

BIBLIOGRAPHY

Bibliography

- Abbott, J.S.C. (1997) Key issues for irrigated agriculture in Australia. ICID (International Commission on Irrigation and Drainage) Jour, v.46(1) pp.21-36.
- Abiodun, A.A. (1973) Analysis of seepage into groundwater system. Jour. Hydr. Div., ASCE, v.99(7) pp.1203-1208.
- Abrol, I.P. (1977) Exchangeable sodium and soil water behaviour. In Proc. on Indo-Hungarian Sem. Mgt. Salt Affected Soils, Karnal, pp.103-119.
- Abrol, I.P. (1991) Tree based land use for utilizing salt affected soils. Indian Farming, v.41, pp.51-55.
- Abrol, I.P. and Bhumbala, D.R. (1971) Saline and alkali soils in India: their occurrence and management. FAO, World Soil Resources, Report No. 41, pp.42-51.
- Abrol I.P. and Bhumbala, D.R., (1973) Leaching alone does not pay: Apply gypsum in alkali soils. Indian Farming, v.23, pp.13-14.
- Abrol, I.P., Chhabra, R. and Gupta, R.K. (1980) A fresh look at the diagnostic criteria for sodic soils. In: Proc. Int. Symp Salt Affected Soils, Karnal, India, pp.142-147.
- Acar, Y.B., Gale, R.J., Putnam, G.A., Hamed, J., and Wang, R.L. (1990) Electrochemical processing of soils: theory of pH gradient development by diffusion, migration and linear convention. Jour. Env.Sc. and Health, v.25, pp.687-714.
- Agarwal, R.R. and Gupta, R.N. (1968) Saline alkali soils in India. ICAR, Tech. Bull. (Agri. Series) No.15, New Delhi, pp.1-65.
- Agrawal, G.C. (1984) Further studies on Tertiary and Quaternary sequences of South Gujarat with Reference to their structural style and geomorphic expressions. Unpublished Ph.D. Thesis, M.S.Univ.of Baroda, Vadodara, 177p.
- Agrawal, M.C. and Khanna, S.S. (1983) Efficient soil and water management in Haryana. HAU Bull., Hisar, 118p.
- Agrawal, M.C. and Malik, R.K. (1982) Study of water table behaviour in Haryana. In: Proc. 19th annual covention of ISAE, College of Technology and Agricultural Engg. Udaipur, pp.32-43.
- Agriculture Department (1982) Reconnaissance Soil Survey Report of Bharuch, Surat and Valsad Districts. Unpublished report, Gujarat State. 74p.
- Alavi, S.A. (1990) Morphotectonic analysis of South Gujarat landscape. Unpublished Ph.D. thesis, M.S.University of Baroda, Vadodara, 203p.

- Alavi, S.A. and Merh, S.S. (1991) Geomorphic history of South Gujarat highlands. *Indian Jour. of Earth Sciences*, v.18(3-4), pp.170-183.
- Anderson, J.R., Hardy, E.E., Roach, J.T. and Witmer, R.E. (1976) A land use and land cover classification system for use with remote sensor data. *Geol. Survey Professional Paper – 964*, pp.1-27.
- Anonymous, (1958) Kakrapar Weir and Canal Project. V.I Project Report (Revised) PWD Govt. of Bombay. 231p.
- Anonymous, (1978) Report on the Land Irrigability Classification of Kakrapar Command, Irrigation Department, Gujarat State (Unpublished)
- Anonymous, (1990) Annual Report Ministry of Water Resources, Government of India.
- Anonymous, (1991) AGRESCO Report, Agril. Research Station, G A U, Danti.
- Anonymous, (2000) Indo-Dutch Net Work Project, Soil and Water Management Unit, G A U, Navsari, Gujarat.
- APHA (1976) Standard methods for the examination of water and waste water (14th Ed.) Washington, D.C., Amer. Public Health Assoc. 1193p.
- APHA, AWWA and WPCF (1995) Standard methods for the examination of water and waste water, (19th Ed)., American Public Health Association.
- Apshankar, S.G. and Kapre, A.C. (1996) An overview of waterlogging and soil salinity problems in Maharashtra and remedial measures. In: C.V.J. Verma (Eds.), *Waterlogging and Soil Salinity in Irrigated Agriculture* CSSRI, Karnal, pp.31-37.
- Arar, A. (1971) Irrigation and drainage in relation to salinity and waterlogging, In: Arar, I. (Eds.), *Water Resources and Development Services Land and Water Development Division*, pp.88-105.
- Astaraei, A.R. and Chauhan, R.P.S. (1995) Effect of waters varying in mg/ca ratio, SAR and salinity on physico-chemical properties of soil. *Ind. Jour. Soil Sci.*, v.40, pp.19-24.
- Atlas of Hydrogeomorphological Maps of India- Gujarat, Dadra Nagar Haveli and Diu & Daman (1990) Department of Space, Govt. of India.
- Auden, J.B. (1949) Dykes in western India. *Trans. Nat. Inst. of Science, India*, v.3, pp.123-157.
- Ayers, R. S. (1977) Quality of water for irrigation. *Jour. of Irrigation and Drainage Division, ASCE*, v.103 (IR2), pp.135-154.
- Ayers, R.S. and Westcot, D.W. (1976) Water quality for agriculture. *Irrigation and Drainage Paper No. 29*. Food and Agriculture Organization of the United Nations. Rome.

- Ayers, R.S. and Westcot, D.W. (1976) Water quality for agriculture. Irrigation and Drainage, Paper 29, F. A. O., Rome. 105p.
- Ayers, R.S. and Westcot, D.W. (1985) Water quality for agriculture. Irrigation and Drainage Paper 29 (Revised) FAO. Rome, Italy.
- Babu Rao, Subrahmanyam, P. and Dhar, R.L. (2001) Geo-environmental effects of groundwater regime in Andhra Pradesh, India. Jour. of Environmental Geology, v.40(4-5), pp.632-642.
- Back, W. (1960) Origin of hydrochemical facies of groundwater in Atlantic Coastal Plains, In: Proc. 21st Int. Geol. Cong. Copenhagen, part q, pp.87-95.
- Back, W. and Hanshaw, B.B. (1965) Chemical geohydrology. Advances in Hydroscience, v.1, pp.48-109.
- Bandel, V.A., Bruce, J. and Meisinger, J.J. (2000) Basic principles of soil fertility I: Plant Nutrients, FS639, College of Agriculture and Natural Resources, Park.
- Bapat, M.V.(1988) Problems of waterlogging and salinity in the irrigated commands in Gujarat State with A case study of Kakrapar Project. In: Baldev Sahai (Eds.), Remote Sensing in Agriculture, Indian Society of Remote Sensing, Ahmedabad, pp.291-307.
- Bapat, M.V.and Shah, R.C. (1983) Problems of waterlogging and salinity in the irrigated commands in Gujarat State with a case study of Kakrapar Project. In: Seminar on Problems of Waterlogging and Salinity in Irrigated Areas. Ministry of Irrigation, Govt. of India, Krishnarajsagar, pp1-26.
- Barbiero, L, Valles, V., Regeard, A., and Cheverry, C. (2001) Residual alkalinity tracer to estimate the changes induced by forage cultivation in a non-saline irrigated sodic soil. Jour. Agricultural Water Management, v.50, pp.229-241.
- Batta, R.K., Sehgal, J.L. and Choudhary, T.N. (1990) Waterlogging in irrigation commands. All India seminar on Waterlogging and Drainage, Roorke, pp.63-70.
- Bernstein, L. (1964) Salt tolerance of plants. Agric. Info. Bull. Number 283, U.S.D.A.
- Bernstein, L. (1974) Crop growth in wet soils. In: Janvan Schilfgarde (Eds.) Drainage for Agriculture, Agronomy Number 17, pp.39-53.
- Bhatia, K.K.S., Tygi, A. and Sharma, M.K. (1997) Groundwater conductivity modeling using best subset procedure. In: Singhal D. C. et al. (Eds.), Emerging Trends in Hydrology, Roorkee, v.2, pp.41-53.
- Bhatnagar, N.C.C. (1986) Waterlogging and soil salinity in Punjab and Haryana, India. In: the seminar on conjunctive use of surface and groundwater resources, New Delhi, pp.5-28.
- Bhatti, H.M. (1986) Management of irrigation water qualities for crop production. Final Technical Report PL-480. USDA Grant FG-Pa-266/PK-ARS-76. 115p.

