

**Yechezkel Mualem**  
**List of Publications**

**Theses**

1. The Form of the interface in steady flow in a stratified porous medium (Hebrew). Thesis for M.Sc., Technion, Israel Institute of Technology, Haifa, Israel, 1970.
2. Models of hysteresis and the prediction of the hydraulic conductivity of unsaturated porous media (Hebrew). Thesis for D.Sc., Technion, Israel Institute of Technology, Haifa, Israel, 1974.

**Publications in Reviewed International Journals and Books**

3. Mualem, Y. Interface refraction at the boundary between two porous media. Water Resources Research Vol. 9, No. 2, pp.409-414, 1973.
4. Mualem, Y. Modified approach to capillary hysteresis based on a similarity hypothesis. Water Resources Research Vol. 9, No. 4, pp. 1324-1331, 1973.
5. Mualem, Y. A conceptual model of hysteresis. Water Resources Research Vol. 10, No. 3, pp. 514-520, 1974.
6. Mualem, Y. and J. Bear. The shape of the interface in steady flow in a stratified aquifer. Water Resources Research Vol. 10, No. 6, pp. 1207-1215, 1974.
7. Mualem, Y. and G. Dagan. A dependent domain model of capillary hysteresis. Water Resources Research Vol. 11, No. 3, pp. 452-460, 1975.
8. Mualem, Y. A new model for predicting the hydraulic conductivity of unsaturated porous media. Water Resources Research Vol. 12, No. 3, pp. 513-522, 1976.
9. Mualem, Y. Hysteretical models for prediction of the hydraulic conductivity of unsaturated porous media. Water Resources Research Vol. 12, No. 6, pp. 1248-1254, 1976.
10. Mualem, Y. Extension of the similarity hypothesis used for modeling soil characteristics. Water Resources Research Vol. 13, No. 4, pp. 773-780, 1977.
11. Mualem, Y. and J. Bear. Reply to comments by Collins, M.A. and L.W. Gelhar on paper: The shape of the interface in a steady flow in a stratified aquifer. Water Resources Research Vol. 13, No. 2, pp. 489-490, 1977.
12. Mualem, Y. and J. Bear. Steady phreatic flow over a sloping semi-pervious layer. Water Resources Research Vol. 14, No. 3, pp. 403-408, 1978.

13. Mualem, Y. and H.J. Morel-Seytoux. Analysis of capillary hysteresis model based on a one variable pore distribution function. *Water Resources Research* Vol. 14, No. 4, pp. 605-610, 1978.
14. Mualem, Y. Hydraulic conductivity of unsaturated porous media: generalized macroscopic approach. *Water Resources Research* Vol. 14, No. 2, pp. 325-334, 1978.
15. Mualem, Y. and G. Dagan. Hydraulic conductivity of soils: unified approach to the statistical models. *Soil Sci. Soc. Amer. Journal*. Vol 42, No. 3, pp. 392-395, 1978.
16. Mualem, Y. Correction of "A dependent domain model of capillary hysteresis". *Water Resources Research* Vol. 14, No. 4, pp. 704, 1978.
17. Mualem, Y. and H.J. Morel-Seytoux. Capillary pressure; *The Encyclopedia of Soil Science, Part 1: Physics, Chemistry, Biology, Fertility, and Technology*, Edited by R.W. Fairbridge and C.H. Finkle, Jr., pp. 49-61, 1979.
18. Mualem, Y. and H.J. Morel-Seytoux. Relative permeability. *The Encyclopedia of Soil Science, Part 1: Physics, Chemistry, Biology, Fertility, and Technology*, Edited by R.W. Fairbridge and C.H. Finkle, Jr., pp. 359-368, 1979.
19. Mualem, Y. Theory of universal hysteretical properties of unsaturated porous media, in: H.J. Morel-Seytoux, ed., *Surface and Subsurface Hydrology, Proceedings of the Third International Hydrology Symposium*, Water Resources Publications, Fort Collins, Colorado, pp. 387-399, 1979.
20. Mualem, Y. and E. Bresler. Soil water processes: invited general report, in: H.J. Morel-Seytoux, ed., *Surface and Subsurface Hydrology, Proceedings of the Third International Hydrology Symposium*, Water Resources Publications, Fort Collins, Colorado, pp. 297-313, 1979.
21. Mualem, Y. and E.E. Miller. A hysteresis model based on an explicit domain dependence function. *Soil Sci. Soc. Amer. J.*, Vol. 43, No. 6, pp. 1067-1073, 1980.
22. Mualem, Y. Prediction of the soil boundary wetting curve. *Soil Science* Vol.137, No. 6, pp. 379-390, 1984.
23. Mualem, Y. A modified dependent domain theory of hysteresis. *Soil Science* Vol. 137, No. 5, pp. 283-291, 1984.
24. Mualem, Y. Anisotropy of unsaturated soils. *Soil Sci. Soc. Amer. J.*, Vol. 48, No. 3, pp. 505-509, 1984.
25. Mualem, Y. and A. Klute. A predictor-corrector method for measurement of hydraulic conductivity and membrane conductance. *Soil Sci. Soc. Amer. J.* Vol. 48, No. 5, pp. 993-1000, 1984.

