

REFERENCES

- Abranches, R., Beven, A. F., Aragón-Alcaide, L. and Shaw, P. J. (1998):** Transcription sites are not correlated with chromosome territories in wheat nuclei. *J Cell Biol* **143**, 5-12.
- Abranches, R., Santos, A. P., Wegel, E., Williams, S., Castilho, A., Christou, P., Shaw, P. and Stoger, E. (2001):** Widely separated multiple transgene integration sites in wheat chromosomes are brought together at interphase. *Plant J* **24**, 713-23.
- Alfonso-Rubi, J.; Carbonero, P.; and Diaz, I. (1999):** Parameters influencing the regeneration capacity of calluses derived from mature indica and japonica rice seeds after microprojectile bombardment. *J. Euphytica*, 107: 115-122.
- Altpeter, F.; Vasil, V.; Srivastava, V.; Stoger, E. (1996):** Accelerated production of transgenic wheat (*Triticum aestivum* L.) *J. plants. Pla Cel Rep.* **16**: 12-16.
- Arzani, A.; and Mirodjagh, S.S. (1999):** Response of durum wheat cultivars to immature embryo culture, callus induction and *in vitro* salt stress. *Plant Cell Tissue J. Organ Cult.* **58**: 67-72.
- Bao, Y.; Pakhomov, A. B.; and Krishnan, K. M. (2005):** A general approach to synthesis of nanoparticles with controlled morphologies and magnetic properties *J. Appl. Phys.* **97**, 10317 .
- Barro, F.; Rooke, L.; Bekes, F.; and Gras, P. (1997):** Transformation of wheat with high molecular weight subunit genes results in improved functional properties. *J. Nat. Biotechnol.* **15**: 1295-1299.
- Blechl, A.E.; and Anderson, O.D. (1996):** Expression of a novel high-molecular-weight glutenin subunit gene in transgenic wheat. *J. Nat. Biotechnol.* **14**: 875-87.
- Bolbol, A.A. (2004).** The mutagenic potentialities of some pollutants agents on higher plants. *M.Sc. Thesis*, Faculty of Science, Zagazig University.
- Chauhan, B. P.S.; Sarder, R. ; Latif, U.; Chauhan, M.; and Lamoreaux, W. J. (2005):** Nanoengineering of metallic solution through silicone constructs *J. Acta. Chim. Solv.* **52**, 361.
- Cheng, J. D.; and Sun, D.W. (2004).** Recent developments in the applications of image processing techniques for food quality evaluation., *J. Food Science & Technology* **15** 230–249.

- Cheng, M.; Fry, J.E.; Pang, S.; Zhou, H.; et al. (1997):** Genetic transformation of wheat mediated by (*Agrobacterium tumefaciens*). *J.Plant Physiol.* 115: 971-980.
- Choudhary, R. ; Mahesh, S.; Paliwal, J. ; and Jayas D.S. (2009) :**Identification of wheat classes using wavelet features from near infrared hyperspectral images of bulk samples *J.bio systems e n g i n e e r i n g 1 0 2 (2 0 0 9) 1 1 5 – 1 2 7*.
- Curtis, B.C. (2002):** Wheat in the world. In: Curtis BC, Rajaram S, Go´mez Macpherson H (Eds) Bread wheat. FAO, Rome Available from <http://www.fao.org/DOCREP/006/Y4011E/y4011e00.htm>(accessed November 2007).
- Darwiche, A.A. (1994):** Agricultural studies on wheat. Ph. D. Thesis, Fac. Zagazig Univ., Egypt.
- Decheva E.(1992):**Object-oriented approach to the design of CAIS - an intelligent system for chromosome analysis and classification. Mathematics and Education in Mathematics. Proc. of the 21st Spring Conference of the Union of Bulgarian Mathematicians, Sofia, pp. 226-230.
- Detcheva E. (1996):** CAIS – an intelligent system for chromosome analysis and application. Int. Workshop “*Artificial Intelligence and the Humanities, Sozopol*, September pp. 49-54.
- Dobrzanska, M.; Krysiak, C.; and Kraszewska, E. (1997):** Transient and stable transformation of wheat with DNA preparations delivered by a biolistic method. *J.Acta Physiol. Plant.* 19: 277-284.
- Dornbusch .T,and Andrieu.B. (2009):** Lamina2Shape—An image processing tool for an explicit description of lamina shape tested on winter wheat (*Triticum aestivum* L.),*J.Comput.Electron.Agric.* (2009),10.1016/j.compag.2009.10.009.
- Duncan, D.R.; Williams, M.E.; Zehr, B.E.; and Widholm, J.M. (1985):** The production of callus capable of plant regeneration from immature embryos of numerous *Zea mays* genotypes. *J.Planta* 165: 322-332.
- El-Karamity, A.E. (1998):** Response of some wheat cultivars to seeding and nitrogen fertilization rates. *J.Agric. Sci., Mansur Univ.*, 23(2): 643-655.
- El-Daly, A. A.; and Tolba, M. (2009):** Internal structure of silver crystallites: going beyond nanostructure using novel processing technique; *J.Cryst. Res. Technol.* 44, No. 2, 197 – 202 (2009).

