B. L. 2000. Starch molecular structure and phosphorylation investigated by a combined chromatographic and chemometric approach. *Carbohydrate Polymers*. **41**: 163-174

BLENNOW, A., BAY-SMIDT, A. M., WISCHMANN, B., OLSEN, C. E. AND MØLLER, B. L. 1998. The degree of starch phosphorylation is related to the chain length distribution of the neutral and the phosphorylated chains of amylopectin. *Carbohydrate Research*. **307**: 45-54

BUCK SCIENTIFIC. 1982. Buck scientific, incorporated atomic absorption cookbook. Buck Scientific, 58 Fort Point St., East Norwalk, Connecticut

BULÉON, A., COLONNA, P., PLANCHOT, V. AND BALL, S. 1998. Starch granules: structure and biosynthesis. *International Journal of Biological Macromolecules*. **23**: 85-112

CENTRAL STATISTICAL AUTHORITY (CSA). 1997. Agricultural sample survey. 1996/97. Volume I. Report on the area and production for major crops. Private peasant holdings. *Statistical Bulletin*. 171. Addis Ababa, Ethiopia

CHAMPAGNE, E. T. 1996. Rice starch composition and characteristics. *Cereal Foods World*. **41**: 833-838

- CHEETHAM, N. W. H. AND TAO, L. 1997.** The effects of amylose content on the molecular size of amylose, and on the distribution of amylopectin chain length in maize starches. *Carbohydrate Polymers*. **33**: 251-261
- CHEETHAM, N. W. H. AND TAO, L. 1998.** Variation in crystalline type with amylose content in maize starch granules: an X-ray powder diffraction study. *Carbohydrate Polymers*. **36**: 277-284
- CHEN, Y., FRINGANT, C. AND RINAUDO, M. 1997.** Molecular characterisation of starch by SEC: dependence of the performances on the amylopectin content. *Carbohydrate Polymers*. **33**: 73-78
- CHRASIL, J. 1987.** Improved colorimetric determination of amylose in starches or flours. *Carbohydrate Research*. **159**: 154-158
- COLONNA, P., BULÉON, A. AND MERCIER, C. 1987.** Physically modified starches. In: GALLIARD, T. (Ed.). Starch: properties and potential. Critical Reports on Applied Chemistry. V. 13. John Wiley and Sons, New York, pp 79-114
- CORBISHLEY, D. A. AND MILLER, W. 1984.** Tapioca, arrowroot, and sago starches: production. In: WHISTLER, R. L., BEMILLER, J. N. AND PASCHALL, E. F. (Eds.). Starch: chemistry and technology. 2nd ed., Academic Press, Orlando, Florida, pp 469-478
- CORNELL, H. J., MCGRANE, S. J. AND RIX, C. J. 1999.** A novel and rapid method for the partial fractionation of starch using 1-butanol in the presence of thiocyanate. *Starch/Stärke*. **51**: 335-341
- COSTANZA, S. H., DEWET, J. M. J. AND HARLAN, J. R. 1979.** Literature review and numerical taxonomy of *Eragrostis tef* (T'ef). *Economic Botany*. **33**: 413-424
- CRAIG, S. A. S., MANINGAT, C. C., SEIB, P. A. AND HOSENEY, R. C. 1989.**

Starch paste clarity. *Cereal Chemistry*. **66**: 173-182

CURÁ, J. A., JANSSON, P. AND KRISMAN, C. R. 1995. Amylose is not strictly linear. *Starch/Stärke*. **47**: 207-209

CZUCHAJOWSKA, Z., KLAMCZYNSKI, A., PASZCZYNSKA, B. AND BAIK, B. K. 1998. Structure and functionality of barley starches. *Cereal Chemistry*. **75**: 747-754

DAVIS, E. A. 1994. Wheat starch. *Cereal Foods World*. **39**: 34-36

DENYER, K., WAITE, D., MOTAWIA, S., MØLLER, B. L. AND SMITH, A. M. 1999. Granule-bound starch synthase I in isolated starch granules elongates malto-oligosaccharides processively. *Journal of Biochemistry*. **340**: 183-191

DEFFENBAUGH, L. B. AND WALKER, C. E. 1989. Comparison of starch pasting properties in the Brabender Viscoamylograph and the Rapid Visco-Analyser. *Cereal Chemistry*. **66**: 493-499

DONALD, A. M., PERRY, P. A. AND WAIGH, T. A. 2001. The impact of internal granule structure on processing and properties. In: BARSBY, T. L., DONALD, A. M. AND FRAZIER, P. J. (Eds.). Starch advances in structure and function. The Royal Society of Chemistry, Cambridge, U.K., pp 45-52

DONOVAN, J. W. 1979. Phase transitions of starch-water system. *Biopolymers*. **18**: 263-275

DUARTE, P. R., ROBINSON, S. F. AND FREEMAN, T. P. 1995. *In situ* location of a starch granule protein in durum wheat endosperm by immunocytochemistry. *Cereal Chemistry*. **72**: 269-274

DUBOIS, M., GILLES, K. A., HAMILTON, J. K., REBERS, P. A. AND SMITH, F. 1956. Colorimetric method for determination of sugars and related

substances. *Analytical Chemistry*. **28**: 350-356

EBBA, T. 1969. Tef (*Eragrostis tef*): the cultivation, usage and some of the known diseases and insect pests. Part I. Debre Zeit Agricultural Experiment Station. Addis Ababa University, College of Agriculture: Dire Dawa, Ethiopia

EBBA, T. 1975. Tef (*Eragrostis tef*) cultivars: morphology and classification. *Experimental Station Bulletin*. No. 66. Addis Ababa University, College of Agriculture: Dire Dawa, Ethiopia

ELIASSON, A. 1994. Interactions between starch and lipids studied by DSC. *Thermochemica Acta*. **246**: 343-356