26. Mualem, Y. Hydraulic conductivity of unsaturated soils: Prediction and formulas. Invited review, Chapter 31. Monograph No. 9 of the ASA: Methods of Soil Analysis, Part 1, Edited by A. Klute. pp. 797-823, 1986.
27. Mualem, Y. Soil physics. Invited review, Chapter in the Encyclopedia of Agriculture (Hebrew) Edited by Y. Arnon, pp. 409-436, 1986.
28. Mualem, Y. and S. Assouline. Mathematical model for rain-drop distribution and rainfall kinetic energy. Transactions of the ASAE Vol. 29(2): 494-500, 1986.
29. Assouline, S. and Y. Mualem. The similarity of regional rainfall: a dimensionless model of drop size distribution. Transactions of the ASAE Vol. 32(4):1216-1222, 1989.
30. Mualem, Y. and S. Assouline. Modeling soil seal as a non-uniform layer. Water Resources Research Vol. 25(19):2101-2108, 1989.
31. Mualem, Y., S. Assouline and H. Rohdenburg. Rainfall induced soil seal. (A) A critical review of observations and models. Invited review, CATENA 17(2):185-203, 1990.
32. Mualem, Y., S. Assouline and H. Rohdenburg. Rainfall induced soil seal. (B) Application of a new model to saturated soils. CATENA 17(2):205-218, 1990.
33. Mualem, Y., S. Assouline and H. Rohdenburg. Rainfall induced soil seal. (C) A dynamic model with kinetic energy instead of cumulative rainfall as independent variable. CATENA 17(3):205-218, 1990.
34. Mualem, Y. and S. Assouline. Modeling rainfall runoff relationship for bare soils affected by surface sealing. CATENA Supplement 19:91-99, 1991.
35. Mualem, Y. and S.P. Friedman. Theoretical prediction of electrical conductivity in saturated and unsaturated soil. Water Resour. Res. 27(10):2771-2777, 1991.
36. Mualem, Y. and S. Assouline. Flow processes in sealing soils: Conceptions and solutions. Invited review, Advances in Soil Sci., Soil Crusting: Chemical and Physical Processes, Edited by Sumner, M.E. and B.A. Stewart, Lewis Publishers, 123-150, 1992.
37. Mualem, Y. and S. Assouline. Effect of rainfall induced soil seal on soil water regime: Wetting processes. Water Resour. Res. 29:1651-1659, 1993.
38. Friedman, S.P. and Y. Mualem. Diffusion of fertilizers from controlled release sources, uniformly distributed in soil. Fertilizer Research 39:19-30, 1994.