- Essay, F.A. (1996):** Agronomic studies on wheat. Ph.D. Thesis, Fac. of Agric., El-Mansoura Univ., Egypt.
- FAOSTAT (2005): Food and Agriculture Organization** of the United Nations. Available at: <http://faostat.fao.org/site/352/default.aspx>.
- Flavell, R. B., Rimpau, J. and Smith, D. B. (1977):** Repeated sequence DNA relationships in four cereal genomes. *Chromosoma* **63**, 205-222.
- Food and Agriculture Organization FAO. (2004):** Fertilizer use by crop in Pakistan. FAO, Rome. Available from (accessed December 2007).
<p://ftp.fao.org/docrep/fao/007/y5460e/y5460e00.pdf>.
- Fornal, J; Jelin, T ;, Sadowska,J. ;Grundas,S.; Nawrot,J.; Niewiada,A.; Jerzy R. Warchalewski, and Wioletta B"aszczak(2006):** Detection of granary weevil (*Sitophilus granarius L.*) eggs and internal stages in wheat grain using soft X-ray and image analysis., *J.Stored Products Research* **43** 142–148.
- Green, C.E. (1977):** Prospects for crop improvement in the field of cell culture. *J HortScience* **12**: 131-134.
- Hanawalt, J. D.; and Rinn, H. W. (1936):** Advances in X-Ray Analysis ;J.Ind. Eng Chem. Anal. Ed. **8**, 244); D.Hanawalt, 20, 63-73 (1976).
- Hassanein, M.S.; Ahmed, M.A.; and El-Hariri, D.M. (1997):** Response of some wheat cultivars to different nitrogen sources. *J. Agric. Sci., Mansoura Univ.*, **22**: 349-360.
- Hedden, P. (2003):** The genes of the Green Revolution. *J.Trends Genet.* **19**: 5–9.
- Heslop-Harrison, J. S. (2000):** Comparative genome organization in plants: from sequence and markers to chromatin and chromosomes. *J Plant Cell* **12**, 617-36.
- Horn, P. J. and Peterson, C. L. (2002):** Molecular biology. Chromatin higher order folding - wrapping up transcription. *J Science* **297**, 1824-7.
- Hunold, R.; Broner, R.; and Hahne, G.(1994):** Early events in microprojectile bombardment: cell viability and particle location. *Plant J.*, **5**: 593-604.
- Ingram, H.M.; Power, J. B.; Lowe, K.C.; and avey, M.R.(1999):** Optimization of procedures for microprojectile bombardment of microspore-derived embryos in wheat.*J.Plant Cell, Tissue and Organ Culture*, **57**(3).