ERDMAN, M. D. 1986. Starch from arrowroot (*Maranta arundinacea*) grown at Tifton, Georgia. *Cereal Chemistry*. **63**: 276-279

FANNON, J. E., HAUBER, R. J. AND BEMILLER, J. N. 1992. Surface pores of starch granules. *Cereal Chemistry*. **69**: 284-288

FANNON, J. E., SHULL, J. M. AND BEMILLER, J. N. 1993. Interior channels of starch granules. *Cereal Chemistry*. **70**: 611-613

FOOD AND AGRICULTURAL ORGANISATION (FAO). 1986. Manuals of food quality control: food analysis general techniques, additives, contaminants and composition. FAO Food and Nutrition Paper. 14/7. Rome, pp 216-217

FOLCH, J., LEES, M. AND STANLEY, G. H. S. 1957. A simple method for the isolation and purification of total lipids from animal tissues. *Journal of Biological Chemistry*. **226**: 497-509

FORTUNA, T., JANUSZEWSKA, R., JUSZCZAK, I., KIELSKI, A. AND PALASINSKI, M. 2000. The influence of starch pore characteristics on pasting behaviour. *International Journal of Food Science and Technology*. **35**: 285-291

- FRANCO, C. M. L., PRETO, S. J. R. AND CIACCO, C. F. 1992.** Factors that affect the enzymatic degradation of natural starch granules—effect of the size of the granules. *Starch/Stärke*. **44**: 422-426
- FREDRIKSSON, H., SILVERIO, J., ANDERSSON, R., ELIASSON, A. C. AND AMAN, P. 1998.** The influence of amylose and amylopectin characteristics on gelatinisation and retrogradation properties of different starches. *Carbohydrate Polymers*. **35**: 119-134
- FRENCH, D. 1984.** Organization of starch granules. In: WHISTLER, R. L., BEMILLER, J. N. AND PASCHALL, E. F. (Eds.). *Starch: chemistry and technology*. 2nd ed., Academic Press, Orlando, Florida, pp 183-247
- GALLANT, D. J., BOUCHET, B. AND BALDWIN, P. M. 1997.** Microscopy of starch: evidence of a new level of granule organisation. *Carbohydrate Polymers*. **32**: 117-191
- GALLIARD, T. AND BOWLER, P. 1987.** Morphology and composition of starch. In: GALLIARD, T. (Ed.) *Starch: properties and potential*. Critical Reports on Applied Chemistry, Volume 13, John Wiley and Sons, New York, pp 55-78
- GASHE, B. A. 1985.** Involvement of lactic acid bacteria in the fermentation of tef (*Eragrostis tef*), an Ethiopian fermented food. *Journal of Food Science*. **50**: 800-801
- GASHE, B. A., GIRMA, M. AND BESRAT, A. 1982.** Tef fermentation. I. The role of microorganisms in fermentation and their effect on the nitrogen content of tef. *SINET: An Ethiopian Journal of Science*. **5**: 69-76
- GEBRE-MARIAM, T. AND SCHMIDT, P. C. 1998.** Some physico-chemical properties of dioscorea starch from Ethiopia. *Starch/Stärke*. **50**: 241-246
- GÉRARD, C., BARRON, C., COLONNA, P. AND PLANCHOT, V. 2001.**

Amylose determination in genetically modified starches. *Carbohydrate Polymers*. **44**: 19-27

GÉRARD, C., COLONNA, P., BULÉON, A. AND PLANCHOT, V. 2001.

Amylolysis of maize mutant starches. *Journal of the Science of Food and Agriculture*. **81**: 1281-1287

GIBSON, T. S., SOLAH, V. A. AND MCCLEARY, B. V. 1997. A procedure to measure amylose in cereal starches and flours with concanavalin A. *Journal of Cereal Science*. **25**: 111-119

GIDLEY, M. J. 2001. Starch structure/function relationships: achievements and challenges. In: BARSBY, T. L., DONALD, A. M. AND FRAZIER, P. J. (Eds.). Starch advances in structure and function. The Royal Society of Chemistry, Cambridge, U.K., pp 1-7

GIFAWESEN, C. AND BESRAT, A. 1982. Yeast flora of fermenting tef (*Eragrostis tef*) dough. *SINET: An Ethiopian Journal of Science*. **5**: 21-25

GRANT, L. A. 1998. Effect of starch isolation, drying, and grinding techniques on its gelatinisation and retrogradation properties. *Cereal Chemistry*. **75**: 590-594

GUDMUNDSSON, M. 1994. Retrogradation of starch and the role of its components. *Thermochimica Acta*. **246**: 329-341

HAMAKER, B. R. AND GRIFFIN, V. K. 1990. Changing the viscoelastic properties of cooked rice through protein disruption. *Cereal Chemistry*. **67**: 261-264

HAN, X. Z., CAMPANELLA, O. H., GUAN, H., KEELING P. L. AND HAMAKER, B. R. 2002 a. Influence of maize starch granule-associated protein on the rheological properties of starch pastes. Part I. Large deformation measurements of paste properties. *Carbohydrate Polymers*. **49**: 315-321