39. Mualem, Y. and S. Assouline. Soil sealing infiltration and runoff, in *Runoff, Infiltration and Subsurface Flow of Water in Arid and Semi-Arid Regions*. Edited by Issar, A.S. and S.D. Resnick, pp. 131-176, 1996.
40. Assouline, S. and Y. Mualem. Modeling the dynamics of seal formation and its effect on infiltration as related to soil and rainfall characteristics. *Water Resour. Res.* 33(7):1527-1536, 1997.
41. Friedman, S.P. and Y. Mualem. Mobility of herbicide microcapsules in saturated granular media. *Transport in Porous Media* 36:121-130, 1999.
42. Assouline, S. and Y. Mualem. Modeling the dynamics of soil seal formation. Analysis of the effects of soil and rainfall properties. *Water Resour. Res.* 36(8):2341-2349, 2000.
43. Assouline, S. and Y. Mualem. Soil seal formation and its effect on infiltration. Heterogeneous versus homogeneous seal approximation. *Water Resour. Res.* 37(2):297-306, 2001.
44. Assouline, S. and Y. Mualem. Infiltration during soil sealing: The effect of areal heterogeneity of soil hydraulic properties. *Water Resour. Res.* 38(12): 1286-1293, 2002.
45. Assouline, S. and Y. Mualem. Effect of rainfall induced soil seal on the soil water regime: Drying interval and subsequent wetting. *Transport in Porous Media* 53:75-94, 2003.
46. Assouline, S. and Y. Mualem. Runoff from heterogeneous small bare catchments during soil surface sealing. *Water Resour. Res.* 42, W12405, doi:10.1029/2005WR004592, 2006.
47. Mualem, Y. and A. Beriozkin. Application of the "proportionate partitioning" method suggested by Poulovassilis and Kargas (2000) for determination of the domain density distribution function. *Transport in Porous Media* pp: 1573-1634, 2007.
48. Mualem, Y. and H.J. Morel-Seytoux. Capillary pressure. Chapter in the *Encyclopedia of Soil Science*, Edited by W. Chesworth, Springer, Dordrecht, The Netherlands, pp. 81-91, 2008.
49. Mualem, Y. and H.J. Morel-Seytoux. Permeability. Chapter in the *Encyclopedia of Soil Science*, Edited by W. Chesworth, Springer, Dordrecht, The Netherlands, pp. 531-538, 2008.
50. Segal, E., T. Kushnir, Y. Mualem, and U. Shani. Micro-sensing of water dynamics and roots distribution in sandy soils. *Vadose Zone J.* 7:1018-1026, 2008.
51. Segal, E., T. Kushnir, Y. Mualem, and U. Shani. Water uptake and hydraulics of the root hair rhizosphere. *Vadose Zone J.* 7:1027-1034, 2008.

52. Mualem Y., and A. Beriozkin. Letter to Editor: Reply to Comments on “Application of the ‘Proportionate Partitioning’ Method Suggested by Poulouvasilis and Kargas (2000) for Determination of the Domain Density Distribution Function. By Mualem and Beriozkin (2008)”. *Transport in Porous Media*, DOI 10.1007/s11242-008-9237-5, 4p, May, 2008.
53. Mualem, Y., and A. Beriozkin, General Scaling Rules of the Hysteretic Water Retention Function Based on Mualem's Domain Theory. *The European Journal of Soil Science*, 60(4): 652-661, 2009.
54. Mualem, Y., and A. Beriozkin, Letter to Editor: Response to Parlange et. al. *The European Journal of Soil Science*, 61(6): 1114-1117, 2010.
55. Cohen, M., and Y. Mualem, Steady convective flow in an unsaturated state dependent anisotropic soil profile: Analysis of the affected zone from a contaminating point source. *Journal of Hydrology*, 396: 12- 23, 2011.