- Bhumbala, D.R. and Abrol, I.P. (1972) Is your water suitable for irrigation? *Indian Farming*, v.22(4), pp.15-16.
- Biswas, S.K. (1982) Rift basins in the Western Margin of India and their hydrocarbon prospects. *Bull. Am. Assoc. Pet. Geol.*, v.66(10), pp.1497-1513.
- Biswas, S.K. (1987) Regional tectonic framework, structures and evolution of the western marginal basins of India. *Tectonophysics*, v.135, pp.307-327.
- Black, C.A. (1968) *Soil-plant relationships*. (2nd Ed.), John Wiley & Sons, Inc., New York, 792p.
- Blanford, W.T. (1867) Geology of the Taptee and Lower Narbudda valleys and some adjoining districts. *Mem. Geol. Surv.Ind.*, v.VI, pp.3.
- Bos, M.G. and Nugteren, J. (1978) On irrigation efficiencies. International Institute for Land Reclamation and Improvement, Wageningen, The Netherlands. Publ. 19, p.138
- Bouwer, H., Dedric, A.R. and Jaynes, D.B. (1990) Irrigation management for groundwater quality protection. *Jour. of Irrigation and Drainage System* v.4, pp.375-383.
- Bowler, C. A., (1959) Cation exchange equilibrium in soils affected by sodium salts, *Soil Science*, v.88, pp.32-35.
- Bowonder, B., Ramana, K.V. and Ravi, C. and Srinivas, C. (1987) Land use: waterlogging and irrigation management. *Land use policy*, v.4(3) pp.331-341.
- Bowonder, B. and Ravi, C. (1983) Waterlogging in Siramsagar irrigation project. *International Jour. of Water Resources Development*, v.1(2), pp.157-171.
- Bowonder, B. and Ravi, C. (1984) Waterlogging from irrigation projects. Reports of Environmental Management Centre for Energy and Tech. ASCI, Hyderabad.
- Brady N.C. (1990) *The Nature and Properties of Soils*. (10th Ed.), MacMillan Publ. Comp., New York, 621p.
- Caballero, R., Bustos, A. and Roman, R. (2001) Soil salinity under traditional and improved irrigation schedules in Central Spain. *Soil Science Society of America Jour.*, v.65, pp.1210-1218.
- Chadha, D.K. (1998) Geochemical classification of natural waters. *Bhujal News*, v.13(1&2), pp.431-439.
- Chandra, P.K. and Chowdhary, L.R. (1969) Stratigraphy of Cambay Basin. *Bull. ONGC*, v.6 (2), pp.37-50.
- Chhabra, R. (1996) *Soil salinity and water quality*. Oxford & IBH Publishing Co Pvt Ltd., New Delhi, 284p.

- Chitale, M. A. (1991) Environmental Management in water resources project-Indian experiences of irrigation power project. *Jour. Of Indian Water Resources Society*; v.1(2), pp.56-59.
- Choubey, V.K. (1994) Assessment of waterlogging area in IGNP stage I by remote sensing techniques. Report No. CS (AR) 138, NIH, Roorkee.
- Christiansen, J.E., Olsen, E.C. and Willardson, L.S. (1975) Irrigation water quality evaluation, Irrigation and Drainage Division, ASCE, Utah, 46p.
- Christiansen, J.E., Olsen, E.C. and Willardson, L.S. (1977) Irrigation water quality evaluation. *Jour. of the Irrigation and Drainage Division, ASCE*, v.103(IR2), pp.155-169.
- Coulombs, C.E., Wilding, L.P. and Dixon, J.B. (1996) Overview of vertisols characteristics and impacts on society. *Advances in Agronomy*, Academic Press, v.57, pp.290-375.
- Cruz, J.V. and Silva, M.O. (2000) Groundwater salinisation in Pico Island, Azores, Portugal: Origin and mechanism. *Jour. Env. Geol.*, v.39(10), pp.1181-1189.
- CW&PRS (1952) Calcium Carbonate Content of Soils from Kakrapar Command Area. Annual Report (Technical) pub. No. 18, Ministry of Irrigation and Power. CW&PRS, Poona. pp.145-146.
- CW&PRS (1952) Some Physico-Chemical Properties of Black Cotton Soils and Red Soils of Kakrapar region. Annual Report (Technical) pub. No. 18, Ministry of Irrigation and Power. CW&PRS, Poona. pp.137-138.
- CW&PRS (1954) Some Physico-Chemical Properties of Black Cotton Soils and Red Soils of Kakrapar region. Annual Report (Technical) pub. No. 20, Ministry of Irrigation and Power. CW&PRS, Poona. pp.493-498.
- CW&PRS (1957) Black Cotton Soils and Red Soils of Kakrapar Region. Annual Report (Technical) pub. No. 23, Ministry of Irrigation and Power. CW&PRS, Poona. pp.183-186.
- Daji, J.A. (1996) A text book of Soil Science, (Reviewed by Kadam, J.R. and Patil, N.D.). Media promoters and Publ., Bombay. 308p.
- Dalip, S. and Chawla, D.R. (1946) Suitability of water for irrigation purpose. *Indian Farming*, v.2, pp.133-135.
- Datta, K.K. and Joshi, P.K. (1993) Problems and prospects of co-operatives in managing degraded lands- A case of saline and waterlogged soils. *Economic and Political Weekly*.
- Datta, P.S., Deb, D.L. and Tyagi, S.K. (1998) Assessment of ground water contamination from fertilizers in the Delhi area based on ^{18}O , NO_3 and K^+ composition, *Jour. of Contaminant Hydrology*, v.27(3-4), pp.249-262.
- Davis, S.N. and De Wiest, R.J.M. (1966) *Hydrogeology*. John Wiley and Sons, Inc. New York, 386p.

