

Editor-in-Chief, Arab Journal of Plant Protection (AJPP)
Executive Committee Member, Arab Society for Plant Protection (ASPP)

PERSONAL DATA

Name: Khaled Makkouk
Birthday: September 19, 1941
Nationality: Lebanese
Family status: Married, 3 children
Health: Excellent
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EDUCATION

High school

1949-1959 : Dar Atterbieh Wattaaleem, Tripoli, Lebanon

College

1959-1963 : B.Sc. Cairo University, College of Agriculture. Degree conferred 1963.

1969-1971 : M.Sc. Louisiana State University, Plant Pathology Department. Major in Plant Pathology, area of specialization is plant virology. Thesis title "Viruses infecting tomato breeding lines in Louisiana". Degree conferred August 1971.

1971-1974 : Ph.D. University of California at Riverside, Plant Pathology Department. Major in plant pathology, area of specialization is plant virology. Thesis title "Characterization of potato virus strains isolated from pepper in California. Degree conferred June 1974.

LANGUAGES

Arabic: Native language
English: Medium of instruction in high school and college
French: Two years in high school
German: One year in Goethe Institute

EXPERIENCE

1964-1969 Ministry of Agriculture-Green Plan. Job responsibilities were developing land for agricultural use.

1972-1973 Teaching assistant, Plant Pathology Department, University of California at Riverside.

1974-1985 Researcher with the National Council for Scientific Research (Lebanon), working on virus diseases of economic crops.

1976-1977 Assistant Professor, Faculty of Agriculture, University of Jordan

1977-1985 Associate Professor of Plant Pathology (part time) at the Faculty of Agricultural and Food Sciences, American University of Beirut.

1985-2002	Virologist, International Center for Agricultural Research in the Dry Areas (ICARDA), Aleppo, Syria.
1989-1990	Acting Head, Genetic Resources Unit, ICARDA
1999-2001	Acting Program leader, Germplasm Program, ICARDA
2003-2004	President, Al-Manar University of Tripoli (MUT), Tripoli, Lebanon.
2005-2007	Regional Coordinator, Nile Valley and Red Sea Regional Program, ICARDA, Cairo, Egypt
2008-Present	Advisor for Agriculture and Environment, National Council for Scientific Research, Beirut, Lebanon.

REFERENCES

- Dr. Lukas Brader, Grote Molenweg 106, 3020 Herent, Belgium; Tel: 016 228688, Email: brader.lukas@skynet.be
- Dr. Mouin Hamze, Secretary General, National Council for Scientific Research, Beirut, Lebanon; Email: hamze@cns.edu.lb
- Dr. G. Martelli, Dipartimento di Patologia, Via G. Amendola 165/A, 70126 Bari, Italy; Tel: 080-242911 (office), Email: martelli@bibragr.uniba.it
- Dr. Mahmoud Solh, Director General, ICARDA, Beirut, Lebanon; Email: m.solh@cgiar.org

FELLOWSHIPS/AWARDS

- Received a fellowship from the German Academic Exchange Service (DAAD) and spent three months as a visiting researcher at the University of Bonn, Institute of Plant Diseases January 15-April 15, 1976, working in the lab. of Dr. Franz Nienhaus on virus inhibitors.
- Received another fellowship from DAAD and visited the German "Federal Biological Research on Agriculture and Forestry" where I stayed from August 20 until October 8, 1979 working in the lab of Dr. D. Lesemann on techniques in electronmicroscopy.
- Visiting Researcher at the Irrigated Agriculture Research and Extension Center of Washington State University, Prosser, Washington, USA, for 4 months June 15, 1982- October 15, 1982.
- Visiting scientist at Agriculture Canada/ Laval University, Sainte Foy, Quebec, Canada, July 1992 - July 1993.
- Selected as Senior Researcher of the Year, ICARDA, 2000.

MEMBERSHIP IN PROFESSIONAL COMMITTEES

- Special Projects Committee of the International Society of Plant Pathology (ISPP) 1983-1988.
- Arab Society for Plant Protection, Secretary Treasurer 1981-1994; Vice President 1994-1997; President 1998-2000.
- Board member of the Mediterranean Phytopathological Union, 1988-1991 and 1998-Present.
- President Elect, Mediterranean Phytopathological Union, 2003-2005.
- President, Mediterranean Phytopathological Union, 2006-2010.
- Editorial Board Member, Phytopathologia Mediterranea, 1995-2011.
- Chairman, Steering Committee, Mediterranean Fruit Improvement Council, 1983-1991.
- Member of the Plant Virus Subcommittee of the International Committee for Taxonomy of Viruses (ICTV), 1988-1999.
- Member of on-going international specialized working groups, such as the working group on (i) potyviruses, (ii) luteoviruses, and (iii) nanoviruses.
- Executive Secretary, International Working Group on Legume Viruses, 1994-1996.