#### Papers in Technical Journals

56. Mualem, Y. and Y. Voscovoinik. Automatic irrigation systems and the use of tensiometers for control and operation. (Hebrew) *Hassade* pp. 153-162. 1987.
57. Mualem, Y. and Y. Voscovoinik. Automatic irrigation systems. (I) Available types in Israel and the benefits of applying tensiometer readout. Invited review, *Water Irrigation Review*, Vol. 9(3):22-25, 1989.
58. Mualem, Y. and Y. Voscovoinik. Automatic irrigation systems. (II). Field test of irrigation by tensiometers and the prospect for improvement. *Water Irrigation Review* Vol. 9(4):15-18, 1990.
59. Mualem, Y. The use of tensiometer readout for irrigation-success and failure. *Proc. 5th International Conference on Irrigation*, Tel-Aviv, Israel, pp. 119-132, 1990.
60. Tripler, E. Y. Mualem, A. Ben-Gal, Zehava Yehuda and U. Shani, Date Palm (Medjool) response to salt and excess boron. (in press) 2009.
61. Mualem, Y. Soil hydraulic properties - Catalogue of soil characteristics. *Catena Verlag*, Germany (in press).

#### Papers presented in symposia or professional meetings

1. Mualem, Y. The distribution of the non-wetting fluid injected in saturated soil and the applicability of a constant-saturation boundary condition. The annual meeting of the Soil Sci. Soc. of Am., Los Angeles, California, 1977.
2. Mualem, Y. and A. Klute. Measurement of the unsaturated hydraulic conductivity: A predictor-corrector method. The annual meeting of the Soil Sci. Soc. of Am., Fort Collins, Colorado, 1979.
3. Mualem, Y. Water retention and flow in the unsaturated zone. Invited paper presented at the Symposium on "Behavior of pollutants in unsaturated zones", IUPAC, IAHS, Bet Dagan, Israel, March 1983.
4. Mualem, Y. Modeling the soil water hysteresis. Invited paper presented at the Symposium on "Analysis of Nonlinear Transport Processes in Soils", European Geophys. Soc. Tenth Annual Meeting, The Catholic Univ. of Louvain-la-Neuve, Belgium, 1984.
5. Mualem, Y., A. Marcus, C.S. Helling, N. Lahav, S. Friedman and N. Aharonson. Slow release formulation of pesticides micro-capsules. Presented at the FAO/IAEA Seminar on Research and Development of Controlled-Release for Agrochemicals Using Isotopes. Vienna, July 1-5, 1985.
6. Mualem, Y. Modeling the effect of soil crust on the rainfall-infiltration runoff relationship. International Meeting on Degradation of the Arid Zones in the Mediterranean Area, Madrid, Spain, 1987.
7. Mualem, Y. and S. Assouline. Characteristics of the soil crust: A critical analysis of the "Skin Theory". Technical report. AID-CDR Res. Project, 05-064. Presented at the Annual Meeting of the Spanish Society of Irrigation and Drainage, Malaga, Spain. 27 p., 1987.
8. Mualem, Y. and S. Assouline. Conceptual modeling of soil sealing and its effects on ponding time and soil water processes. The Heinrich Rohdenburg Memorial Symposium on Theory and Simulation of Infiltration Overland Flow Erosion, and Deposition Processes and Their Relevance to Landscape Evolution, Braunschweig, 1989.
9. Mualem, Y. Hysteresis Phenomenae. Invited presentation, International Workshop on Mathematical Flow and Transport through Porous Media, Irsee, W. Germany, May, 1989.
10. Mualem, Y. Modeling the Hydraulic Conductivity of Unsaturated Soils. Invited presentation, International Workshop on Indirect Methods for Estimating the Hydraulic Properties of Unsaturated Soils, Riverside, California, U.S.A., October, 1989.
11. Mualem, Y. Variation of the Anisotropy Tensor as a Function of Water Content. International Workshop on Indirect Methods for Estimating the Hydraulic Properties of Unsaturated Soils. Riverside, California, U.S.A., October, 1989.