- Davis, S.N. and De Wiest, R.J.M. (1967) Hydrogeology. (2nd Ed.), Jhon Willey and Sons, Inc., New York, 463p.
- Degens, E.T. and Chilingar, G.V. (1967) Diagenesis of subsurface waters. In G. Larsen & G. V.Chilingar (Eds.), Diagenesis in Sediments, Developments in Sedimentology, Elsevier, London, v.8, pp.477-502.
- District Census Handbook of Surat (1971) Part XII - A & B, Director of Census Operations, Gujarat.
- District Census Handbook of Surat (1981) Part XII - A & B, Director of Census Operations, Gujarat.
- District Census Handbook of Surat (1991) Part XII - A & B, Director of Census Operations, Gujarat.
- District Census Handbook of Valsad (1971) Part XII - A & B, Director of Census Operations, Gujarat.
- District Census Handbook of Valsad (1981) Part XII - A & B, Director of Census Operations, Gujarat.
- District Census Handbook of Valsad (1991) Part XII - A & B, Director of Census Operations, Gujarat.
- Doneen, L.D. (1962) The influence of Crop and Soil on Percolating Waters, Proc. Biannual Conference on Groundwater Recharge.
- Doneen, L.D. (1964) Notes on water quality in agriculture. Water Sci. and Engg. Paper, 4001. University of California. 10p.
- Dougherty, T.C. and Hall, A.W. (1995) Environmental impact assessment of irrigation and drainage projects, FAO irrigation and drainage paper No. 53, FAO, Rome, 85p.
- Eaton, F.M. (1950) Significance of carbonate in irrigation water, Jour. Soil Sci., v.69, pp.123-133.
- Edmond, W.M., Kay, R.L.F. and McCartney R.A. (1985) Origin of saline groundwater in the Carnmenellis granite (cornwall, England): Natural process and reaction during hot dry rock reservoir circulation, Chem. Geol., v.49, pp.287-301.
- El-Ashry, M.T., Schifgarde, J.V. and Schiffman, S. (1985) Salinity pollution from irrigated agriculture, Jour. of Soil and Water Conservation, pp.48-52.
- El-Elgabaly, M.M. (1971) Reclamation and Management of Salt Affected Soils, FAO, Irrigation and Drainage Paper, v.17, pp.50-79.
- DOE, (1991) Evaluation Report on Irrigation Command Area Development Programme Mahi-Kadan Project. Directorate of Evaluation, Govt. of Gujarat, pp.62-76.

- FAO, (1979) Soil survey investigations for irrigation. FAO Soil Bulletin No. 42, FAO, Rome, 188p.
- FAO, (1985) Guidelines: Land evaluation for irrigated agriculture. FAO Soil Bulletin No. 55, FAO, Rome, 225p.
- FAO, (1996) Guidelines for Land-Use Planning. FAO development series no 1. Code 59, Rome, 96p.
- Finney, C.E. (1997) The agriculture benefits of sub-surface drainage on irrigation schemes. International commission on Irrigation and Drainage (ICID) Jour., v.46(1), pp.85-104.
- Framji, K.K. (1973) Review of waterlogging and drainage problems and their solutions in India. International Symposium on Development of Groundwater Resources, Madras, v.4, pp.1-12.
- Framji, K. K., (1973) Review of waterlogging and drainage problems and their solutions in India, Proc. of Int. Sympo. On Development of Groundwater Resources, CSIR, v.4, pp.97-108.
- Freeze, R.A. and Cherry, J.A. (1979) Groundwater, Printice Hall, Englewood cliffs, New York.
- Gadekar, D.R. (1977) Sedimentary structures in the Tertiary rocks of South Gujarat and Their Environmental Significance. Jour. Geol. Soc. Ind., v.18 (10), pp.549-557.
- Gadekar, D.R., Nayak S.D. and Sahai, B. (1981) Some aspects of geomorphic evolution of the Lower Narmada and Mahi Rivers from landsat imagery. Recent Researches in Geology, v.9, pp.32-41.
- Gajja, B.L. and Sharma, V.P. (1994) Impact of conjunctive use of surface and groundwater on tobacco crop in Mahi Right Bank Canal (MRBC) Command area in Kheda district of Gujarat state. The Bihar Jour. of Agri. Mktg., v.11(2) pp.171-177.
- Gajja, B.L., Sharma, V.P. and Prasad, R. (1998) Impact of soil salinity and waterlogging on agricultural system in Ukai-Kakrapar canal command area. Curr. Agric, v.21(1-2), pp.1-22.
- Gajja, B.L., Sharma, V.P. and Prashad R. (1996) Impact of Salinity and Waterlogging on Agricultural Production Systems – A Case Study of KRBC, Gujarat. Division of Technology Evaluation and Transfer, Central Soil Salinity Research Institute (ICAR) Karnal (Haryana)
- Garg, B.K. and Gupta, S.K. (1997) Saline waste lands, environmental and plant growth. Scientific Publishers, Jodhpur, 287p.
- Garg, J.M. and Singhal, H.S.S. (1982) Remedial measures for prevention of waterlogging. In: Proceedings on Identification of Remedial Measures to Mitigate the Adverse Effect of Irrigation, Drainage and Flood Control Projects, ICID, New Delhi, pp.29-37.

- Garg, S.K. (1998) Hydrology and water resources engineering, (20th Ed.), Khanna Publishers, pp.28-119.
- Garrels, R.M. and Christ, C.L. (1965) Solution, minerals and equilibria. Harper and Row, New York . 450p.
- Glover, C.R. (2000) Irrigation water classification systems, Guide A-116, College of Agriculture and Home Economics, New Mexico State University.
- Gold, A.J., Saiping, T., August, P.V. and Wright, W.R. (1989) Using Soil Surveys to Delineate Stratified Drift Deposits for Groundwater Protection. Jour. Soil Water Conservation, v.44, pp.232 – 234.
- Goreham, E. (1955) On the acidity and salinity of rain: Geochim. Et Cosmochim Acta, v.7. pp.231-239.
- Gregorich, E.G., Anger, D.A., Campbell, C.A., Carter, M.R., Drury, C.F., Ellert, B. H., Gronevelt, P.H., Holmstrom, D.A., Monreal, C.M., Rees, H.W., Voroney, R.P. and Vyn, T.J. (1995) Changes in soil organic matter. In: D.F. Acton and L.J. Gregorich (Eds.), The Health of Our Soils, Agriculture and Agri Food, Canada. Publication No. 1906/E.
- Gupta, I.C. (1972) Note on the relationship between saturated soil paste and 1:2 soil water suspension. Indian Jour. Agric. Sci, v.42, pp.962-963.
- Gupta, I.C. (1979) Use of saline water in agriculture in arid and semi-arid zone of India. Oxford & IBH Publishing Co., New Delhi, 210p.
- Gupta, P.K. and Shah, A.R. (1984) Physico-chemical and mineralogical studies on soils of Kashmir, pp.311-315.
- Gupta, S.K. (1983) Salinisation-desalinisation patterns with poor quality groundwater and management practices for crop production, National Seminar on Groundwater Development-A perspective for the year 2000, v.1, 484p.
- Gupta, S.K. (1985) Leaching of saline soils through rainfall. Jour. of Indian Soc. of Soil Sci, v.33, pp.128-136.
- Gupta, S.K. (1987) Canal irrigation induced groundwater table rise and its amelioration. The Geographer, v.34(1), pp.34-44.
- Gupta, S.K. and Gupta, I.C. (1997a) Management of saline soils and waters. Scientific Publ., Jodhpur, 268p.
- Gupta, S.K. and Gupta, I.C. (1997b) Crop production in waterlogged saline soils, Scientific Publ., Jodhpur, 270p.
- Gupta, S.K. and Khosla, B.K. (1996) Salinity control in the root zone of irrigated soils. In: C.V.J. Verma (Eds.), Waterlogging and Soil Salinity in Irrigated Agriculture, CSSRI, Karnal, pp.163-180.