- Iser, M.; Fettig, S.; Scheyrling, F.; Viertel, K.; and Hess, D. (1999):** Genotype-dependent stable genetic transformation in German spring wheat varieties selected for high regeneration potential. *J. Plant Physiol.*, 154(4): 509-516.
- Italiano, J. E., Jr. and Shivdasani, R. A. (2003):** Megakaryocytes and beyond: the birth of platelets. *J Thromb Haemost* 1, 1174-82.
- Kato, Y. and Sasaki, H. (2005):** Imprinting and looping: epigenetic marks control interactions between regulatory elements. *J.Bioessays* 27, 1-4.
- Kent, N.L. (1994):** Technology of cereals Pergamon Press, Oxford, *J.Chemical components*; 4: 53.
- Khattab, A.A. (1994):** Tolerance of some wheat varieties to water deficiency. M.Sc. Thesis, *Fac. of Agric.*, Al-Azhar Univ., Egypt.
- Klein, C.; and Dutrow, B. (2008):** *Mineral Science*, the 23rd, Ed. (John Wiley & Sons, Inc., USA, pp. 221–234.
- Karunakaran, C. ; Jayasa, D.S. ; and White N.D.G. (2003):** Detection of internal wheat seed infestation by *Rhyzopertha dominica* using X-ray imaging *J. Stored Products Research* 40 (2004) 507–516.
- Karunakaran, C.; Jayas, D.S.; and White, N.D.G. (2004):** Identification of Wheat Kernels damaged by the Red Flour Beetle using X-ray Images., *J.Biosystems Engineering* (2004) 87 (3), 267–274.
- Koprek, T.; Hänsch, R.; Nerlich, A.; Mendel, R.; and Schulze, J. (1996):** Fertile transgenic barley of different cultivars obtained by adjustment of bombardment conditions to tissue response. *Plant Science*, 119: 79-91.
- La Rue, C.D. (1949):** Culture of the endosperm of *maize*. *Am. J. Bot.* 34: 585-586.
- Li, J.; Tan, J.; and Shatadal, P. (2001):** Classification of tough and tender Beef by image texture analysis. *Meat Science*, 57, 341–346.
- López-Pérez, J. A.; López Quintela, M. A.; Mira, J.; Rivas, J.; and Charles, S. W. (1997):** *J. Phys. Chem. B* 101, 8045.
- Lührs, R.; and Lörz, H. (1988):** Initiation of morphogenic cell-suspension and protoplast cultures of barley (*Hordeum vulgare* L.). *J. Planta* 175: 71-81.

- Luo, X.,; Jayas, D. S. and Symons S. J. (1999):** Identification of Damaged Kernels in Wheat using a Colour Machine Vision System., *J. Cer. Sci.* **30** (1999) 49–59
- Lysak, M. A., Pecinka, A. and Schubert, I. (2003):** Recent progress in chromosome painting of Arabidopsis and related species. *Chromosome Res* **11**, 195-204.
- Maes, O.C.; Chibbar, R.N.; Caswell, K.; Leung, N; et al. (1996):** Somatic embryogenesis from isolated scutella of wheat: effects of physical, physiological and genetic factors. *J.Plant Sci.* **121**: 75-84.
- Manickavasagan, G.; and Sathya, D.S. Jayas (2008):** Comparison of illuminations to identify wheat classes using monochrome *J. images computers and electronics in agriculture* **6 3** 237–244.
- Marathee, J.P.; Gomez; and Macpherson, H. (2000):** Future World Supply and Demand World Wheat Book (*Edited Bonjean and Angus*) *Ch 43 pp 1107-1116*
- Martínez-Pérez, E., Shaw, P., Reader, S., Aragón-Alcaide, L., Miller, T. and Moore, G. (1999):** Homologous chromosome pairing in wheat. *J. Cell Sci.* **112 (Pt 11)**, 1761-9.
- Master, M.C.; and Gould, J.T. (1995):** Wheat usage in Australia and New Zealand. In H. Faridi & J.M. Faubion, eds. *J.Wheat end uses around the world*, p. 267-285. St Paul, MN, USA, *American Association of Cereal Chemists*.
- Mezreb. K.; Goullieux, A.; Ralainirina, R.;and Queneudec,M. (2002):** Application of image analysis to measure screw speed influence on physical properties of corn and wheat extrudates.,*J. Food Engineering* **57** (2003) 145–152.
- Mighell, A. D.; and Karen, V. L. (1996):** NIST Crystallographic Databases for Research and Analysis. *J. Res. Natl. Inst. Stand.Technol.* **s101**, 237.
- Mosalem, M. E. (1993):** Response of two wheat cultivars to nitrogen level and seeding rate.*J. Agric. Res., Tanta Univ., 19 (4): 791 80.*
- Mosalem, M. E.; Zahran, M.; EL-Menofi, M. M.; and Moussa, A. M. (1997):** Effect of sowing date, seeding rate and nitrogen level on wheat production: 2- Yield and yield components. *First Ann. Conf. Sept. 1-3*, NRC, Giza, Egypt.
- Mostafa, H.A.; Helmy ,A.; and Salem M.A. (1997):** Effect of nitrogen fertilization on yield and yield components of wheat (*Triticum aestivum L.*) under new land environment. *J.Agric. Sci. Mansoura Univ.*, **22(1)**: 1-11.