- HAN, X. Z., CAMPANELLA, O. H., GUAN, H., KEELING, P. L. AND HAMAKER, B. R. 2002 b. Influence of maize starch granule-associated protein on the rheological properties of starch pastes. Part II. Dynamic measurements of viscoelastic properties of starch pastes. *Carbohydrate Polymers*. **49**: 323-330
- HARTLEY, L. CHEVANCE, F., HILL, S. E., MITCHELL, J. R. AND BLANSHARD, J. M. V. 1995. Partitioning of water in binary biopolymer mixtures at low water content. *Carbohydrate Polymers*. **28**: 83-89
- HERMANSSON, A. M. AND SVEGMARK, K. 1996. Developments in the understanding of starch functionality. *Trends in Food Science and Technology*. **7**: 345-353
- HIZUKURI, S. 1985. Relationship between the distribution of the chain length of amylopectin and the crystalline structure of starch granules. *Carbohydrate Research*. **141**: 295-306
- HIZUKURI, S. 1986. Polymodal distribution of the chain lengths of amylopectins, and its significance. *Carbohydrate Research*. **147**: 342-347
- HIZUKURI, S., TAKEDA, Y., MARUTA, N. AND JULIANO, B. O. 1989. Molecular structures of rice starch. *Carbohydrate Research*. **189**: 227-235
- HIZUKURI, S., TAKEDA, Y., ABE, J., HANASHIRO, I., MATSUNOBU, G. AND KIYOTA, H. 1997. Analytical developments: molecular and microstructural characterisation. In: FRAZIER, P. J., DONALD, A. M. AND RICHMOND, P. (Eds.). Starch structure and functionality. The Royal Society of Chemistry, Cambridge, U.K., pp 121-127
- HOOVER, R. 2001. Composition, molecular structure, and physical properties of tuber and root starches: a review. *Carbohydrate Polymers*. **45**: 253-267
- HOOVER, R. AND RATNAYAKE, W. S. 2002. Starch characteristics of black

- bean, chickpea, lentil, navy bean and pinto bean cultivars grown in Canada. *Food Chemistry*. **78**: 489-498
- HOOVER, R. AND SENANAYAKE, S. P. J. N. 1996.** Composition and physico-chemical properties of oat starches. *Food Research International*. **29**: 15-26
- HOOVER, R., SAILAJA, Y. AND SOSULSKI, F. W. 1996 a.** Characterisation of starches from wild and long grain brown rice. *Food Research International*. **29**: 99-107
- HOOVER, R., SWAMIDAS, G., KOK, L. S. AND VASANTHAN, T. 1996 b.** Composition and physico-chemical properties of starch from pearl millet grains. *Food Chemistry*. **56**: 355-367
- HOSENEY, R. C. 1994.** Principles of cereal science and technology. 2nd. ed., American Association of Cereal Chemists. St. Paul, USA, pp 29-63
- HUBER, K. C. AND BEMILLER, J. N. 2000.** Channels of maize and sorghum starch granules. *Carbohydrate Polymers*. **41**: 269-276
- HUNDERA, F. 1998.** Variations of morpho-agronomic characters and grain chemical composition of released varieties of tef [*Eragrostis tef* (Zucc.) Trotter]. *Journal of Genetics and Breeding*. **52**: 307-311
- HUNDERA, F., BECHERE, E. AND TEFERA, H. 1999.** Interrelationships of grain yield, lodging and agronomic traits in tef, *Eragrostis tef*. *Tropical Science*. **39**: 63-69
- HUNDERA, F., TEFERA, H., ASSEFA, K., TEFERA, T., KEFYALEW, T. AND GIRMA, T. 2000.** Grain yield stability analysis in late maturing genotypes of tef [*Eragrostis tef* (Zucc.) Trotter]. *Journal of Genetics and Breeding*. **54**: 13-18
- IMBERTY, A., BULÉON, A., TRAN, V. AND PÁREZ, S. 1991.** Recent advances in knowledge of starch structure. *Starch/Stärke*. **43**: 375 – 384

- JACOBSON, M. R., OBANNI, M. AND BEMILLER, J. N. 1997:** Retrogradation of starches from different botanical sources. *Cereal Chemistry*. **74**: 511–518
- JANE, J. L. 1997.** Starch functionality in food processing. In: FRAZIER, P. J., DONALD, A. M. AND RICHMOND, P. (Eds.). Starch structure and functionality. The Royal Society of Chemistry, Cambridge, U.K., pp 26–35
- JAMES, C. S. 1996.** Analytical chemistry of foods. Blackie Academic and Professional, Chapman and Hall, 1st ed., London, U.K.
- JANE, J. I., KASEMSUWAN, T., LEAS, S., ZOBEL, H. AND ROBYT, J. F. 1994.** Anthology of starch granule morphology by scanning electron microscopy. *Starch/Stärke*. **46**: 121–129
- JANSEN G. R., DIMAIO, L. R. AND HAUSE, N. L. 1962.** Amino acid composition and lysine supplementation of tef. *Journal of Agricultural and Food Chemistry*. **10**: 62–64
- JAYAKODY, L. AND HOOVER, R. 2002.** The effect of lintnerisation on cereal starch granules. *Food Research International*. **35**: 665–680
- JENKINS, P. J. AND DONALD, A. M. 1995.** The influence of amylose on starch granule structure. *International Journal of Biological Macromolecules*. **17**: 315–321
- JENKINS, P. J. AND DONALD, A. M. 1997.** The effect of acid hydrolysis on native starch granule structure. *Starch/Stärke*. **49**: 262–267
- JENKINS, P. J., CAMERON, R. E. AND DONALD, A. M. 1993.** A universal features in the structure of starch granules from different botanical sources. *Starch/Stärke*. **45**: 417–420
- JULIANO, B. O. 1971.** A simplified assay for milled rice amylose. *Cereal Science*

Today. **16**: 334–340

JULIANO, B. O. 1984. Rice starch: production, properties and uses. In: WHISTLER, R. L., BEMILLER, J. N. AND PASCHALL, E. F. (Eds.). Starch: chemistry and technology. 2nd ed., Academic Press, Orlando, Florida, pp 507–528

KARIM, A. A., NORZIAH, M. H. AND SEOW, C. C. 2000. Methods for the study of starch retrogradation. *Food Chemistry*. **71**: 9–36

KASEMSUWAN, T. AND JANE, J. 1994. Location of amylose in normal starch granules. II. Locations of phosphodiester cross-linking revealed by phosphorus-31 nuclear magnetic resonance. *Cereal Chemistry*. **71**: 282 – 287