- Editor-in-Chief, Arab Journal of Plant Protection, 2000- Present.

MEMBERSHIP IN PROFESSIONAL SOCIETIES AND WORKING GROUPS

- American Phytopathological Society
- The New York Academy of Sciences.
- Arab Society for Plant Protection.
- Mediterranean Phytopathological Union.
- International Working Group on Legume and Vegetable Viruses.

SUPERVISION OF THESIS RESEARCH

Over the past 25 years I guided 22 M.Sc. & 3 Ph.D. graduate students to conduct their thesis research in my laboratory.

PUBLICATIONS

39 papers were published in Arab Journal of Plant Protection

1. **Makkouk, K.M.** and G.E. Holcomb. 1972. Viruses infecting tomato in Louisiana. Plant Dis. Repr. 56:272.
2. **Makkouk, K.M.** and D.J. Gumpf. 1974. Isolation and properties of potato virus Y ribonucleic acid. Phytopathology 64: 1115-1118.
3. **Makkouk, K.M.** and D.J. Gumpf. 1974. Further identification of naturally occurring virus diseases of pepper in California. Plant Dis. Repr. 58: 1002-1006
4. **Makkouk, K.M.** and D.J. Gumpf. 1975. Characterization of the protein and nucleic acid of potato virus Y strains isolated from pepper. Virology 63: 336-344.
5. **Makkouk, K.M.** and D.J. Gumpf. 1976. Characterization of potato virus Y strains isolated from pepper. Phytopathology 66: 576-581.
6. **Makkouk, K.M.** 1976. Reaction of tomato cultivars to tobacco mosaic and tomato yellow leaf curl viruses in Lebanon. Poljoprivredna Znanstvena Smotra (Zagreb) 39: 121-126.
7. Macaron, J., H. Laterrot, P. Davet, **K.M. Makkouk** et A. Ravise. 1976. Etude du comportement au Liban de variétés et hybrides de *Lycopersicon esculentum* Mill. Résistants aux nématodes, au virus de la mosaïque du tabac et aux principaux micromycètes parasites. Poljoprivredna Znanstvena Smotra (Zagreb) 39: 113-119.
8. **Makkouk, K.M.** 1978. A study on tomato viruses in the Jordan Valley with special emphasis on tomato yellow leaf curl. Plant Disease Reporter 62: 259-262.
9. Abu-Gharbieh, W.I., **K.M. Makkouk** and A.R. Saghir. 1978. Response of different tomato cultivars to the root-knot nematode, tomato yellow leaf curl virus, and *Orbanche* in Jordan. Plant Disease Reporter 62: 263-266.
10. **Makkouk, K.M.**, S. Shehab and S. Majdalani. 1979. Tomato yellow leaf curl: Incidence, yield losses and transmission in Lebanon. Phytopath. Z. 96: 263-266.
11. **Makkouk, K.M.** and N.H. Rana. 1979. Occurrence of tomato mosaic virus in the soils of the coastal region of Lebanon. Plant Disease Reporter 63: 290-293.
12. **Makkouk, K.M.** and S. Shehab. 1980. Identification, properties, and incidence of carnation mottle virus on carnations in Lebanon. Journal of Plant Diseases and Protection 87: 557-561.
13. **Makkouk, K.M.** and D.E. Lesemann. 1980. A severe mosaic of cucumbers in Lebanon caused by watermelon mosaic virus I. Plant Disease 64: 799-801.