- Gupta, S.K. and Pandey, R.N., (1979) Prediction of salinisation-desalinisation behaviour in soils of Western Rajasthan, *Jour. of Curr. Agric.*, v.3(1-2), pp.31-35.
- Gupta, S.K. and Tygi, N.K. (Eds.) (1996) Waterlogging and soil salinity in Ukai-Kakrapar Command Area – Causes and Remedial Measures. CSSRI, Karnal, 89p.
- Gupta, S.K., Tyagi, N.K., Khandelwal, M.K., Sethi, M. and Kumar, R. (1996) Diagnostic analysis of waterlogging and salinity Ukai-Kakrapar irrigation project, Final Report, CSSRI, Karnal.
- GWRDC, (1985) Report on Geohydrological Investigation Carried out in Ukai-Kakrapar Command Area Towards Integrated Development of Surface and Groundwater Resources. Gujarat Water Resources Development Corporation (GWRDC) Gandhinagar. 89p.
- Hammad, H.Y. (1959) Seepage losses from irrigation canals. *Jour. Engg. Mech. Div., ASCE*, v.96(6), pp.234-239.
- Handa, B.K. (1965) Modified Hill-Piper diagram for representing water analysis data. *Current Science*, v.34, pp.313-314.
- Handa, B.K. (1983) Hydrochemical zones of India. *Int. Conf. on Groundwater and Man*, v.2, pp.109-120.
- Harth, H., (1965) Zum problem der anreicherung der Gewasser mit Kaliumsalzen und 40K. *Disch. Gewasserk. Mitt. Sonderh.*, pp.4-7.
- Hasimi Fakhri, Al and Vashi N.M. (1988) Ancient Beach Rocks of South Gujarat and Northern Maharashtra. In *National Seminar on Recent Quaternary Studies in India*. Dept. of Geology, M. S. University of Baroda, Vadodara, pp.367-376.
- Healy, R.W. and Cook, P.G. (2002) Using groundwater levels to estimate recharge. *Hydrogeology Jour.*, v.10(1), pp.91-109.
- Hem, J.D. (1959) Study and interpretation of the chemical characteristics of natural water. U.S. Geological Survey Water Supply Paper No. 1473, Washington D.C., 269p.
- Hem, J.D. (1970) Study and interpretation of the chemical characteristics of natural waters, U.S. Geol. Surv. water supply paper No. 1473, 363p.
- Hem, J.D. (1970) Study and interpretation of the Chemical Characteristics of Natural Water. Geological Survey Water – Supply paper 1473, U.S.D.I, Washington, 269p.
- Hem, J.D. (1991) Study and interpretation of the chemical characteristics of natural waters. U.S. Geol. Surv. Water Supply Paper No. 2254. 388p.
- Hesse, P.R. (1994) A text book of Soil Chemical Analysis, CBS Publ., and Distributor, New Delhi, 520p.

- Hoffman, G.J. (1997) Water quality criteria for irrigation. EC 97 - 782, University of Nebraska, Institute of Agriculture and Natural Resources, Netherland, pp.1-10.
- Hoffman, G.J. (1986) Guidelines for reclamation of salt affected soils. Applied Agricultural Research, v.1, pp.65-72.
- Hooja, R. (1993) The technical interaction with international panel of experts on subsurface drainage design criteria for Rajad project. Jour. Irrigation and Power, C.B.I.P., New Delhi, pp.85-98.
- Hopkins, D.G. and Richardson, J.L. (1999) Detaching a salinity plume in an unconfined sandy aquifers and assessing secondary soil salinisation using electromagnetic induction techniques, North Dakota, U.S.A. Hydrology, v.7, pp.380-392.
- Horn, M.K., Adams, J.A. (1966) Computer derived geochemical balances and element abundance, Geochim. Cosmochim. Acta, v.30, pp.279-297.
- Howard, A.D. (1967) Drainage analysis in geologic interpretation, A Summation. Am. Asso. Pet. Geol. Bull, v.51(11), pp. 2246-2259.
- His, C.F. and Chao, C. (1962) Acta Pedol. Sin, v.10, pp.235-238. In: Hesse, P. R., (ed) A textbook of soil chemical analysis. CBS Publ., and Distributor, New Delhi, 520 p.
- I.C.M.R. (1975) Manual of standards of quality for drinking water supplies (2nd) Indian, Council of Medical Research, New Delhi, Special Report Series, no. 44.
- Indian Standard Institution (1979) Methods of sampling and test (Physical and Chemical) for water in industry, IS: 3025-1964. 15p.
- Indian Standards Institution (1983) Characteristics of drinking water: IS : 10500, New Delhi, pp.6-11.
- Jackson, M.L. (1973) Soil chemical analysis, Prentice-Hall of India, New Delhi. 288p.
- Jain, C.K. and Sharma, M.K. (2000) Regression analysis of groundwater quality data of Sagar district, Madhya Pradesh. Indian Jour. Environmental Health, v.42(4), pp.159-168
- Jain, C.K., Bhatia, K.K.S. and Kumar, V. (2000) Groundwater quality data in Sagar District, Madhya Pradesh. Indian Jour. Environ Helth, v.42(4), pp.151-158.
- Jain, P.K. and Chaurasia, L.P. (1998) Irrigation suitability of surface and sub-surface water in Upper Urmil River Basin, Chhatarpur District, Central India. Jour. of Indian Water Resources Society, v.18(4), pp.57-62.
- Joshi, P.K. and Agnihotri, A.K. (1984) An assessment of the adverse effects of canal irrigation in India. Jour. Agric. Eco, v.39(3), pp.528-536.
- Jottun, L.S. (1982) Geological and geomorphological studies on the west coast between Tithal and Dahanu, with special reference to the recent sedimentation