KASEMSUWAN, T. AND JANE, J. 1996. Quantitative methods for the survey of starch phosphate derivatives and starch phospholipids by ³¹P nuclear magnetic resonance spectroscopy. *Cereal Chemistry*. **73**: 702– 707

KEELING, P. L. 1997. Plant biotechnology: technical barriers to starch improvement. In: FRAZIER, P. J., DONALD, A. M. AND RICHMOND, P. (Eds.). Starch structure and functionality. The Royal Society of Chemistry, Cambridge, U.K, pp 180– 187

KENNEDY, H. M. AND FISCHER, A. C. 1984. Starch and dextrans in prepared adhesives. In: WHISTLER, R. L., BEMILLER, J. N. AND PASCHALL, E. F. (Eds.). Starch: chemistry and technology. 2nd ed., Academic Press, Orlando, Florida, pp 593– 610

KENNEDY, J. F., CABRAL, J. M. S., SÁ-CORREIA, I. AND WHITE, C. A. 1987. Starch biomass: a chemical feedstock for enzyme and fermentation processes. In: GALLIARD, T. (Ed.). Starch: properties and potential. Critical Reports on Applied Chemistry. V. 13. John Wiley and Sons, New York, pp 115–148

KENT, N. L. AND EVERS, A. D. 1994. Technology of cereals. 4th ed., Elsevier

Science, Oxford, U.K., pp 129–169 and 259–268

KETEMA, S. 1993. Tef (*Eragrostis tef*): breeding, genetic resources, agronomy, utilisation and role in Ethiopian agriculture, Institute of Agricultural Research, Addis Ababa, Ethiopia

KETEMA, S. 1997. Tef. *Eragrostis tef* (Zucc.) Trotter. Promoting the conservation and use of under utilised and neglected crops. 12. Institute of Plant Genetics and Crop Plant Research, Gatersleben/International Plant Genetic Resources Institute, Rome

KOBAYASHI, S., SCHWARTZ, S. J. AND LINEBACK, D. R. 1985. Rapid analysis of amylose and amylopectin by high-performance size exclusion chromatography. *Journal of Chromatography*. **319**: 205-214

KOMIYA, T. AND NARA, S. 1986. Changes in crystallinity and gelatinisation phenomena of potato starch by acid treatment. *Starch/Stärke*. **38**: 9-13

KNUTSON, C. A. 1986. A simplified colorimetric procedure for determination of amylose in maize starches. *Cereal Chemistry*. **63**: 89-92

KNUTSON, C. A. AND GROVE, M. J. 1994. Rapid method for estimation of amylose in maize starches. *Cereal Chemistry*. **71**: 469-471

KNUTSON, C. A., KHOO, U., CLUSKEY, J. E. AND INGLETT, G. E. 1982. Variation in enzyme digestibility and gelatinisation behaviour of corn starch granule fractions. *Cereal Chemistry*. **59**: 512-515

KOZIOL, M. J. 1993. Quinoa: a potential new oil crop. In: JANICK, J. AND SIMON, J. E. (Eds.). *New crops*. John Wiley and Sons, New York, pp 328–336

KROK, F., SZYMONSKA, J., TOMASIK, P. AND SZYMONSKI, M. 2000. Non-contact AFM investigation of influence of freezing process on the surface structure of potato starch granule. *Applied Surface Science*. **157**: 382–386

- KUGIMIYA, M. AND DONOVAN, J. W. 1981.** Colorimetric determination of the amylose content of starches based on formation and melting of the amylose–lysolecithin complex. *Journal of Food Science*. **46**:765–770
- KUHN, K. AND SCHLAUCH, S. 1994.** Comparative study about commercially available starches for high shear and high temperature applications in foods. *Starch/Stärke*. **46**: 208–218
- LARSON, B. L., GILLES, K. A. AND JENNESS, R. 1953.** Amperometric method for determining the sorption of iodine by starch. *Analytical Chemistry*. **25**: 802–804
- LEALEM, F. AND GASHE, B. A. 1994.** Amylase production by a gram–positive bacterium isolated from fermenting tef (*Eragrostis tef*). *Journal of Applied Bacteriology*. **77**: 348–352
- LESTER, R. N. AND BEKELE, E. 1981.** Amino acid composition of the cereal tef and related species of *Eragrostis* (*Gramineae*). *Cereal Chemistry*. **58**: 113–115
- LELOUP, V. M. COLONNA, P. AND BULÉON, A. 1991.** Influence of amylose–amylopectin ratio on gel properties. *Journal of Cereal Science*. **13**: 1–13
- LILLFORD, P. J. AND MORRISON, A. 1997.** Structure/function relationship of starches in food. In: FRAZIER, P. J., DONALD, A. M. AND RICHMOND, P. (Eds.). Starch structure and functionality. The Royal Society of Chemistry, Cambridge, U.K., pp 1–8
- LII, C., SHAO, Y. AND TSENG, K. 1995.** Gelation mechanism and rheological properties of rice starch. *Cereal Chemistry*. **72**: 393–400
- LI, J. Y. AND YEH, A. I. 2001.** Relationships between thermal, rheological characteristics and swelling power for various starches. *Journal of Food Engineering*. **50**: 141–148