12. Mualem, Y. Characterization of regional rainfall and prediction of its kinetic energy. Workshop on Rainfall, Surface Sealing and Soil-Water Processes. Pushchino, U.S.S.R., October, 1990.
13. Mualem, Y. Surface sealing: Observation and models. Workshop on Rainfall, Surface Sealing and Soil-Water Processes, Moscow, U.S.S.R., October, 1990.
14. Mualem, Y. Models, verification and prediction of soil sealing. International Symposium on Soil Crusting: Chemical and Physical Processes, Athens, Georgia, U.S.A., May-June, 1991.
15. Mualem, Y. Novel topics in soil physics and the evolution of new models of soil surface sealing. Israeli-Czechoslovak Workshop on "Soil and Ground Water Field Hydrology and Hydraulics", Czech Technical University, Prague, Sept., 1991.
16. Mualem, Y. Characterization of regional rainfall and its kinetic energy. Joint International Symposium on Theory in Geomorphology, International Geographical Union, Commission on Measurement, Theory and Application in Geomorphology (COMTAG), Universities of Leeds and St. Andrews, Sept. 19-27, 1991.
17. Mualem, Y. and S. Assouline. Wetting processes in sealed soil profile. International Symposium on Farm Land Erosion in Temperate Plains Environment and Hills. Saint-Cloud, Paris, May 25-29, 1992.
18. Mualem, Y. Hydraulics of sealed soil. International Congress on Agro-Ecosystem Modeling. Braunschweig, October 5-9, 1992.
19. Mualem, Y. and S.P. Friedman. Transport of herbicide microcapsules in saturated granular medium. International Symposium on Colloids in the Aquatic Environment. University College of London, September 7-9, 1992.
20. Mualem, Y. and S. Assouline. Hydraulics of sealed soil surfaces: Wetting and drying processes. Jan De Ploey Memorial Symposium on Experimental Geomorphology and Landscape Ecosystem Change. Leuven, Belgium, March 20-26, 1993.
21. Friedman, S.P. and Y. Mualem. Diffusion of fertilizers out of controlled release sources uniformly distributed in soil. Dahlia Greidinger Memorial International Workshop on Controlled/Slow Release Fertilizers, Haifa, Israel, March 1993.
22. Mualem, Y. Dynamics of sealed surface wetting as related to regional rainfall characteristics. Third International Geomorphology Conference, Ontario, Canada, August 23-28, 1993.

23. Mualem, Y. Healing in the social structure of ancient Israel. United Congress of French and Spanish Healers and Magnetisors, Najac, France, June 18-19, 1994.
24. Mualem, Y. and G. Bernshtein. On the feasibility of using a Gamma attenuation system for soil seal studies. 15th World Congress of Soil Science, Acapulco, Mexico, July 10-16, 1994.
25. Mualem, Y. Notes on conventional medicine and healing. French Congress of Healers and Magnetisors. Laurient, France, October, 1994.
26. Mualem, Y. Dynamics of surface sealing of bare soil exposed to rainfall. Conference on Erosion and Land Degradation in the Mediterranean. University of Aveiro, Portugal, June 14-18, 1995.
27. Mualem, Y. A simplified solution for rainwater harvesting in a sandy soil bed. ESSC Meeting on "The Soil as a Strategic Resource: Degradation Processes and Conservation Methods", Teneriffe, Spain, July 11-15, 1995.
28. Mualem, Y. and S. Assouline. Soil Seal Formation as Related to Rainfall and Soil Characteristics. First European Conference and Trade Exposition on Erosion Control, Barcelona, Spain, May 29-31, 1996.
29. Mualem, Y. and S. Assouline. Conceptual Physical Modeling of the Soil Seal Dynamics and Rainfall Infiltration Relationships. ESSC - Second International Congress on Development and Implementation of Soil Conservation Strategies for Sustainable Land Use, Munchen, Germany, Sept. 1-7, 1996.
30. Mualem, Y. and S. Assouline. Effect of spatial variability of the soil hydraulic properties on infiltration during soil sealing. M2 – International Workshop of the I.A.G. IV. International Conference on Geomorphology. Sienna, Italy, August 23-28, 1997.
31. Mualem, Y. and S. Assouline. Effect of rainfall-induced soil seal on soil-water regime. 6<sup>th</sup> International Conference on Agrophysics (for the 21<sup>st</sup> Century to Ensure Quality Production on Sustainable Agriculture). Lublin, Poland, September 15-18, 1997.
32. Mualem, Y. Modeling the hydraulic properties of unsaturated soils. International Workshop on Characterization and Measurement of the Hydraulic Properties of Unsaturated Porous Media. Riverside, California, October 22-24, 1997.
33. Mualem, Y. and S. Assouline. Variability of soil properties and its infiltration effect in sealing soil. 23<sup>rd</sup> General Assembly of the European Geophysical Society – HSCI (4) Special Hydrological Symposia on Sources and Transfer of Water and Sediment in Mediterranean River Basins. Nice, France, April 20-24, 1998.