- processes and evaluation of terrain attributes. Unpublished Ph.D. Thesis, M.S.University of Baroda, Vadodara, 511p.
- Jottun, L.S., Vashi, N.M., Hardas, M.G. and Merh, S.S. (1982) Geomorphic studies on the coastal plains of South Gujarat. Unpublished U.G.C. Report. M.S.University of Baroda. pp.286-313.
- Kaila, K.L., Krishna, V.G., and Mall, D.M. (1981) Crustal structure along Mehmedabad - Billimora Profile in the Cambay Basin, India, From Deep Seismic Soundings. *Tectonophysics*, v.76, pp.99-130.
- Kalayanasundaram, N.K., and Patel, R.G. (1995) Soils of Gujarat: their genetic and edaphic characteristics. In: *Proc. of National Seminar on Recent Res. In Geology of Western India*, Dept. of Geology, M. S. Univ. of Baroda, pp.189-203.
- Kanzaria, M.V. and Patel, M.S. (1985) *Soils of Gujarat and Their Management, Soils of India and Their Management*, FAI, New Delhi, pp.103-129.
- Karanth, K.R. (1987) *Groundwater assessment, development and management*. Tata McGraw-Hill Publ. Co. Ltd., New Delhi.
- Kass, W. (1965) Sind Hategrade entbehrrich? Eine Anregung Ditsch, Gewasserk, Mit, 9(3) Coblens, Rhein. pp.63-64.
- Keerthisecl, K., Kapoor, S.L., Suresha, A. and Prakash, T.R. (2001) Salinity intrusion from tidal recharge and its impact on groundwater quality in Goa State. *Jour. Geol. Soc. of India*, v.57, pp.257-262.
- Kelley, W.P. (1941) Permissible composition of irrigation water. ASCE Paper No. 2114, *Transaction*, v.106, pp.22-26.
- Kelly, W.P. (1941) Permissible composition and concentration of irrigation water. *Trans. Am. Soc. Civil Engr*, v.106, pp.846-861.
- Kelly, W.P., Brown, S.M. and Liebig, F. (1940) Chemical effects of saline irrigation water on soils, *Soil Sci.*, v.49, pp.95-107.
- Khare, K.C. and Inamdar, G.V. (1996) Some aspects of waterlogging and salinity with special reference to localized irrigation. In: C.V.J. Verma (Eds.), *Waterlogging and Soil Salinity in Irrigated Agriculture*, CSSRI, Karnal, pp.61-65.
- Khoshoo, T.N., and Deekshatulu, B.L., (1992) *Land and soils*. Indian National Science Academy, Har-Anad Publications, New Delhi, 268p.
- Klingebiel, A.A. & Montgomery, P.H. (1961) *Land capability classification*. USDA Agricultural Handbook 210, Washington, DC: US Government Printing Office. 21 pp.S21-A51.
- Klocke, N.M. and Hergert, G.W. (1990) How soil holds water. G90-964, Field rops G-21, University of Nebraska (www.ianr.unl.edu/pubs/FieldCrops/g964.htm).

- Klut-Olszewski (1945) *Untersuchung des wassers an Ort und Stelle, seine Beurteilung und Aufbereitung*, 9th ed., Berlin, Springer. 281p.
- Kovda, V.A. (1973) *Irrigation, Drainage and Salinity- An International source book*, FAO, UNESCO, Rome, pp.77-79.
- Kovda, V.A., van den Berg, C. and Hagan, R.M. (1973) *Irrigation, drainage and salinity. An International Source Book*, FAO/UNESCO, Hutchinson and Co., London.
- Kulkarni, H. and Deolankar, S.B. (1995) Hydrogeological mapping in the Deccan basalts – An appraisal. *Jour. Geological Society of India*, v.46, pp.345-352.
- Kumar, A. and Arya, K.C. (1972) Research needs for combating waterlogging. In CBI&P Symposium on Waterlogging - Causes and Measures for its Prevention, Publ. No. 118, v.2, pp.160-178.
- Kumar, P., Gupta, S.K. and Shukla, K.N. (1996) *Waterlogging and Soil Salinity in Ukai-Kakrapar Command Area – Causes and Remedial Measures*, CSSRI, Karnal, pp.49-67.
- Mackenzie, D.P. and Sclater, J.G. (1971) The evolution of the Indian Ocean since the Late Cretaceous: *Royal Astron. Soc. Geophysics. Jour*, v.25, pp.437-528.
- Mahodaya, M.M., Bhandari, B.J. and Choudhary, K.K. (1984) Theme paper on the problem of waterlogging in black cotton soils in Tawa Command Area, Madhya Pradesh and recommendation for prevented and remedial measures. In: *Seminar on Problems of Waterlogging and Salinity in Irrigated Areas*, Krishnarajsagar, Ministry of India, pp.97-113.
- Marlet, S., Barbiero, L. and Valles, V. (1998) Soil alkalisation and irrigation in the Sahelian zone of Niger II: Agronomic Consequences of Alkalinity and Sodicity, *Arid Soil Research and Rehabilitation*, v.12, pp.139-152.
- Mason, B. (1952) *Principles of geochemistry*, Jhon Wiley & Sons, New York.
- Mathur, L.P., Rao, K.L.N. and Chaube, A.N. (1968) Tectonic framework of Cambay Basin, India. *Bull. ONGC*, v.5(1), pp.7-28.
- Matthess, G. (1976) Effects of man's activities on groundwater quality. *Hydrol. Sci. Bull.*, 21, pp.617-628.
- Matthess, G. (1982) *The properties of groundwater*. Jhon Willey and Sons, Inc., New York, 406p.
- Mc. Kee, J.E. and Bacon, V.W. (1953) An analysis of water quality criteria. *Proc. of A.S.C.E., Sanitary Engineering*, pp.35-43.
- McLaren, R.G., and Cameron, K.C. (1990) *Soil science: Auckland*. Oxford University Press, New York, pp.117-122.

- Mehta, K.M., Gupta, V.K. and Nathwani, G.P. (1968) Survey of depth and quality of underground waters in Chambal area as affected by canal irrigation, Ind. Soc. Soil Sci., v.16, 285 p.
- Mehta, S., Fryer, A.E. and Banner, J.L. (2000) Controls all the regional-scale salinisation of the Ogallala aquifers Southern High plains, Texas, U.S.A., Applied Geochemistry, v.15, pp.849-864.
- Merh, S.S. (1986) Evolution of Gujarat Coastline. Professor S. Mukherjee Memorial Lecture, M.G.Science Institute, Ahmedabad.
- Miller, R.W. and Donahue, R.L. (1997) Soils in Our Environment (7th Ed.) Prentice-Hall of India, New Delhi, 649p.
- Miller, R.W. and Donahue, R.L. (1992) Soils: An introduction to soils and plant growth, Prentice Hall of India Pvt. Ltd., New Delhi.
- Minhas, P.S. and Singh, K.N. (1996) Crop production in saline and waterlogged soils. In: C.V.J. Verma (Eds.), Waterlogging and Soil Salinity in Irrigated Agriculture, CSSRI, Karnal, pp.248-264.
- Mistry, J.F., and Purohit, M.U., (1982) Environmental impact assessment of Ukai-Kakrapar Project, Gujarat Stare, India. Indian Jour. of Power and River Valley Development No. XXXII, 8, pp.133 – 150.
- Mondal, M.K, Bhuiyan, S.I., Franco, D.T., (2001) Soil salinity reduction and prediction of salt dynamics n the coastal ricelands of Bangladesh. Agricultural Water Management Jour, v.47, pp.9-23.
- Muhur, R. G. et al, (1963) Soil Testing in India. USAID, New Delhi.
- Mukharjee, M.K. (1985) Morphology of the South Gujarat coast - its Neotectonic significance. In Proc. Quaternary Episodes in India, Dept. of Geology, M.S.University of Baroda, pp.26-33.
- Murthy, M.V.N. (1981) Late Mesozoic-Early Tertiary volcanism in the Trans-Deccan Trap areas of the Indian Shield, A Synthesis, Deccan Volcanism. Geol. Soc. India. Mem. 3, pp.93-100.
- Paliwal, K.V. and Gandhi, A.P. (1973) Some relationship between quality of irrigation waters and chemical characteristics of irrigated soils of the Nagpur district, Rajasthan, Geoderma, v.9, 213 p.
- Pandey, J., Singh, N.P., Krishna, B.R., Sharma, D.D., Parikh, A.K., and Nath, S.S. (1993) Lithostratigraphy of Indian petroliferous basin, Document III, Cambay Basin, v.1, Unpublished Report of KDMIPE, ONGC Ltd., Dehradun, India.
- Pandey, S.L., Sinha, A.K. and Pal, M. (1972) Water table fluctuation and its interpretation. In: Proc. of the Symp. on Waterlogging – Causes and Measures for its Prevention, CBI&P, New Delhi, Pub. no. 118, v.1, pp.55-64.
- Pariente, S. (2001) Soluble salts dynamics in the soil under different climatic conditions, Catena, v.43, pp 307-321.