- Murashige ,T and Skoog,F (1962).**A revised medium for repid growth and bio assays with tobacco tissue culture .*physiologia plantarum*,15:473-497.
- Neethirajan, S.; Karunakaran, C. ; Symonsc, S. ; and Jayas D.S. (2006).**, Classification of vitreousness in durum wheat using soft X-rays and transmitted light images., *J.Computers and Electronics in Agriculture* 53 (2006) 71–78.
- Neethirajan S.; Jayas , D.S. ; and. White N.D.G (2007):** Detection of sprouted wheat kernels using soft X-ray image analysis *J. Food Engineering* 81 (2007) 509–513.
- Nehra, N.; Chibbar, R.;Leung, N.; Caswelt, K.; Mallard, C.; Steinhauer, L.; Baga, M.;and Kartha, K.K.(1994):**Self-fertile transgenic wheat plants regenerated from isolated scutellar tissues following microprojectile bombardment with two distinct gene constructs. *The Plant Journal*, 5(2): 285- 297.
- Ozagen, M.; Turet, M.; Altiinok, S.; and Sancak, C. (1998):** Efficient callus induction and plant regeneration from mature embryo culture of winter wheat (*Triticum aestivum* L.) genotypes. *J.Plant Cell Rep.* 18: 331-335.
- Ozgen, M.; Onde, S.; Birsin, M.; and Sancak, C. (1999):** Transient expression of betaglucuronidase (GUS) gene in mature embryos of winter durum wheat via microprojectile bombardment. *J.Wheat Information service*, 89: 30-32.
- Pearson,T.; Brabec, D.; Haley,S.(2008):** Color image based sorter for separating red and white wheat., *Sens. & Instrumen.J. Food Qual.* (2008) 2:280–288.
- Perl, A.; Kless, H.; Blumenthal, A.; Galili, G.; and Galun, E. (1992):** Improvement of plant regeneration and GUS expression in scutellar wheat calli by optimization of culture conditions and DNA-microprojectile delivery procedures. *J.Mol. Gene Genetics*, 235: 279-284.
- Pinna, N. (2005):** X-Ray Diffraction form nanocrystals *Progr. Colloid. Polym. Sci.* 29, 130.
- Pomeranz, Y. (1987):** Modern Cereal Science and Technology. VCH Publishers Inc., New York.
- Pomeranz, Y.; and Williams, P.C. (1990):** Wheat hardness it's genetic, structural,

and biochemical background, *measurement, and significance*. 471.