34. Mualem, Y. and S. Assouline. Invited lecture on interrelationships of soil physical properties as a key for successful prediction of the hydraulic functions and the water regime in soil profiles subjected to structural changes. ISSS Congress, Montpellier, France, August 20-26, 1998.
35. Mualem, Y. and S. Assouline. Dynamics of soil sealing. International Conference on Synergies in Desertification Process in the Mediterranean Region – Mechanism and Early Warning Indicators. Perpignan, France, March 16-19, 1999.
36. Mualem, Y. and S. Assouline. Invited lecture on dynamics of soil sealing – simulation of the relevant soil properties and the rainfall intensity and kinetic energy effect. International Workshop of Soil Physics on Subsoil Compaction and Soil Dynamics – Processes and Environmental Consequences. Kiel, Germany, March 24-26, 1999.
37. Mualem, Y. and S. Assouline. Soil seal formation and its effect on infiltration: Heterogeneous versus homogeneous seal approximation. Annual Meeting of the Soil Sci. Soc. of Am., Salt Lake City, Utah, Oct. 31-Nov. 5, 1999.
38. Mualem, Y. and S. Assouline. Some aspects of soil seal modeling: Approximations and their effect on the predicted soil water regime. International Conference on Sustainable Soil Management for Environmental Protection, Soil Physical Aspects. Florence, Italy, July 2-7, 2001.
39. Mualem, Y. and S. Assouline. Effect of rainfall induced soil seal and heterogeneity of the soil properties on rainfall-infiltration-runoff relationship. International Symposium of Sustainable Use and Management of Soils in Arid and Semi-Arid Regions, Cartagena, Murcia, Sept. 22-26, 2002.
40. Mualem, Y. and S. Assouline. Infiltration-runoff relationship in heterogeneous field with sealing soils. International Symposium on Sustainability of Behesas, Montados and Other Agrosilvo Pastoral Systems. Caceres, Spain, Sept. 21-24, 2003.
41. Mualem, Y. and A. Beriozkin. Soil water hysteresis: Observations on the proportionate partitioning model. International Congress on Changing Sciences for a Changing World: Building Broader Vision, 2003 ASA-CSSA-SSSA Annual Meeting, Denver, Colorado, Nov. 2-6, 2003.
42. Segal, E., T. Kushnir, Y. Mualem and U. Shani. Physical aspects of soil water availability in the root hair region. Rhizosphere Congress, Munich, Germany, 2004.
43. Mualem, Y. Potential models for soil surface sealing in heterogeneous fields – accuracy and simplicity aspects. Meeting on Desertification Indicators in Mediterranean Environments, Almeria, Spain, Jan. 30 – Feb. 6, 2005.