14. **Makkouk, K.M.**, R. Koenig and D.E. Leseman. 1981. Characterization of a tombusvirus isolated from eggplant. *Phytopathology* 71: 572-577.
15. **Makkouk, K.M.**, D.E. Lesemann and N.A. Haddad. 1982. Bean yellow mosaic virus from broad bean in Lebanon: incidence, host range, purification, and serological properties. *Journal of Plant Diseases and Protection* 89: 59-66.
16. **Makkouk, K.M.** and O.A. Jarikji. 1983. Detection of sap-transmissible viruses infecting cereals in Jordan, Lebanon and Syria. *Journal of Plant Diseases and Protection* 90: 12-17.
17. Laterrot, H. and **K.M. Makkouk**. 1983. Selection for partial resistance to tomato yellow leaf curl virus (=TYLCSV). *Tomato Genetic Cooperative report* 33.
18. **Makkouk, K.M.** and H. Laterrot. 1983. Epidemiology and Control of tomato yellow leaf curl virus, 315-321. *In Plant Virus Epidemiology*, R.T. Plumb and J.M. Thresh editors. Blackwell Scientific Publications, Oxford, 368 pp.
19. Faris-Mukhayyish, S. and **K.M. Makkouk**. 1983. Detection of four seed-borne plant viruses by the enzyme-linked immunosorbent assay (ELISA). *Phytopathol. Z.* 106: 108-114.
20. Koeing, R., D.E. Lesemann, W. Huth and **K.M. Makkouk**. 1983. Comparison of the new cucumber soil-borne virus with tombus-, diantho-, and other similar viruses. *Phytopathology* 73: 515-520.
21. **Makkouk, K.M.** and F. Asli. 1983. Apple rough skin disease on apples in Lebanon. *Arab Journal of Plant Protection*, 1: 25-26.
22. Lesemann, D. E., **K.M. Makkouk**, R. Koeing and E. Natafji Samman. 1983. Natural infection of cucumbers by zucchini yellow mosaic virus. *Phytopathologische Zeitschrift* 108: 304-313.
23. **Makkouk, K.M.** and S. Faris-Mukhayyish. 1983. Detection of citrus tristeza virus by different variants of the enzyme-linked immunosorbent assay (ELISA). *Phytopathologia Mediterranea* 22: 177-180.
24. **Makkouk, K.M.**, G. Ghanem and H. Khatib. 1984. Survey of virus and virus-like diseases affecting citrus in Lebanon. *Arab Journal of Plant Protection* 2: 23-27.
25. Saghir, A.R. and **K.M. Makkouk**. 1984. Present and future status of Plant Protection in the Arab countries. *Arab Journal of Plant Protection* 2: 53-58.
26. **Makkouk, K.M.** and R.E. Menassa. 1985. Effects of mineral oil spray on aphid transmission of Zucchini yellow mosaic virus to cucumbers. *Arab Journal of Plant Protection* 3: 18-23.
27. Azzam, O. I. and **K.M. Makkouk**. 1985. A survey of viruses affecting dry bean and cowpea in Lebanon. *Arab Journal of Plant Protection* 3: 76-80.
28. **Makkouk, K.M.** and S. Faris-Mukhayyish. 1985. Economizing mass indexing of citrus tristeza virus by the enzyme-linked immunosorbent assay (ELISA). *Lebanese Bulletin* 1: 7-12.
29. Menassa, R., **K.M. Makkouk** and A.A. Abbasher. 1986. Detection of Zucchini yellow mosaic virus in intact leaf disks and tissue extracts by enzyme-linked immunosorbent assay. *J. Phytopathology* 115: 152-159.
30. **Makkouk, K.M.**, D.E. Lesemann, H.J. Vetten and O.I. Azzam. 1986. Host range and serological properties of two potyvirus isolates from *Phaseolus vulgaris* in Lebanon. *Tropical Agriculture Research (Japan)* 19: 187-194.
31. Azzam, O.I. and **K.M. Makkouk**. 1986. Purification of two potyvirus isolates infecting *Phaseolus vulgaris* in Lebanon. *Phytopathologia Mediterranea* 25: 125-130.
32. **Makkouk, K.M.**, O.I. Azzam, L. Katul, A. Rizkallah and S. Koumari. 1986. Seed transmission of broad bean stain virus in the wild legume *Vicia palaestina* Boiss. *FABIS* 16: 40-41.
33. **Makkouk, K.M.** and R.E. Menassa. 1986. Inhibiting aphid-spread zucchini yellow mosaic virus with oil sprays. *J. Plant Diseases and Protection* 93(1):104-107.