- Rasco-Gaunt, S., Riley, A., Barcelo, P. and Lazzeri, P.A. (1999):** Analysis of particle bombardment parameters to optimize DNA delivery into wheat tissues. *J. Plant Cell Reports*, 19: 118-127.
- Rasco-Gaunt, S.; Riley, A., Cannell, M.; Barceló, P.; and Lazzeri, P. A. (2001):** Procedures allowing the transformation of a range of European elite wheat varieties via particle bombardment. *J. Exp. Botany*, 52(375): 865-874.
- Redway, F.A.; Vasil, V.; Lu, D.; and Vasil, I.K. (1990):** Identification of callus types for long-term maintenance and regeneration from commercial cultivars of wheat (*Triticum aestivum* L.). *Theory. Appl. Genet.* 79: 609-617.
- Sadek, E. M. (1990):** Effect of seeding rates and time of nitrogen application on growth, yield and quality of wheat. Ph.D. Thesis, Fac. of Agric., Cairo Univ., Egypt.
- Salem, M. A. (1999):** Effect of sowing dates and seeding rates on productivity of three newly wheat cultivars (*Triticum aestivum* L.) *J. Agric. Sci. Mansoura Univ.*, 24 (9): 4379 4395.
- Sarker, R.H.; and Biswas, A. (2002):** *In vitro* plantlet regeneration and *Agrobacterium*-mediated genetic transformation of wheat (*Triticum aestivum* L.). *J. Plant Tissue Cult.* 12: 155-165.
- Sears, E. R. (1966):** Nullisomic-tetrasomic combinations in hexaploid wheat. In: Chromosome manipulations and Plant Genetics (eds. R. RILEY & K. R. LEWIS) *J.A supplement to Heredity* 20: 29-45.
- Sears, R.G.; and Deckard, E.L. (1982):** Tissue culture variability in wheat: callus induction and plant regeneration. *J. Crop Sci.* 22: 546-550.
- Siebel, W. 1995** .Wheat usage in Western Europe. In H. Faridi and J. Faubion, eds. *Wheat End Uses Around the World*. St. Paul. MN: *American Society of Cereal Chemistry*. pp. 93–125.
- Sharshar, M.S.; Soad, A.; and El-Said (2000):** Evaluation of some wheat cultivars and lines under low and high inputs. *J. Agric. Sci. Mansoura Univ.*, 25(6): 3109-3127 *Soil Fertility and Plant Nutrition* 273.
- Shewry, P.R.; Tatham, A.S.; Halford, N.G. (1999):** Seed Proteins, Shewry PR, Casey (Eds). *Kluwer Academic & Publishers: Dordrecht*.

- Shouche, S.P.; Rastogi, R.; Bhagwat, S.G. ; and Jayashree Krishna Sainis(2001):** Shape analysis of grains of Indian wheat varieties., *Computers and Electronics in Agriculture* 33 (2001) 55–76
- Siebel, W. (1995):** Wheat usage in Western Europe. In H. Faridi and J. Faubion, eds. *Wheat End Uses around the World*. St. Paul. MN: *J.American Society of Cereal Chemistry*. pp. 93–125.
- Sobh, M.M.; Sharshar, M.S.; and Soad, A. El-Said (2000):** Response of wheat to nitrogen and potassium application in a salt affected soil. *J. Product & Dev.*, 5(1): 83-98.
- Sorour, F. A.; Mosalem M.E.; and Khaffagy ,A.E. (1998):** Effect of preceding crop, seeding rates and nitrogen levels on wheat growth and yield and its components. *J. Agric. Res., Tanta Univ.*, 24 (3): 263 281.
- Sun, D.W. and Brosnan,T(2003):** Pizza quality evaluation using computer vision–Part2 Pizza topping analysis. *J. Food Engineering* Volume 57, Issue 1, March 2003, Pages 91-95.
- Sun, Changming., Mark Berman, David Coward, Brian Osborne(2007),** Thickness measurement and crease detection of wheat grains using stereo vision .*J,science direct Pattern Recognition Letters* 28 (2007) 1501–1508.
- Taddei, A., Hediger, F., Neumann, F. R. and Gasser, S. M. (2004):** The function of Nuclear architecture: a genetic approach. *J.Annu Rev Genet* 38, 305-45.
- Tahir, A.R.; Neethirajan, S.; Jayas D.S.; Shahin,M.A. ; Symons, S.J. ; and White, N.D.G. (2007):**Evaluation of the effect of moisture content on cereal grain by digital image analysis., *science direct Food Research International* 40 (2007) 1140–1145
- Takumi S, Shimada T. (1996):** Production of transgenic wheat through particle bombardment of scutellar tissues: frequency is influenced by culture duration. *J Plant Physiol.*; 149:418–423.
- Takumi, S.; and Shimada, T. (1997):** Variation in transformation frequencies among six common wheat cultivars through particle bombardment of scutellar tissues. *J.Genes Genet. Syst.* 72: 63-69.
- Tao, Y.; Heinemann, P. H.; Vargheses, Z.; Morrow, C. T.; and Sommer,H. J. III (1995):** Machine vision for color inspection of potatoes and apples. *Transactions of the ASAE*, 38, 1555–1561.
- Tsukamoto, T., Hashiguchi, N., Janicki, S. M., Tumber, T., Belmont, A. S. and Spector, D. L. (2000):** Visualization of gene activity in living cells.*J. Nat. Cell Biol.* 2, 871-8.