44. Mualem, Y. and A. Beriozkin. Back to tortuosity and correlation factors of Mualem (1976). 18<sup>th</sup> World Congress of Soil Science, Philadelphia, Pennsylvania, USA, July 9-15, 2006.
45. Segal, E., T. Kushnir, Y. Mualem and U. Shani. Water uptake and hydraulics of the root hair rhizosphere. Annual Meeting of the American Society of Plant Biology, Salt-Lake, Utah, 2006.
46. Segal, E., T. Kushnir, Y. Mualem and U. Shani. Water uptake and hydraulics of the root hair rhizosphere. Invited Lecture, Annual Meeting of the American Society of Soil Science, Indianapolis, 2006.
47. Mualem Y. and S. Assouline. The relative significance of soil surface sealing versus areal heterogeneity in small cultivated catchments. 5<sup>th</sup> International Congress of the European Society for Soil Conservation, Palermo, Italy, June 25-30, 2007.
48. Shani, U. E. Tripler and Y. Mualem. Steady state conditions in regularly irrigated soil. ASA-CSSA-SSSA International Annual Meetings, New-Orleans, LA. USA, November 4-8, 2007.
49. Mualem Y., E. Tripler and U. Shani, Long term study of the soil water and solute regime in date palm high resolution weighing lysimeters – Evolution of apparent steady state conditions. International Conference on Desertification (ICOD), Murcia, Spain, September 15-18, 2009.

#### Special Publications and Technical Reports

1. Mualem, Y. and E. Foa. The hydrologic effect of Ayalon project on the Tel Aviv regional aquifer. (Hebrew) Hydrologic Service of Israel, Ministry of Agriculture, Jerusalem, 18 p., 1970.
2. Bear, J. and Y. Mualem. The form of the interface in steady flow in a stratified porous medium. (Hebrew) Technion, Israel Institute of Technology, Haifa, Israel, 155 p., 1970.
3. Mualem, Y. and E. Foa. Analysis of the hydrologic state and recommendation to the recovery of the aquifer, South Sharon region. (Hebrew) Hydrologic Service of Israel, Ministry of Agriculture, Jerusalem, 24 p., 1971.
4. Mualem, Y. Regional hydrologic research in El-Arish area. (Hebrew) Hydrologic Service of Israel, Ministry of Agriculture, Jerusalem, 92 p., 1971.
5. Mualem, Y. Introduction to watershed hydrology - Lecture Notes. (Hebrew) Hydrologic Service of Israel, Jerusalem, 45 p., 1971.
6. Mualem, Y. and G. Dagan. Hysteresis in unsaturated porous media: A critical review and a new simplified approach. Technion, Israel Institute of Technology, Project No. A10-SWC-77, Haifa, Israel, 91 p., 1972.

7. Mualem, Y. Hydraulic properties of unsaturated porous media: A critical review and new models of hysteresis and prediction of the hydraulic conductivity. (Hebrew) Technion, Israel Institute of Technology, Project No. 38/74, Haifa, Israel, 235 p., 1974.
8. Mualem, Y. A catalogue of the hydraulic properties of unsaturated soils, Technion, Israel Institute of Technology, Research Project 442, Haifa, Israel, 100 p., 1976.
9. Mualem, Y. and G. Dagan. Methods of predicting the hydraulic conductivity of unsaturated soils. Technion, Israel Institute of Technology, Research Project No. 442, Haifa, Israel, 78 p., 1976.
10. Mualem, Y. and H.J. Morel-Seytoux. Capillary pressure. Colorado State University, CEP76-77YM-HJM18, 45 p., 1976.
11. Mualem, Y. and J. Bear. Steady phreatic flow over a sloping semipervious layer. Colorado State University, CEP76-77YM-JB57, 20 p., 1976.
12. Mualem, Y. and H.J. Morel-Seytoux. A critical analysis of capillary hysteresis model based on a one variable pore distribution function. Colorado State University, CEP76-77YM-HJM20, 35 p., 1977.
13. Mualem, Y. Theory of universal hysteretical properties of unsaturated porous media. Colorado State University, CEP76-77YM23, 17 p., 1977.
14. Mualem, Y. and H.J. Morel-Seytoux. Relative permeability. Colorado State University, CEP76-77YM-HJM27, 27 p., 1977.
15. Mualem, Y. Extension of the similarity hypothesis used for modeling soil characteristics. Colorado State University, CEP76-77YM30, 31 p., 1977.
16. Mualem, Y. Methods of handling water extraction by roots in numerical solutions of unsaturated flow problems: A critical review, CER76-77YM44, Colorado State University, 42 p., 1977.
17. Mualem, Y. Hysteretical models for prediction of the hydraulic conductivity of unsaturated porous media. Colorado State University CEP76-77YM58, 32 p., 1976.
18. Mualem, Y. Hydraulic conductivity of soils: generalized microscopic approach. Colorado State University, CER77-78YM32, 14 p., 1977.
19. Mualem, Y. Hydraulic conductivity of unsaturated porous media: generalized macroscopic approach. Colorado State University, CEP77-78YM16, 30 p., 1977.