34. **Makkouk, K.M.** and O.I. Azzam. 1986. Detection of broad bean stain virus in lentil seed groups. *Lens* 13(2): 37-38.
35. Katul, L. and **K.M. Makkouk**. 1987. Occurrence and serological relatedness of five cucurbit potyviruses in Lebanon and Syria. *Phytopathologia Mediterranea* 26:36-42.
36. **Makkouk, K.M.**, L. Bos, O.I. Azzam, L. Katul and A. Rizkallah. 1987. Broad bean stain virus: identification, detectability in faba bean leaves and seeds, occurrence in West Asia and North Africa and possible wild hosts. *Netherlands Journal of Plant Pathology* 93: 97-106.
37. **Makkouk, K.M.**, O.I. Azzam and L. Katul. 1987. Sensitivity of dot-ELISA on nitrocellulose membranes in comparison with ELISA on polystyrene plates for the detection of four plant viruses. *Lebanese Science Bulletin* 3: 29-35.
38. Abdallay, A., **K.M. Makkouk** and C. Cardona. 1987. Control of *Heliothis* spp. on chickpea by insect pathogenic nuclear polyhedrosis virus. *Arab Journal of Plant Protection* 5: 78-80.
39. **Makkouk, K.M.** 1987. Testing for barley yellow dwarf virus (BYDV) at ICARDA. *RACHIS* 6:43
40. **Makkouk, K.M.**, V.F. Eastop, N. Wilding and I. Irani. 1987. Natural infection of the cereal aphid *Metopolophium dirhodum* with a fungus in Syria. *RACHIS* 6: 43-44.
41. **Makkouk, K.M.**, L. Katul and A. Rizkallah. 1987. Electrophoretic separation: an alternative simple procedure for the purification of broad bean mottle and alfalfa mosaic viruses. *FABIS* 19: 12-14.
42. Bos, L., R.O. Hampton and **K.M. Makkouk**. 1988. Viruses and virus diseases of pea, lentil, faba bean and chickpea. pp 591-615 in *World Crops: Cool Season Food Legumes*. R. J. Summerfield (ed.). Kluwer Academic Publishers, Dordrecht, The Netherlands, 1179 pp.
43. **Makkouk, K.M.**, L. Bos, O.I. Azzam, S. Koumari and L. Rizkallah. 1988. Survey of viruses affecting faba bean in six Arab countries. *Arab Journal of Plant Protection* 6: 53-61.
44. **Makkouk, K.M.**, L. Bos, A. Rizkallah, O.I. Azzam and L. Katul. 1988. Broad bean mottle virus: identification, serology, host range and occurrence on faba bean (*Vicia faba*) in West Asia and North Africa. *Netherlands Journal of Plant Pathology* 94: 195-212.
45. Skaf, J. S. and **K.M. Makkouk**. 1988. Comparison between mechanical and aphid inoculation of bean yellow mosaic virus to faba bean. *FABIS* 21: 34-36.
46. Skaf, J. S. and **K.M. Makkouk**. 1988. Aphid transmission of bean yellow mosaic and bean leaf roll viruses in Syria. *Phytopathologia Mediterranea* 27: 133-137.
47. Skaf, J. S. and **K.M. Makkouk**. 1988. Resistance indicators to barley yellow dwarf virus in barley, durum and bread wheat. *RACHIS* 7: 53-54.
48. Skaf, J.S., **K.M. Makkouk**, F. Al-Azmeh and W. Al-Kassis. 1988. Aphid transmission, distribution and serotyping of barley yellow dwarf virus (BYDV) in Syria. *Arab Journal of Plant Protection* 6: 97-105.
49. Comeau, A. and **K.M. Makkouk**. 1988. Recent progress in barley yellow dwarf virus research: interactions with diseases and other stresses. *RACHIS* 7: 5-11.
50. **Makkouk, K.M.**, L. Katul and A. Rizkallah. 1988. A simple procedure for the purification and antiserum production of bean yellow mosaic virus. *J. Phytopathology* 122:89-93.
51. Mamluk, O.F., M.P. Haware, **K.M. Makkouk** and S.B. Hanouniok. 1989. Occurrence, losses and control of important cereal and food legume diseases in West Asia and North Africa. *Tropical Agriculture Research Series No. 22 (Japan)*: 131-140.
52. **Makkouk, K.M.**, D. Beck and M. Diekmann. 1989. Applications of immuno and DNA hybridization diagnostics in research at ICARDA. pp. 399-411 In *Proceedings of a USAID Symposium on "Strengthening Collaboration in Biotechnology: International Agricultural Research and the Private Sector"* held April 17-21, 1988 in Rosslyn, Virginia, U.S.A.