- LIM, S. T., KASEMSUWAN, T. AND JANE, J. L. 1994. Characterisation of phosphorus in starch by ^{31}P -nuclear magnetic resonance spectroscopy. *Cereal Chemistry*. **71**: 488–493
- LIN, P. Y. AND CZUCHAJOWSKA, Z. 1998. Role of phosphorus in viscosity, gelatinisation and retrogradation of starch. *Cereal Chemistry*. **75**: 705–709
- LIU, H., LELIEVRE, J. AND CHEE, W. A. 1991. A study of starch gelatinisation using differential scanning calorimetry, X-ray, and birefringence measurements. *Carbohydrate Research*. **210**: 79–87
- LIUKKONEN, K. AND LAAKSO, S. 1992. Characterisation of internal and surface lipids of oat starches from two isolation processes. *Starch/Stärke*. **44**: 128–132
- LU, T., JANE, J. AND KEELING, P. L. 1997. Temperature effect on retrogradation rate and crystalline structure of amylose. *Carbohydrate Polymers*. **33**: 19–26
- LUMDUBWONG, N. AND SEIB, P. A. 2000. Rice starch isolation by alkaline protease digestion of wet-milled rice flour. *Journal of Cereal Science*. **31**: 63–74
- MAMO, T. AND PARSONS, J. W. 1987. Iron nutrition of *Eragrostis tef* (teff). *Tropical Agriculture (Trinidad)*. **64**: 313–317
- MARTINEZ, C. AND PRODOLLIET, J. 1996. Determination of amylose in cereal and non-cereal starches by a colorimetric assay: collaborative study. *Starch/Stärke*. **48**: 81–85
- MCPHERSON, A. E. AND JANE, J. 1999. Comparison of waxy potato with other root and tuber starches. *Carbohydrate Polymers*. **40**: 57–70
- MEGAZYME INTERNATIONAL. 1996. Megazyme amylose/amylopectin assay kit for the measurement of the amylose and amylopectin contents of starches.

AM/AMP 01/96, Megazyme International Ireland, Bray Business Park, Bray, Ireland

MENGESHA, M. H. 1966. Chemical composition of tef (*Eragrostis tef*) compared with that of wheat, barley and grain sorghum. *Economic Botany*. **20**: 268–273

MENTZER, M. J. 1984. Starch in the paper industry. In: WHISTLER, R. L., BEMILLER, J. N. AND PASCHALL, E. F. (Eds.). Starch: chemistry and technology. 2nd ed., Academic Press, Orlando, Florida, pp 543–574

MISTRY, A. H. AND ECKHOFF, S. R. 1992. Characteristics of alkali-extracted starch obtained from corn flour. *Cereal Chemistry*. **69**: 296–303

MORELL, M. K., LI, Z. AND RAHMAN, S. 2001. Starch biosynthesis in the small grained cereals: wheat and barley. In: BARSBY, T. L., DONALD, A. M. AND FRAZIER, P. J. (Eds.). Starch advances in structure and function. The Royal Society of Chemistry, Cambridge, U.K., pp 129–137

MORRISON, W. R. 1964. A fast, simple and reliable method for the microdetermination of phosphorus in biological materials. *Analytical Biochemistry*. **7**: 218–224

MORRISON, W. R. 1988. Lipids in cereal starches: a review. *Journal of Cereal Science*. **8**: 1–15

MORRISON, W. R. 1995. Starch lipids and how they relate to starch granule structure and functionality. *Cereal Foods World*. **40**: 437–446

MORRISON, W. R. AND AZUDIN, M. N. 1987. Variation in the amylose and lipid contents and some physical properties of rice starches. *Journal of Cereal Science*. **5**: 35–44

MORRISON, W. R. AND COVENTRY, A. M. 1985. Extraction of lipids from cereal starches with hot aqueous alcohols. *Starch/Stärke*. **37**: 83–87

MORRISON, W. R. AND GADAN, H. 1987. The amylose and lipid contents of starch granules in developing wheat endosperm. *Journal of Cereal Science*. **5**: 263–275

MORRISON, W. R. AND LAIGNELET, B. 1983. An improved colorimetric procedure for determining apparent and total amylose in cereal and other starches. *Journal of Cereal Science*. **1**: 9–20

MORRISON, W. R., TAN, S. L. AND HARGIN, K. D. 1980. Methods for the quantitative analysis of lipids in cereal grains and similar tissues. *Journal of the Science of Food and Agriculture*. **31**: 329–340

MORRISON, W. R., MILLIGAN, T. P. AND AZUDIN, M. N. 1984. A relationship between the amylose and lipid contents of starches from diploid cereals. *Journal of Cereal Science*. **2**: 257–271

MYERS, A. M., MORELL, M. K., JAMES, M. G. AND BALL, S. G. 2000. Recent progress toward understanding biosynthesis of the amylopectin crystal. *Plant Physiology*. **122**: 989–998

NATIONAL RESEARCH COUNCIL (NRC) OF THE USA. 1996. Lost Crops of Africa. Volume 1: Grains. National Academy Press, Washington, D.C., pp 215–234

NEWPORT SCIENTIFIC. 1995. Interpretation. In: Operation manual for the series 3 Rapid Visco–Analyser. Newport Scientific Pty. Ltd., Sydney, Australia, pp 25–28

NIELSEN, T. H., WISCHMAN, B., ENEVOLDSEN, K. AND MØLLER, B. L. 1994. Starch phosphorylation in potato tubers proceeds concurrently with *de novo* biosynthesis of starch. *Plant Physiology*. **105**: 111–117