- Patel, M.P. (1991) Quaternary Strandlines in Gujarat. In National Seminar on Quaternary Landscape of Indian Sub-continent. Dept. of Geology, M. S. University of Baroda, Vadodara, pp.107-118.
- Pawar, N.J. (1996) Groundwater quality and management. Unit 6, 7, in Hydrology and Groundwater Development: ET532, IGNOU Publ.
- Phadtare, P.N., (1988) Report on Geohydrology of Gujarat State, Central Ground Water Board, Ministry of Water Resources, New Delhi, 103p.
- Pilot Project for Minimising Waterlogging and Salinity in the Command of Ukai-Kakrapar Project/part: I&II (1992) Surat Irrigation Circle, Surat, 24p.
- Piper, A.M. (1953) A Graphical procedure in the Geochemical Interpretation of Water Analysis. U.S. Geol. Surv. Groundwater note 12.
- Piper, M. (1953) A graphic procedure in the geochemical interpretation of water analysis, U.S. Geol. Surv., Groundwater, v.12, pp.50-59.
- Porwal, M.C., (1997) Remote Sensing Analysis of Environmental Resources for Planning and Development. APH publ. corp., New Delhi. 302p.
- Powar, K.B. (1987) Evolution of the Deccan Volcanic province, presidential address, Proc., 74 Indian Science Congress, Bangalore. Pt. II, pp.1-30.
- Puri, A.N. (1967) Soils: their physics and chemistry, Reinhold Publishing Corporation, India.
- Qadir, M., Schubert, S., Ghafoor, A. and Murtaza, G., (2001) Amelioration strategies for sodic soils: a review. Land Degradation and Development, v.12, pp.357-386.
- Rai, M.M. (1995) Principles of Soil Science (3rd Ed.). Macmillan India Ltd., New Delhi, 305p.
- Rai, V. (1991) Environmental hazards and some observations on the fluvial geomorphology of the rivers Puna and Ambica, Valsad District, Gujarat, India. In Proc. Quaternary Landscape of Indian Subcontinent, Geology Dept. M.S. University of Baroda. pp.153-158.
- Ramamoorthy, B. (1964) Some aspects of management of soil water plant climatic complex in the arid zone, General symposium on problems of Indian arid zones, Jodhpur, pp.276-285.
- Raman S. (1984) Impact of canal irrigation on waterlogging and soil salinity in Ukai-Kakrapar Command – a case study. In Seminar on Problems of Waterlogging and Salinity in Irrigated Areas. Ministry of Irrigation, Govt. Of India, Krishnarajsagar. pp 131-145.
- Raman, S. (1994) Water management in sugarcane, Soil and Water Management Research Project, SWMP Bull. 1, GAU, Navsari.

- Raman, S. and Patil, R.G. (2000) Management of waterlogged and salt affected soils. Lecturer presented in 5th Refresher Course for the University and College Teachers in Geology Dept., M.S.University of Baroda, Vadodara, 19p.
- Raman, S., Ahlawat, R.P.S. and Patil, R.G. (1998) Bioreclamation techniques for coastal salt affected soils of South Gujarat. SWMP Bull.5. Agril. Res. Station, Danti and Soil and Water Management Research Project, G A U., Navsari.
- Rankama, K. and Sahama, T.G. (1960) Geochemistry, (2nd Ed.), Chicago, 912p.
- Rastogi, A.K. (1993) A review of techniques in groundwater system analysis and recent trends. Jour. Institute of Engineers, India, v.74.
- Rathod, K.G., Patel S.J., and Shah U.V. (1997) Water resources of development of Gujarat, Navnirman, N&WRD, Govt. of Gujarat, pp.16-24
- Reith, J.W.S. (1963) Jour. Sci. Fd. Agric. v.14, pp.417. In: Hesse, P. R., (ed) A textbook of soil chemical analysis. CBS Publ., and Distributor, New Delhi, 520p.
- Rhoades, J.D. (1972) Quality of water for irrigation. Soil Sci, v.113, pp.277-284.
- Rhoades, J.D., (1968) Leaching requirement for exchangeable sodium control, Soil Science Society of America Proceeding, v.32, pp.652-656.
- Richards, L.A. (1954) Diagnosis and improvement of saline and alkali soils. U.S.Salinity Lab., USDA Ag. Handbook No. 60, 160p.
- Richards, L.A. (1968) Diagnosis and Improvement of Saline and Alkali Soils, U.S. Salinity Laboratory Staff, Agriculture Handbook, No. 60, Oxford and IBH Publ. Co., New Delhi.
- Richards, L.A. (ed.) (1954) Diagnosis and Improvement of Saline Alkali Soils. USDA Handbook NO. 60, Washington, 160p.
- Rouse, R.D. and Bertramson, B.R. (1950) Proc. Soil Soc. Am., v.14, 113p. In: Hesse, P. R., (ed) A textbook of soil chemical analysis. CBS Publ., and Distributor, New Delhi, 520p.
- Rowell, D.L. (1994) Soil science: methods and applications. Longman Scientific & Technical Publishers (Pte) Ltd., England, 350p.
- Rushton, K.R. (1997) Groundwater: either too little or too much. In: Proc. Symp. Emerging Trends in Hydrology, v.1, Department of Hydrology, Roorkee. pp.213-226.
- Sahai Baldev, Kalubrame, M.H. and Jadav, K.L. (1983) Ecological studies in Ukai Command area. In: National Seminar on National Natural Resources Management System, Hyderabad. pp. I-6A1-fp I-6A15.
- Sahai Baldev, Kalubrame, M.H., Bapat, M.V., and Jadav, K.L., (1982) Identification of waterlogged and salt affected soils through remote sensing techniques. In:

- Proc. of the Third Asian Conference on Remote Sensing, Dhaka, Bangladesh. pp.Q-14-1toQ-14-11.
- Salama, R.B., Otto, C.J. and Fitzpatrick, R.W. (1989) Contribution of groundwater conditions to soil and water salinisation, *Jour. Hydrology*, v.7, pp.46-64.
- Sarin, M.M., Krishnaswamy, S.V., Trivedi, J.R. and Sharma, K.K. (1992) Major ion chemistry of the Ganga source waters weathering in the high altitude Himalaya, *Indian Acad. Science*, v.101(1), pp.89-98.
- Sarwar, A., Bastiaanssen, W.G.M. and Feddes, R.A., (2001) Irrigation water distribution and long-term effects on crop and environment, *Jour of Agricultural Water Management*, v.50, pp.125-140.
- Sawyer, C.N. and McCarty, P.L. (1967) *Chemistry for sanitary engineers*. (2nd Ed.). McGraw-Hill Series in Sanitary Science and Water Resources Engineering, McGraw-Hill, Toronto.
- Scheidegger, A.E. (1973) Hydrogeomorphology. *Jour. Hydrology*, v.20(2), pp.193-215.
- Scherer, T.F., Seelig, B. and Franzen, D. (1996) Soil, water and plant characteristics important to irrigation. EB-66, North Dakota State University, NDSU Extension Service.
- Schoeller, H. (1959) *Geochimie des eaux souterraines. Application aux eaux de gisements de petrole*. *Rev.Inst. Petrol. Ann. Combust. Liq.*, v.10, pp.181-203, In: Mathess, G (ed) *The Properties of groundwater*, John Wiley and Sons, New York, 406 p.
- Schoeller, H., (1962) *Les Eaux Souterraines*, pp.246, Paris, Masson, In: Mathess, G (ed) *The Properties of groundwater*, John Wiley and Sons, New York, 406 p.
- Schwille, F. (1976) Anthropogenically reduced groundwaters. *Hydrol. Sci. Bull*, v.21(4), pp.629-645.
- Scofield, C.S. (1933) *Quality of irrigation water*. California Dept., Public Works Div., Water Resources Bull. 40, pp.1-95.
- Sehgal, J. and Abrol, I.P. (1994) *Soil degradation in India: Status and impact*. Oxford and IBH Publ. Co. Pvt. Ltd., New Delhi.
- Seth, A.K. and Singhal, D.C. (1994) Status of groundwater quality in upper Hindon basin, Saharanpur area (U.P.) In: *Regional Workshop on Environmental Aspects of Groundwater Development*, Kurukshetra, India, pp.I-114 - I-122.
- Shainberg, I. (1985) The effect of exchangeable sodium and electrolyte concentration on crust formation. *Advances in Soil Science* 1, pp.101-122
- Sharma, H.D. and Chawla, A.S. (1977) *Manual on ground water and tubewells*. Technical repot no. 18, CBIP, New Delhi. 200p.

- Silva, G.G.R. (2000) Assessment and mitigation of hydrological hazard in Sri Lanka, In: R. Mehrotra, B. Soni, and K.K.S. Bhatia (Eds.), *Integrated Water Resources Management for Suitable Development*, NIH, Rookee, v.1, pp.1108-1116.
- Singh, D. and Chawala, D.R. (1946) Suitability of water for irrigation purposes. *Jour. of Indian Farming*, v.2, pp.12-21.
- Singh, K.K., Patria, M.L. and Sharma, H.C. (2000) Environmental protection and sustainable agriculture, *Environment and People*, pp.5-9.
- Singh, K.P. (2000) Development of waterlogging and salinity in Southwest parts of Punjab state, India. In: A.M. Pathan and S.S. Thigale (Eds), *Contributions to Environment Geo-Science*. Aravali Publ., New Delhi, pp.93-105.
- Singh, P. (1996) Ground water table fluctuation and water balance parameters – A case study. In: C.V.J. Verma (Eds.), *Workshop on Waterlogging and Soil Salinity in Irrigated Agriculture*, CBI&P, Karnal. pp.83-89.
- Skogerboe, G.V. (1974) Agricultural systems. In *Human Ecology*. North Holand, Amsterdam, chap. v.2, pp.127-145.
- Skogerboe, G.V. and Law, J.P. (1971) Research needs for irrigation return flow quality control, Report No. 13030-11/71, U.S. Environmental Protection Agency, Washington, D.C.
- Skogerboe, G.V., and Walker, W.R., (1981) Impact of irrigation on the quality of groundwater and river flow. In: D. Yaron (Eds.), *Salinity in Irrigation and Water Resources*, Marcel Dekker Publ., New York, 432p.
- Smith and Browing (1946), In Garg, B.K. and Gupta, S.K. (1997) *Saline waste lands, environmental and plant growth*. Scientific Publishers, Jodhpur, 287p.
- Soil Classification and Land Irrigability Appraisal of Chalthan Branch Canal Command. (1993) Soil, Drainage & Reclamation Circle, Vadodara, 215p.
- Sondhi, S.K. and Sharma, P. (1987) Resources analysis and plan for efficient water management- A case study of Mahi Right Bank Canal command area, IARI bulletin 42.
- Suarez, D.L. (1990) Water quality criteria for irrigation. In: *Proc. Speciality Conf. sponsored by Irrigation and Drainage Division, Water Resource Planning and Management Division, ASCE, University of Delaware, Newark, Delaware*, pp.57-66.
- Subba Rao, N. and Krishna Rao, G. (1991) Groundwater quality in Vishakhapatnam urban area, Andhra Pradesh, India, *Jour. of Env.Health*, v.33(1), 25p.
- Svendsen, M.T. (1976) Investigating agricultural waterlogging and salinity problems. Unpublished M.S. Thesis, Colorado State University, Colorado, 160p.
- Szabolcs, I. (1989) *Salt Affected Soils*, CRC Press Inc., Boca Raton, Florida, pp.207-238.

- Talati, R.P. (1941) Damaged lands in Deccan and their classification. *Indian Jour. Agric. Sci.*, v.11, pp.959-977.
- Taylor, E.M., Puri, A.N. and Asghar, A.G. (1937) Punjab irrigation research institute research publication, v.4(7).
- Tedeschi, A., Beltran, A. and Aragues, R. (2001) Irrigation management and hydrosalinity balance in a semi-arid area of the middle Ebro river basin (Spain) *Jour. of Agricultural Water Management*, v.49, pp.31-50.
- Thorne, D.W. and Peterson, H.B. (1954) *Irrigated soils, their fertility and management*. The Blackiston Co. Inc., New York, 22p.
- Tickell, S.J. (1997) Mapping dryland salinity hazards, Northern Territory, Australia, *Hydrogeology Jour.*, v.5(1), pp.109-117.
- Tiwari, C.B. and Sing, R. (1997) Effect of irrigation of groundwater hydrology in Chalthan Branch of Kakrapar Canal Command Area. 2nd International R&D Conference, Water & Energy, v.2, CBIP, New Delhi. pp 70-79.
- Tiwari, C.B. and Patel, J.K. (1997) Soil resources of Gujarat. Navnirman, N&WRD, Govt. of Gujarat. pp.1-9.
- Tiwari, K.C. (1986) Hydrogeological frame-work of the Heran river basin Gujarat State: A critical appraisal of its lithology structure and geomorphological features. Unpublished thesis Ph.D. thesis, M.S.University of Baroda, Vadodara. pp. 152-157.
- Tiwari, T.N. and Ali, M. (1988) Water quality index for Indian rivers. In: *Ecology and Pollution of Indian Rivers*, Ed. R. K. Trivedy, Ashish Publishing House, New Delhi, pp.271-286.
- Todd, D.K. (1959) *Groundwater hydrology*, John Willey and Sons Inc. New York, USA.
- Todd, D. K. (1980) *Groundwater Hydrology*. John Wiley & Sons, New York, 535p.
- Topp, G.C., Wires, K.C., Angers, D.A. Carter, M.R., Culley, J.L.B., Holmstrom, D.A., Kay, B.D., Laford, G.P., Langille, D.R., McBride, R.A., Patterson, G.T., Perfect, E., Rasiah, V., Rodd, A.V. and Webb, K.T. (1995) Changes in soil structure. In: D.F. Acton and L.J. Gregorich, (Eds.), *The Health of Our Soils, Agriculture and Agri Food*, Canada. Publication No. 1906/E.
- Tripathi, B.R. (1998) Managing sodic soils for sustained crop production in Indo-Gangetic plains, *Jour. Ind. Soc. Soil Sci.*, v.46(4), pp.543-550.
- Tyagi, N.K. (1996) Conjunctive use of rain canals and saline groundwaters. In: C.V.J. Verma (Eds.), *Waterlogging and Soil Salinity in Irrigated Agriculture*, CSSRI, Karnal, pp.75-82.
- Tygi, N.K. (1982) Annual Report, CSSRI, Karnal.