53. **Makkouk K.M.** and S.B. Hanouniok. 1989. Major faba bean diseases with special emphasis on virus diseases. Proceedings of the International Symposium on faba bean, Hangzhou, China, May 24-26, 1989.
54. **Makkouk, K.M.**, I. Barker and J. Skaf. 1989. Serotyping of barley yellow dwarf virus isolates on cereal crops in countries of West Asia and North Africa. *Phytopathologia Mediterranea* 28: 164-168.
55. **Makkouk, K.M.** and S. Kumari. 1989. *Apion arrogans*, a weevil vector of broad bean mottle virus. *FABIS* 25: 26-27.
56. **Makkouk, K.** and W. Ghulam. 1989. Wheat wild relatives as possible sources of resistance to barley yellow dwarf virus. *RACHIS* 8 (2): 36-37
57. **Makkouk, K.M.**, O.I. Azzam, J. Skaf, M. El-Yamani, C. Cherif and A. Zouba,. 1990. Situation review of barley yellow dwarf virus in West Asia and North Africa. pp 61-65 *In* *World Perspectives on Barley Yellow Dwarf*. Burnett P.A. (ed.). CIMMYT, Mexico, D.F., Mexico.
58. **Makkouk, K.M.**, S.G. Kumari and L. Bos. 1990. Broad bean wilt virus: host range, purification, serology, transmission characteristics, and occurrence in faba bean in West Asia and North Africa-*Netherlands Journal of Plant Pathology* 96: 291-300.
59. Thottappilly, G., H.W. Rossel, D.V.R. Reddy, F.J. Morales, S.K. Green and **K.M. Makkouk**. 1990. Vectors of virus and mycoplasma diseases of tropical food legumes: an overview-pages 323-342. *In* *Insect pests of Tropical Food Legumes*, S.R. Singh (ed). John Wiley and Sons Ltd. New York, 451 pp.
60. **Makkouk, K.M.** and S.G. Kumari. 1990. variability among 19 lentil genotypes in seed transmission rates and yield loss induced by broad bean stain virus infection. *LENS Newsletter* 17 (2): 31- 33.
61. Bos, L., **K.M. Makkouk** and B. Bayaa. 1990. Witches'broom and decline of Eucalyptus, a serious disease in Syria, likely caused by mycoplasma. *Arab Journal of Plant Protection*, 8: 133-135.
62. Aldaoud, R., M. El-Ahmed, B. Bayaa and **K. Makkouk**. 1991. Incompatibility between root stock and scion of grapevine in Syria is possibly caused by a virus. *Arab Journal of Plant Protection*, 9: 66- 67.
63. **Makkouk, K.M.**, W. Abu-Gharbieh, B. Bayaa, S. Sharif and A. R. Saghir. 1991. Plant protection research in the Arab countries: present status and future perspectives. *Arab Journal of Plant Protection*, 9: 68-79.
64. El-Yamani, M., **K.M. Makkouk**, B. Hafidi and K. El-Kassem. 1992. Contribution to the study of barley yellow dwarf virus in the Souss-Massa region of Morocco. *Phytopath. Medit.* 31:41-45.
65. Comeau, A. and **K. Makkouk** (eds.) 1992. Barley yellow dwarf in West Asia and North Africa. Proceedings of a workshop, ICARDA, Aleppo, Syria, 239pp.
66. Aboul-Ata, A.E., J.C. Thouvenel, **K.M. Makkouk** and M.M. Satour. 1992. Barley yellow dwarf virus in Egypt: natural incidence, transmission and wild hosts. *Arab Journal of Plant Protection*, 10: 226-231.
67. **Makkouk, K.M.**, W. Radwan and A. Haj Kassem. 1992. Survey of seed-borne viruses in barley, lentil and faba bean seeds in Syria. *Arab Journal of Plant Protection*, 10:3-8.
68. **Makkouk, K.M.** and M. Singh. 1992. Clustering Potiviridae species on the basis of four major traits. *Archives of Virology Supplement* 5:177-182.
69. **Makkouk, K.M.**, O.F. Mamluk and W. Ghulam. 1992. Barley yellow dwarf research at the International Center for Agricultural Research in the Dry Areas (ICARDA). pp. 61-68 *In*: *Barley Yellow Dwarf in West Asia and North Africa*. A. Comeau and K.M. Makkouk (eds.). ICARDA, Aleppo, Syria.