- NODA, T., TAKAHATA, Y., SATO, T., SUDA, I., MORISHITA, T.,
ISHIGURO, K. AND YAMAKAWA, O. 1998. Relationships between chain length
distribution of amylopectin and gelatinisation properties within the same botanical
origin for sweet potato and buckwheat. *Carbohydrate Polymers*. **37**: 153-158
- NORJA, A. K., REINIKAINEN, P., OLKKU, J. AND LAAKSO, S. 1997.
Starch lipids of barley and malt. *Cereal Chemistry*. **74**: 733-738
- OATES, C. G. 1997. Towards an understanding of starch granule structure and
hydrolysis. *Trends in Food Science and Technology*. **8**: 375-382
- OHTANI, T., YOSHINO, T., HAGIWARA, S. AND MAEKAWA, T. 2000. High
resolution imaging of starch granule structure using atomic force microscopy.
Starch/Stärke. **52**: 150-153
- OTEY, F. H. AND DOANE, W. M. 1984. Chemicals from starch. In: WHISTLER,
R. L., BEMILLER, J. N. AND PASCHALL, E. F. (Eds.). *Starch: chemistry and
technology*. 2nd ed., Academic Press, Orlando, Florida, pp 389-416
- PARKER, R. AND RING, S. G. 2001. Aspects of the physical chemistry of starch.
Journal of Cereal Science. **34**: 1-7
- PARKER, M. L., UMETA, M. AND FAULKS, R. M. 1989. The contribution of
flour components to the structure of *Injera*, Ethiopian fermented bread made from tef
(*Eragrostis tef*). *Journal of Cereal Science*. **10**: 93-104
- PIYACHMKWAN, K., CHOTINEERANAT, S., KIJKHUNASATIAN, C.,
TONWITOWAT, R., PRAMMANEE, S., OATES, G. AND SRIROTH, K. 2002.
Edible canna (*Canna edulis*) as a complementary starch source to cassava for the
starch industry. *Industrial Crops and Products*. **16**: 11-21
- PONS, M. AND FISZMAN, S. M. 1996. Instrumental texture profile analysis with
particular reference to gelled systems. *Journal of Texture Studies*. **27**: 597-624

QIAN, J. Y. AND KUHN, M. 1999. Characterisation of *Amaranthus cruentus* and *Chenopodium quinoa* starch. *Starch/Stärke*. **51**: 116–120

QIAN, J., RAYAS-DUARTE, P. AND GRANT, L. 1998. Partial characterisation of buckwheat (*Fagopyrum esculentum*) starch. *Cereal Chemistry*. **75**: 365–373

RAINS, T. C. 1991. Application of atomic absorption spectrometry to the analysis of foods. In: HASWELL, S. J. (Ed.). Atomic absorption spectrometry: Theory, design and applications. 1st ed., Elsevier Science, Amsterdam, The Netherlands, pp. 191–226

RAMACHANDRAN, K. AND BOLODIA, G. 1984. The effect of fermentation on the iron, phosphorus and zinc content of tef (*Eragrostis tef*). *Ethiopian Medical Journal*. **22**: 45–48

RIDOUT, M. J., GUNNING, A. P., PARKER, M. L., WILSON, R. H. AND MORRIS, V. J. 2002. Using AFM to image the internal structure of starch granules. *Carbohydrate Polymers*. **50**: 123–132

ROBIN, J. P., MERCIER, C., CHARBONNIERE, R. AND GUILBOT, A. 1974. Lintnerised starches. Gel filtration and enzymatic studies of insoluble residues from prolonged acid treatment of potato starch. *Cereal Chemistry*. **51**: 389–406

ROUK, H. F. AND MENGESHA, M. H. 1963. An introduction to tef (*Eragrostis abyssinica* Schard). A nutritious cereal grain of Ethiopia. Debre Zeit Agricultural Research Centre. *Research Bulletin*. No. 26. College of Agriculture, Dire Dawa, Ethiopia

SAHAI, D. AND JACKSON, D. S. 1999. Enthalpic transitions in native starch granules. *Cereal Chemistry*. **76**: 444–448

SARIKAYA, E., HIGASA, T., ADACHI, M. AND MIKAMI, B. 2000. Comparison of degradation abilities of α - and β -amylases on raw starch granules.

Process Biochemistry. **35**: 711–715

SASAKI, T. AND MATSUKI, J. 1998. Effect of wheat starch structure on swelling power. *Cereal Chemistry*. **75**: 525–529

SCHIERBAUM, F. AND KETTLITZ, B. 1994. Studies on rye starch properties and modification. Part III: viscograph pasting characteristics of rye starches. *Starch/Stärke*. **46**: 2–8

SCHOCH, T. J. 1968. Effects of freezing and cold storage on pasted starches. In: TRESSLER, D. K., VANARSDEL, W. B. AND COPLEY, M. J. (Eds.). The freezing preservation of foods. Vol. 4, AVI, Westport, CT, pp 44–56

SHIBANUMA, Y., TAKEDA, Y. AND HIZUKURI, S. 1996. Molecular and pasting properties of some wheat starches. *Carbohydrate Polymers*. **29**: 253–261

SIEVERT, D. AND POMERANZ, Y. 1989. Enzyme-resistant starch. I. Characterisation by enzymatic, thermoanalytical and microscopic methods. *Cereal Chemistry*. **66**: 342–347

SIM, S. L., OATES, C. G. AND WONG, H. A. 1991. Studies on sago starch. Part I: characterisation and comparison of sago starches obtained from *Metroxylon sagu* processed at different times. *Starch/Stärke*. **43**: 459–466

SINGH, V. AND ALI, S. Z. 2000. Acid degradation of starch. The effect of acid and starch type. *Carbohydrate Polymers*. **41**: 191–195

SKOOG, D. A., HOLLER, F. J. AND NIEMAN, T. A. 1998. Principles of instrumental analysis. Saunders College Publishing, 5 th ed., Chicago, pp 272–298

SMITH, A. M., DENYER, K. AND MARTIN, C. 1997. The synthesis of the starch granule. *Annual Review of Plant Physiology and Plant Molecular Biology*. **48**: 67–87