- USEPA, (1976) Quality criteria for water. Office of water and hazardous materials Rep. EPA-440/9-76-023, Washington, DC.
- U.S. Dept. of Agriculture. Soil Conservation Service. Soil Survey Laboratory Methods Manual. 1992. Soil Surv. Invest. Rpt. No. 42. Washington, DC.
- U.S. Dept. of Agriculture (1951) Soil Conservation Service. Soil Survey Staff. Soil Survey Manual. U.S. Dept. of Agric. Hand book. 18. U.S. Govt. Print. Off. Washington, DC. 503 pp., illus.
- U.S. Dept. of Agriculture (1975) Soil conservation service. Soil Survey Staff. Soil Taxonomy: A Basic System of Soil Classification for Making and Interpreting Soil Surveys. U.S. Dept. of Agric. Hand book. 436. U.S. Govt. Print. Off. Washington, DC. 754 pp., illus.
- U.S. Dept. of Agriculture (1990) Soil conservation service. Soil Survey Staff. Keys to Soil Taxonomy. 4th ed. Blacksburg, VA: Virginia Polytechnic Institute and State Univ. 422 pp.
- U.S. Dept. of Agriculture (1993) Soil conservation service. Soil Survey Staff. National Soils Handbook 18. Washington, DC.
- U.S. Dept. of Agriculture (1998) Soil quality resource concern: available water capacity. USDA Natural Resources Conservation Services, Washington, DC.
- U.S. Salinity Laboratory Staff, (1954) Diagnosis and improvement of saline and alkali soils, USDA, Handbook No. 60, U.S. Department of Agriculture, Washington D.C. 160p.
- U.S. Salinity Laboratory Staff, (1978) Soil survey manual, Handbook No., U.S. Department of Agriculture, Washington D.C.
- U.S. Salinity Laboratory Staff, (1996) Soil survey laboratory methods manual. Soil survey investigation report 42, U.S. Department of Agriculture, Washington D.C. 716p.
- Uppal, H.L. (1964) Soil and groundwater Surv. of Punjab, V.I, Irrigation and Power Res. Institute, Amritsar. 346p.
- Valenza, A., Grillot, J.C. and Dazy, J. (2000) Influence of groundwater on the degradation of irrigated soils in a semi-arid region, the inner delta of the Niger River, Mali, Jour. of Hydrology, v.8, pp.417-429.
- Van Hoorn, J.W. (1971) Quality of irrigation water, limits of use and prediction of long-term effects. In: Salinity Seminar, Baghdad. Irrigation and Drainage Paper 7. FAO, Rome, pp.117-135.
- Vander Molen, W.H., (1976) Natural factors. In: Prognosis of Salinity and Alkalinity. Soil Bull. No. 31, pp.68-87.
- Varade, S.B. (1992) Soil management for sustainable productivity, Jour. Indian Soc. Soil Sci., v.40, pp.25-38.

- Vashi, N.M. and Ganapathi, S. (1982) Studies on Quaternary landforms coastal sediments and Neotectonism along the Mainland Gujarat coast between the rivers Tapi and Auranga. Unpublished U.G.C. Report. M.S.University of Baroda. pp.248-266.
- Vashi, N.M., Ganapathi, S. and Merh, S.S. (1988) Evolution of Quaternary Landforms Between Tapi-Ambica Coastline, South Gujarat. *Mineral Wealth*, v.21(1), pp.62-65.
- Vishwakarma, S.K., Kale, V.S. and Tiwari, Y.K. (2000) Planning conjunctive use for controlling water table in a canal command area, In: R. Mehrotra, B. Soni and K.K.S. Bhatia (Eds.) *Integrated Water Resources Management for Sustainable Development*, v.1, pp.282-288.
- Wallace, T. (1958) 4th Congr. Int. Potash Inst., Madrid, 145p. In: Hesse, P. R., (ed) *A textbook of soil chemical analysis*. CBS Publ., and Distributor, New Delhi, 520p.
- Walton, W.C. (1970) *Groundwater resources evaluation*. Mc-Graw Hill Kogakusha Ltd., Tokyo, 664p.
- Walton, W.C. (1980) *Groundwater resources evaluation*, Mc. Graw Hill Book Co., New York, USA. 318p.
- Wang, G. and Cheng, G. (2000) The characteristics of water resources and the changes of the hydrological process and environment in the arid zone of Northwest China, *Env. Geol.*, v.39 (7) pp.783-795.
- Way, W.A. (1968) *The Whys and Hows of Liming*. Univ.of Vermont Brieflet 997.
- Wessling, J. (1974) Crop growth in wet soils. In Jan van Schifgaarde (ed.) *Drainage for Agriculture*. Agronomy No. 17.
- Westcot, D.W. (1979) *Evaluation of water quality for irrigation development*. World Soils Resources Report No. 50, FAO, Rome, pp.77-82.
- WHO (1979) *Sodium, chlorides and conductivity in drinking water: Report on a WHO working Group*, Copenhagen, Euro Reports and Studies No. 2.
- WHO (1984) *Guidelines for drinking water quality*, V.1 & 2, Geneva, Switzerland.
- WHO (1993) *Guidelines for drinking-water quality*, (2nd Ed.), Recommendations. Geneva, World Health Organization, v.1, pp.122-130
- Wilcox, L.V. (1948a) *The quality of water for irrigation use*, Tech. Bull. 962, U.S. Department of Agriculture, Washington, D.C.
- Wilcox, L.V. (1948b) *Explanation and interpretation of analysis of irrigation waters*. U.S.Department of Agriculture Technical Bulletin, 962, Washington D.C., 40p.
- Wilcox, L.V.(1953) *Classification and Use of Irrigation Water*, U.S.D.A. Circ., 969, Washington, D.C., pp.1-19.

- Wilcox, L.V.(1966) Tables for calculating the pH_c values of waters. Memoir of U.S. Salinity Laboratory, 8p.
- Wilcox, L.V., Blair, G.Y. and Bower, C.A. (1954) Effect of bi-carbonate on suitability of water for irrigation. Soil Sci, v.77, pp.259-266.
- Wilcox, L.V. and Magistad, O.C. (1943) Interpretation of analyses of irrigation waters and the relative tolerance of crop plants, USDA Circ. 8.
- Wilding, C.P. (1963) Diss. Abstr., v.23, pp.2642, In: Hesse, P. R., (ed) A textbook of soil chemical analysis. CBS Publ., and Distributor, New Delhi, 520p.
- Williams, E.G. (1962) Trans. Meeting Comm. IV and V Int. Soc. Soil Sci., New Zealand, 820p. In: Hesse, P. R., (ed) A textbook of soil chemical analysis. CBS Publ., and Distributor, New Delhi, 520p.
- Yaalon, D.H., (1964a) Downward movement and distribution of anion in soil profiles with limited wetting, Agricultural Science Proc., v.2, pp.157-164.
- Yaalon, D.H., (1964b) Airborne salts as an active agent in pedogeomorphic processes, Trans. Int. Congr, Soil Science, pp.997-1000.
- Yaron, Dan (1981) Salinity in Irrigation and Water Resources, Marcel Dekker Publ., New York, 432p.