70. Yusuf, A., **K.M. Makkouk**, S.P.S. Beniwal and Y. Semeane. 1992. Survey of barley yellow dwarf virus in small grain cereals in the Ethiopian highlands. pp. 87-90 In A. Comeau and K.M. Makkouk (eds.) Barley Yellow Dwarf in West Asia and North Africa. ICARDA, Aleppo, Syria.
71. **Makkouk, K.M.**, S.G. Kumari and A. Shehade. 1992. Seed transmission of pea seed-borne mosaic virus in *Lathyrus* and *Vicia* forage legume species. Journal of Plant Diseases and Protection 99:561-563.
72. **Makkouk, K.M.**, S.G. Kumari and R. Al-Daoud. 1992. Survey of viruses affecting lentil (*Lens culinaris*) in Syria. Phytopathol. Medit. 31:188-190.
73. Bos, L., M.A.M. Mahir, M. Fortass and **K.M. Makkouk**. 1992. A mild strain of broad bean mottle virus from faba bean (*Vicia faba* L.) in the Sudan. Neth. J. Pl. Path. 98:253-256.
74. **Makkouk, K.M.** and W. Ghulam. 1992. Resistance of barley genotypes with the Yd2 gene to the movement of barley yellow dwarf virus. RACHIS Newsletter 11(1/2): 81-82.
75. Mamluk, O.F., O. Tahhan, R. H. Miller, B. Bayaa, **K.M. Makkouk** and S.B. Hanounik. 1992. A checklist of cereal, food legume and pasture and forage crops diseases and insects in Syria. Arab Journal of Plant Protection, 10: 166-225.
76. **Makkouk, K.M.**, H.T. Hsu and S.G. Kumari. 1993. Detection of three plant viruses by dot-blot and tissue-blot immunoassays using chemiluminescent and chromogenic substrates. J. Phytopathol. 139:97-102
77. Bos, L., M.A.M. Mahir and **K. Makkouk**. 1993. Some properties of an isolate of pea early-browning tobnavirus from faba bean (*Vicia faba* L.) in Libya. Phytopathol. Medit. 32:7-13.
78. **Makkouk, K.M.**, S.G. Kumari and L. Bos. 1993. Pea seed-borne mosaic virus: occurrence in faba bean (*Vicia faba* L.) and lentil (*Lens culinaris* Med.) in West Asia and North Africa, and further information on host range, transmission characteristics, and purification. Neth. J. Pl. Path. 99:115-124.
79. **Makkouk, K.M.** and S.G. Kumari. 1993. Movement of bean yellow mosaic virus in susceptible and resistant faba bean genotypes. FABIS 32:35-38.
80. Katul, L., H. J. Vetten, E. Maiss, **K.M. Makkouk**, D. E. Lesemann and R. Casper. 1993. Characteristics and serology of virus-like particles associated with faba bean necrotic yellows. Ann. Appl. Biol. 123:629-647.
81. Kumari, S.G., **K.M. Makkouk** and I.D. Ismail. 1993. Survey of seed-borne viruses in lentil in Syria and their effect on lentil yield. Arab Journal of Plant Protection, 11: 28-32.
82. Kumari, S.G. and **K.M. Makkouk**. 1993. Evaluation of different ELISA procedures for the detection of pea seed-borne mosaic potyvirus and broad bean stain comovirus in lentil leaf extracts. Arab Journal of Plant Protection, 11: 86-91.
83. **Makkouk, K. M.**, L. Bos, N. M. Horn and B. Srinivasa Rao. 1993. Screening for virus resistance in cool-season legumes. pp. 179-192 In K. B. Singh and M. C. Saxena (eds.) Breeding for Stress Tolerance in Cool-Season Food Legumes. John Wiley & Sons, Chichester, UK.
84. Bos, L. and **K.M. Makkouk**. 1993. Plant viruses as pests of quarantine significance in seed. pp. 133-139. In Quarantine for Seed, S.B. Mathur and H. K. Manandhar (eds). FAO Plant Production and Protection Paper 119. 296 pp.
85. **Makkouk, K.M.** and L. Bos. 1993. Detection of seed-borne viruses in seed. pp 179-184. In Quarantine for Seed, S.B. Mathur and H. K. Manandhar (eds). FAO Plant Production and Protection Paper 119. 296 pp.
86. **Makkouk, K.M.** and S. B. Hanounik. 1993. Major faba bean disease with special emphasis on viral disease. pp 123-137. In: Faba bean Production and Research in China. M.C. Saxena, S. Weigand and L. Li-Juan (eds.). International Center for Agricultural Research in the Dry Areas (ICARDA), Aleppo, Syria.