- SNYDER, E. M. 1984.** Industrial microscopy of starches. In: WHISTLER, R. L., BEMILLER, J. N. AND PASCHALL, E. F. (Eds.). Starch: chemistry and technology. 2nd ed., Academic Press, Orlando, Florida, pp 661-672
- SOSULSKI, F. W., YOOK, C. AND ARGANOSA, G. C. 1997.** Functional properties of cationic pea starch. In: FRAZIER, P. J., DONALD, A. M. AND RICHMOND, P. (Eds.). Starch structure and functionality. The Royal Society of Chemistry, Cambridge, U.K., pp 36-41
- SOUTH, J. B., MORRISON, W. R. AND NELSON, O. E. 1991.** A relationship between the amylose and lipid contents of starches from various mutants for amylose content in maize. *Journal of Cereal Science*. **14**: 267-278
- SREENATH, H. K. 1992.** Studies on starch granules digestion by α -amylase. *Starch/Stärke*. **44**: 61-63
- SRIROTH, K., SANTISOPASRI, V., PETCHALANUWAT, C., KUROTJANAWONG, K., PIYACHOMKWAN, K. AND OATES, C. G. 1999.** Cassava starch granule structure-function properties: influence of time and conditions at harvest on four cultivars of cassava starch. *Carbohydrate Polymers*. **38**: 161-170
- STEWART, R. B. AND GETACHEW, A. 1962.** Investigations of the nature of *Injera*. *Economic Botany*. **16**: 127-130
- STEWART, R. B. AND YIRGOU, D. 1967.** Index of plant diseases in Ethiopia. *Experimental Station Bulletin*. No. 30. Alemaya University of Agriculture, Dire Dawa, Ethiopia
- SUBRAMANIAN, V. HOSENEY, R. C. AND BRAMEL-COX, P. 1994.** Shear thinning properties of sorghum and corn starches. *Cereal Chemistry*. **71**: 272-275
- SULAIMAN, B. D. AND MORRISON, W. R. 1990.** Proteins associated with the

surface of wheat starch granules purified by centrifuging through cesium chloride.

Journal of Cereal Science. **12**: 53–61

SVENSSON, E. AND ELIASSON, A. C. 1995. Crystalline changes in native wheat and potato starches at intermediate water levels during gelatinisation. *Carbohydrate Polymers*. **26**: 171–176

SWINKELS, J. J. M. 1985. Composition and properties of commercial native starches. *Starch/Stärke*. **37**: 1–5

TAKAHASHI, S. AND SEIB, P. A. 1988. Paste and gel properties of prime corn and wheat starches with and without native lipids. *Cereal Chemistry*. **65**: 474–483

TAKO, M. AND HIZUKURI, S. 2002. Gelatinisation mechanism of potato starch. *Carbohydrate Polymers*. **48**: 397–401

TAN, Y. AND CORKE, H. 2002. Factor analysis of physico–chemical properties of 63 rice varieties. *Journal of the Science of Food and Agriculture*. **82**: 745–752

TANG, H., ANDO, H., WATANABE, K., TAKEDA, Y. AND MITSUNAGA, T. 2001. Physico–chemical properties and structure of large, medium and small granule starches in fractions of normal barley endosperm. *Carbohydrate Research*. **330**: 241–248

TATHAM, A. S., FIDO, R. J., MOORE, C. M., KASARDA, D. D., KUZMICKY, D. D., KEEN, J. N. AND SHEWRY, P. R. 1996. Characterisation of the major prolamins of tef (*Eragrostis tef*) and finger millet (*Eleusine coracana*). *Journal of Cereal Science*. **24**: 65–71

TAYLOR, C. B. 1998. Synthesising starch: roles for Rugosus 5 and Dull 1. *Plant Cell*. **10**: 311–314

TAYLOR, J. R. N., DEWAR, J., TAYLOR, J. AND VON ASCHERADEN, R. F.

1997. Factors affecting the porridge-making quality of South African sorghums. *Journal of the Science of Food and Agriculture*. **73**: 464-470

TEFERA, H., AYELE, M. AND ASSEFA, K. 1995. Improved varieties of tef [*Eragrostis tef* (Zucc.) Trotter] release of 1970-1995. *Research Bulletin*. No. 1. Debre Zeit Agricultural Research Centre, Ethiopia

TESTER, R. F. 1997. Influence of growth conditions on barley starch properties. *International Journal of Biological Macromolecules*. **21**: 37-45

TESTER, R. F. AND DEBON, S. J. J. 2000. Annealing of starch—a review. *International Journal of Biological Macromolecules*. **27**: 1-12

TESTER, R. F. AND KARKALAS, J. 1996. Swelling and gelatinisation of oat starches. *Cereal Chemistry*. **73**: 271-277

TESTER, R. F. AND MORRISON, W. R. 1990. Swelling and gelatinisation of cereal starches. I. Effects of amylopectin, amylose and lipids. *Cereal Chemistry*. **67**: 551-557

TESTER, R. F., DEBON, S. J. J., QI, X., SOMMERVILLE, M. D., YOUSUF, R. AND YUSUPH, M. 2001. Amylopectin crystallisation in starch. In: BARSBY, T. L., DONALD, A. M. AND FRAZIER, P. J. (Ed.). *Starch advances in structure and function*. The Royal Society of Chemistry, Cambridge, U.K., pp 97-102

THOMAS, D. J. AND ATWELL, W. A. 1999. *Starches*. Eagan Press, St. Paul, MN, pp 1-30, 49-87

TSAI, M. L., LI, C. F. AND LIU, C. Y. 1997. Effects of granular structures on the pasting behaviours of starches. *Cereal Chemistry*. **74**: 750-757

TUFVESSON, F AND ELIASSON, A. C. 2000. Formation and crystallisation of amylose-monoglyceride complex in a starch matrix. *Carbohydrate Polymers*. **43**:

359–365

UMETA, M. AND FAULKS, R. M. 1988. The effect of fermentation on the carbohydrates in tef (*Eragrostis tef*). *Food Chemistry*. **27**: 181–189

UMETA, M. AND FAULKS, R. M. 1989. Lactic acid and volatile (C₂–C₆) fatty acid production in the fermentation and baking of tef (*Eragrostis tef*). *Journal of Cereal Science*. **9**: 91–95

UMETA, M. AND PARKER, M. L. 1996. Microscopic studies of the major macro-components of seeds, dough and injera from tef (*Eragrostis tef*). *SINET: An Ethiopian Journal of Science*. **19**: 141–148