- Vain P, McMullen MD, Finer JJ.(1993):** Osmotic treatment enhances particle bombardment mediated transient and stable transformation of maize. *Plant Cell Reports* 12, 84–88.
- Vasil, I.K. (1987):** Developing cell and tissue culture systems for the improvement of cereal and grass crops. *J. Plant Physiol.* 128: 193-218.
- Vasil, I.K.; and Vasil, V. (1986):** Regeneration in Cereal and Other Grass Species. In: *Cell Culture and Somatic Cell Genetics of Plants. Volume 3. Plant Regeneration and Genetic Variability* (Vasil IK, Ed.). Academic Press, Orlando, 121-150.
- Vasil, V.; Redway, F.; and Vasil, I.K. (1990):** Regeneration of plants from embryogenic suspension culture protoplasts of wheat (*Triticum aestivum* L.). *Bio/Technology* 8: 429-434.
- Vasil, I.K., (2003):** The science and politics of plant biotechnology—a personal perspective. *Nat. Biotechnol.*, 21: 849–851.
- Venora, G.; Grillo, O.; and Saccone, R. (2009):** Quality assessment of durum wheat storage centres in Sicily: Evaluation of vitreous, starchy and shrunken kernels using an image analysis system., *J. Cereal Science* 49 (2009) 429–440.
- Wang, N.;Dowell, F. and Zhang,N.(2002):**Determining Wheat Vitreousness Using Image Processing and a Neural Network., *ASAE Annual International Meeting / CIGR XVth World Congress*.
- Weeks, J.T.;Anderson, O.D.; and Blechl, A.E. (1993):** Rapid production of multiple independent lines of fertile transgenic wheat (*Triticum aestivum*). *Plant Physiol.*, 102(4):1077-1084.
- Yamada, Y.; Yang, Z.Q.; and Tang, D.T (1986):** Plant regeneration from protoplast-derived callus of rice (*Oryza sativa* L.).*J.Plant Cell Rep.* 5: 85-88.
- Yamashita, T.; Iida, A.; and Morikawa, H. (1991):** Evidence that more than 90% of β -Glucuronidase-expressing cells after particle bombardment direct receive the foreign gene in their nucleus. *J.Plant Physiol.*, 97: 829-831.
- Ye, X. G.; Xu, H. J.; Du, L. P.; and Xin, Z. Y. (2001):** Study on the factors influencing the efficiency of wheat transformation, *J.Scientia Agricultura Sinica*, 34(2): 128-132.

- Ye, X. G.; Sato, S.; Xu, H. J.; Du, L. P.; and Clemente, T. (2002):** Regular production of transgenic wheat mediated by (*Agrobacterium tumefaciens*). *J.Agric. Sciences in China*, 1(3):239-244.
- Zahran, M.; and Mosalem, M. E. (1993):** Effect of foliar application of some micronutrients under different levels of nitrogen on the productivity of wheat. *J. Agric. Res.*, Tanta Univ., 19 (1): 52 62.
- Zahran, M.; Mosalem, M. E. ; El-Menofi , M.M. ;and Moussa, A. M (1997):** Effect of sowing date, seeding rate and nitrogen level on wheat production: 1- growth and growth attributes.Effect of Nitrogen Fertilization Levels on Some Wheat Cultivars. *First Ann. Conf.* Sept. 1-3, NRC, Egypt.
- Zapotoczny,P.;M. Zielinska.;and Nita,Z.(2008):** Application of image analysis for the varietal classification of barley: Morphological features *J. Cereal Science* 48 (2008) 104–110.