20. Mualem, Y. Comparison between dependent domain models based on explicit and implicit functions of pore water blockage against air entry. Colorado State University, CEP7-78YM42, 26 p., 1978.
21. Mualem, Y. The use of encapsulated  $\text{Fe}(\text{SO}_4)$  and FeEDDHA in peanuts growth chambers. (Hebrew) Short technical report prepared for Israel Chemicals, 1981.
22. Mualem, Y. Suggestions for improvements in water studies. (Hebrew) Faculty of Agriculture, The Hebrew University of Jerusalem, 29 p., 1982.
23. Mualem, Y., N. Lahav, A. Markus, N. Aharonson and C.S. Helling. Slow-release water-borne micro-capsules for incorporation of pesticides into soils. First technical report, BARD research project: 1-82-80, 13 p., 1982.
24. Mualem, Y. and D. Eltahan. Hysteresis effect on soil water movement. (Hebrew) The Hebrew University of Jerusalem, Research project: ENG800845, 151 p., 1983.
25. Mualem, Y., A. Markus, N. Lahav and N. Aharonson. Slow-release water-borne microcapsules for incorporation of pesticides into soils. Final technical report, BARD research project: 1-82-80, 55 p., 1985.
26. Mualem, Y. and S. Friedman. Bioassay tests of trifluralin micro-capsules. The Hebrew University of Jerusalem, Technical report, BARD research project: I-82-80, 37 p., 1985.
27. Mualem, Y. and S. Assouline. A model of rainfall induced soil seal: a study of loess and sandy loam seal properties under saturated conditions. The Hebrew University of Jerusalem. Technical Report. AID-CDR Res. Project 05-064, 30 p., 1988.
28. Mualem, Y. and G. Bernshtein. The feasibility of calibrating a soil seal model using a Gamma attenuation system. The Hebrew University of Jerusalem, GSF project, 51 p., 1992.
29. Mualem, Y. and O. Minis. Operation of the Shafdan infiltration basins using continuous measurements of the soil water content and the matrix head as operative indicators. Mekorot research project 0396544, (Hebrew) December, 2007.
30. Mualem, Y. and E. Tripler. Date palm (Medjool) response to salt and excess Boron. Final report to Chief Scientist Foundation on research project 0396361, (2005-2007), 14P. (Hebrew), March, 2008.
31. Mualem, Y. and O. Minis. The use of continuous measurements, of the soil water content and the matrix head, as operational indicators of the Shafdan Infiltration Basins. Final Report to Mekorot on research project 0396544, 2007-2009, 70p. (Hebrew), May, 2009.

32. Mualem, Y., E. Tripler and Z. Yehuda. The relationship between water economy and production capacity of date palm trees. Report to Chief Scientist Foundation on research project 0398176, (2009), 8P. (Hebrew), July, 2010.