URGA, K. AND KESHAVA, N. 1998. Effect of fermentation by mixed cultures of lactic acid bacteria on the HCl-extractability of some minerals from tef (*Eragrostis tef*) atmit. *SINET: An Ethiopian Journal of Science*. **21**: 183–194

URGA, K. AND NARASIMHA, H. V. 1998. Phytate: zinc and phytate x calcium: zinc molar ratios in selected diets of Ethiopians. *Bulletin of the Chemical Society of Ethiopia*. **12**: 1–7

URGA, K., FITE, A. AND BIRATU, E. 1997 a. Effect of natural fermentation on nutritional and antinutritional factors of tef (*Eragrostis tef*). *Ethiopian Journal of Health Development*. **11**: 61–66

URGA, K., KESHAVA, N. AND NARASIMHA, H. V. 1997 b. Effect of natural and mixed culture of *Lactobacilli* fermentation on *in vitro* iron and zinc bioavailability in tef (*Eragrostis tef*) atmit. *Bulletin of the Chemical Society of Ethiopia*. **11**: 101–109

URGA, K., NARASIMHA, H. V., SASIKALA, B. V. AND VISHWANATHA. 1998. Bioavailability of iron and zinc from tef in rats. *Bulletin of the Chemical Society of Ethiopia*. **12**: 95–103

- VANSTEELANDT, J. AND DELCOUR, J. A. 1999. Characterisation of starch from durum wheat (*Triticum durum*). *Starch/Stärke*. **51**: 73–80
- VASANTHAN, T. AND HOOVER, R. 1992 a. A comparative study of the composition of lipids associated with starch granules from various botanical sources. *Food Chemistry*. **43**: 19–27
- VASANTHAN, T. AND HOOVER, R. 1992 b. Effect of defatting on starch structure and physico–chemical properties. *Food Chemistry*. **45**: 337–347
- VAVILOV, N. I. 1951. The origin, variation, immunity and breeding of cultivated plants (translated from the Russian by K. Star Chester). Ronald Press, New York, 37–38
- WALKER, C. E., ROSS, A. S., WRIGLEY, C. W. AND MCMASTER, G. J. 1988. Accelerated starch–paste characterisation with the Rapid Visco–Analyser. *Cereal Foods World*. **33**: 491–494
- WATSON, S. A. 1984. Corn and sorghum starches production. In: WHISTLER, R. L., BEMILLER, J. N. AND PASCHALL, E. F. (Eds.). *Starch: chemistry and technology*. 2nd ed., Academic Press, Orlando, Florida, pp 417–468
- WHISTLER, R. L. AND BEMILLER, J. N. 1997. *Carbohydrate chemistry for food scientists*. Eagan Press, St. Paul, MN, pp 117–151
- WHITE, P., ABBAS, I., POLLAK, L. AND JOHNSON, L. 1990. Intra– and inter–population variability of thermal properties of maize starch. *Cereal Chemistry*. **67**: 70–73
- YUAN, R. C. AND THOMPSON, D. B. 1998. Freeze–thaw stability of three waxy maize starch pastes measured by centrifugation and calorimetry. *Cereal Chemistry*. **75**: 571–573

- YU, L. AND CHRISTIE, G. 2001.** Measurement of starch thermal transitions using differential scanning calorimetry. *Carbohydrate Polymers*. **46**: 179-184
- ZENG, M., MORRIS, C. F., BATEY, I. L. AND WRIGLEY, C. W. 1997.** Sources of variation for starch gelatinisation, pasting and gelation properties in wheat. *Cereal Chemistry*. **74**: 63-71
- ZHAO, J. AND WHISTLER, R. L. 1994 a.** Spherical aggregates of starch granules as flavour carriers. *Food Technology*. **48**: 104-105
- ZHAO, J. AND WHISTLER, R. L. 1994 b.** Isolation and characterisation of starch from amaranth flour. *Cereal Chemistry*. **71**: 392-393
- ZHENG, G. H. AND SOSULSKI, F. W. 1998.** Determination of water separation from cooked starch and flour pastes after refrigeration and freeze-thaw. *Journal of Food Science*. **63**: 134-139
- ZHENG, G. H., SOSULSKI, F. W. AND TYLER, R. T. 1998.** Wet-milling, composition and functional properties of starch and protein isolated from buckwheat groats. *Food Research International*. **30**: 493-502
- ZHOU, M., ROBARDS, K., HOLMES, M. G. AND HELLIWELL, S. 1998.** Structure and pasting properties of oat starch. *Cereal Chemistry*. **75**: 273-281
- ZOBEL, H. F. 1988 a.** Starch crystal transformations and their industrial importance. *Starch/Stärke*. **40**: 1-7
- ZOBEL, H. F. 1988 b.** Molecules to granules: a comprehensive starch review. *Starch/Stärke*. **40**: 44-50

Publications

BULTOSA, G., HALL, A. N. AND TAYLOR, J. R. N. 2002. Physico-chemical characterisation of grain Tef [*Eragrostis tef* (Zucc.) Trotter] starch. *Starch/Stärke*. **54**: 461-468

BULTOSA, G. AND TAYLOR, J. R. N. Chemical and physical characterisation of grain Tef [*Eragrostis tef* (Zucc.) Trotter] starch granule composition. Manuscript submitted to the journal *Starch/Stärke* (**2 September 2002**)

BULTOSA, G. AND TAYLOR, J. R. N. Functional properties of grain Tef [*Eragrostis tef* (Zucc.) Trotter] starch. Manuscript submitted to the journal *Starch/Stärke* (**December, 2002**)

Oral paper

BULTOSA, G., HALL, A. N. AND TAYLOR, J. R. N. 2002. Some physico-chemical properties of grain Tef [*Eragrostis tef* (Zucc.) Trotter] starch. Abstract published in the 18 th annual congress (August 3-4, 2001) of the Chemical Society of Ethiopia. Chemical Society of Ethiopia, Addis Ababa, Ethiopia, p 12