87. Bos, L. and **K.M. Makkouk**. 1994. Insects in relation to virus epidemiology in cool season legumes. pp. 305-332. In F. Muhelbauer and W. Kaiser (eds.), Expanding the Production and use of Cool Season Legumes. Kluwer Academic Publishers.
88. Kumari, S. G., **K.M. Makkouk** and I. D. Ismail. 1994. Seed transmission and yield loss induced in lentil (*Lens culinaris* Med.) by bean yellow mosaic potyvirus. LENS 21(1): 42-44.
89. Comeau, A., **K.M. Makkouk**, F. Ahmad and C. A. St-Pierre. 1994. Bread wheat X *Agroticum* crosses as a source of immunity and resistance to the PAV strain of of barley yellow dwarf luteovirus. Agronomie 2: 153-160.
90. **Makkouk, K.M.** and A. Comeau. 1994. Evaluation of various methods for the detection of barley yellow dwarf luteovirus by the tissue-blot immunoassay and its use for BYDV detection in cereals inoculated at different growth stages. European J. Pl. Path. 100:71-80.
91. **Makkouk, K.M.**, A. Comeau and W. Ghulam. 1994. Resistance to barley yellow dwarf luteovirus in *Aegilops* species. Can. J. Plant Science 74(3): 631-634.
92. **Makkouk, K.M.** 1994. Viruses and virus diseases of cool season food legumes in West Asia and North Africa. IPA Journal for Agri. Research. 4(1): 98-115.
93. **Makkouk, K.M.** and S. G. Kumari. 1993. Production of antisera for sensitive detection of two cereal viruses by different ELISA variants. RACHIS 12(1/2):24-27.
94. **Makkouk, K.M.**, A. Comeau and C. A. St-Pierre. 1994. Screening for barley yellow dwarf luteovirus resistance in barley on the basis of virus movement. J. Phytopathol. 141: 165-172.
95. Lister, R. M., A. E. Aboul-Ata, Y. El-Dawoudi, D. Marshall, **K.M. Makkouk**, M. M. Satour and E. Ghanim. 1994. Serotyping of barley yellow dwarf virus isolates from Egypt. Phytopathol. Medit. 152-157.
96. **Makkouk, K.M.**, L. Rizkallah, M. Madkour, M. El-Sherbeiny, S. G. Kumari, A.W. Amriti and M. B. Solh. 1994. Survey of faba bean (*Vicia faba* L.) for viruses in Egypt. Phytopathologia Mediterranea 33:207-211.
97. Mouhanna, A. M., **K.M. Makkouk** and I. D. Ismail. 1994. Survey of virus disease of wild and cultivated legumes in the coastal region of Syria. Arab Journal of Plant Protection, 12: 12-19.
98. Mouhanna, A. M., **K.M. Makkouk** and I. D. Ismail. 1994. Preliminary screening of lentil genotypes for resistance to faba bean necrotic yellows (FBNYV). LENS 21(2): 41-43.
99. **Makkouk, K.M.** and S. G. Kumari. 1995. Transmission of broad bean stain comovirus and broad bean mottle bromovirus by weevils in Syria. Journal of Plant Disease and Protection 102(2):136-139.
100. Kumari, S. G. and **K.M. Makkouk**. 1995. Variability among twenty lentil genotypes in seed transmission rated and yield loss induced by pea seed-borne mosaic potyvirus infection. Phytopathologia Mediterranea 34: 129-132.
101. Franz, A., **K.M. Makkouk** and H. J. Vetten. 1995. Faba bean necrotic yellows virus naturally infects *Phaseolus* Bean and cowpea in the coastal area of Syria. J. Phytopathology 143: 319-320.
102. **Makkouk, K.M.** and S. G. Kumari. 1995. Screening and selection of faba bean (*Vicia faba* L.) germplasm for resistance to bean yellow mosaic potyvirus. Journal of Plant Disease and Protection 102(5): 461-466.
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