

References

- Adsule, P. G., (2013). Good Agricultural Practices for Production of Quality Table Grapes. *National Research Centre for Grapes under the Indian Council of Agricultural Research, Pune*
- Adsule, P.G., & Sharma, A. (n. d.). Current Viticulture Practices in Wine Grape Growing in India: Issues and Challenges with reference to Processing. Available at http://www.aivv.it/Archivio/Atti/P033_1102_1040_Adsule.pdf. Accessed on date 12/12/2016
- Adsule, P.G., Sharma, A. K., & et al (2014). Raisin Industry in India: Adoption of Good Drying Practices for Safe Raisins. *Bulletin de l'OIV*, 85, 974-976.
- AgriCorp Conference (2011). Maharashtra 2015: game changers for agriculture growth and farm prosperity. Agriculture and food processing committee. Available at http://www.bombaychamber.com/uploads/eventrecord/agricorp_2011_confere_nce_record_note.pdf. Accessed 11 Oct. 2015.
- Agricultural & Processed Food Products Export Development Authority (Ministry of Commerce & Industry, Government of India). Available at: http://agriexchange.apeda.gov.in/indexp/Product_description.aspx?hscod=08062010. Accessed on date 15/01/2018
- Ahmad, T., Bathla, H.V.L., & et al (2012). Estimation of Area and Production of Fruits and Vegetables in Maharashtra State. *XI Biennial Conference of the International Biometric Society (Indian Region) on Computational Statistics and Bio-Sciences*.
- Alabastro, E. (2006). National Innovation System: Prospects and Challenges. *Philippine Sociological Review*, 54, 8-10.
- Alibaba.com Site, 2018. Available at: https://www.alibaba.com/trade/search?fsb=y&IndexArea=product_en&CatId=&SearchText=wine+making+machine. Accessed on date 18/01/2018
- Andrea, P. & Andrea, S. (2009). *Innovation networks in modelling and analyzing*. New York, London: Springer dordrcht Heidelberg.
- APEDA, agriXchange the changing face of agri-business (2017). Available at; <http://agriexchange.apeda.gov.in/indexp/exportstatement.aspx> Accessed on date 02/01/2018

- APEDA, agriXchange the changing face of agri-business, (2017). Available at; http://agriexchange.apeda.gov.in/indexp/Product_description_32head.aspx?gcode=0205 Accessed on date 1/01/2018
- Argade, R. (2016). Where is the highest production of grapes in Maharashtra?. Available at: <https://www.quora.com/Where-is-the-highest-production-of-grapes-in-Maharashtra> . Accessed on date 01/01/2018
- Asheim, B. T., & Coenen, L. (2005). Knowledge bases and regional innovation systems: Comparing Nordic clusters. *Research Policy*, 34, 1173–1190.
- Asheim, B. T., & Coenen, L. (2006). Contextualising Regional Innovation Systems in a Globalising Learning Economy: On Knowledge Bases and Institutional Frameworks. *Journal of Technology Transfer*, 3, 163–173.
- Asheim, B. T., Smith, H. L., & Oughton, C. (2011). Regional Innovation Systems: Theory, Empirics and Policy. *Regional Studies*, 45(7), 875–891.
- Asheim, B., Grillitsch, M., & Trippel, M. (2015). Regional Innovation Systems: Past - Presence – Future. *Centre for Innovation, Research and Competence in the Learning Economy (CIRCLE) Lund University*. Papers in Innovation Studies Paper no. 2015/36.
- Available at www.indiastat.com Accessed on date 01/01/2018. Note: Area in '000 ha
- Available at www.indiastat.com Accessed on date 01/01/2018; Note: Production in '000 Tonne
- AZEUS (2015). Grapes Dehydration for Raisins Production in Turkey. Available at; <http://fooddryingoven.com/drying-ideas/Turkey-raisins-production-by-grapes-dryin.html>. Accessed on date 23/02/2018
- Basant, R. (1987). Agricultural Technology and Employment in India: A Survey of Recent Research. *Economic and Political Weekly*, 22(32), 1348-1364.
- Bates, R. P., Morris, J. R., & Crandall, P. G. (2001). *Principles and Practices of Small- and Medium-scale Fruit Juice processing*. Issue 146 Food and Agriculture Organization of the United Nations, ISSN 1010-1365
- Bathelt, H., & Depner, H. (2003). Innovation, Institution und Region: zur Diskussion über nationale und regionale Innovationssysteme (Innovation, Institution and

- Region: A Commentary on the Discussion of National and Regional Innovation Systems). *Erdkunde*, Bd. 57, H. 2, 126-143.
- Bhatia, S.C. (2016). *Food Biotechnology*. Woodhead Publishing India Pvt. Ltd. New Delhi
- Bheemathati, S. (2015). An Overview: Recent Research and Market Trends of Indian Wine Industry. *Journal of Food Processing & Beverages*, 3(1).
- Bhosale, S. S., Kale, N. K. & Sale, Y. C. (2016). Trends in Area, Production and Productivity of Grapes in Maharashtra. *International Journal of Advanced Multidisciplinary Research*, 3(10), 21-29.
- Carlsson, B. (2002). Innovation systems: Analytical and methodological issues. *Research policy*, 31, 233-245.
- Chand, R. (1996). Ecological and Economic Impact of Horticultural Development in the Himalayas: Evidence from Himachal Pradesh. *Economic and Political Weekly*, 31(26), A93-A99.
- Chandra, A. (2011). Brief history of wine. Business Standard.
- Chapter III PROFILE OF NASIK DISTRICT: THE STUDY AREA (2010). http://shodhganga.inflibnet.ac.in/bitstream/10603/9993/8/08_chapter%203.pdf
- Chattopadhyay, K. S., & Roy, D. (2011). Impact Study of the National Horticulture Mission Scheme in West Bengal. *Agro-Economic Research Centre Visva-Bharati Santiniketan*.
- Chris, F. (1995). The 'National System of Innovation' in Historical perspective. *Cambridge Journal of Economics*, 19.
- Chris, F. (2002). Continental, national and sub-national innovation Systems-complementarity and economic growth. *Research Policy*, 91-211.
- Collector Office, Nashik (2016). Disaster Management Plan. Available at: http://nashik.nic.in/htmldocs/DDMP_Nsk.pdf Accessed on date 12/01/2018
- Dandekar, A. & Naravade, S. (2013). The Case of Maharashtra's Disappearing Water: *Economic & Political Weekly*, No 18.
- Dastagiri, M. B., Gajula, MNV. P., & et al (2014). World and Indian agriculture: Revolutions & multi speed strategies for future. *Science Discovery*, 2(1), 14-26.

- Dev, S. M. (2012). *Small Farmers in India: Challenges and Opportunities*. Indira Gandhi Institute of Development Research, Mumbai, India.
- Dwivedy, N. (2011). Challenges faced by the Agriculture Sector in Developing Countries with special reference to India. *International Journal of Rural Studies*, 18(2).
- Economic Survey of Maharashtra, (2017-18). Directorate of Economics and Statistics, Planning Department, Government of Maharashtra, Mumbai
- Edquist, C. (2001). The Systems of Innovation Approach and Innovation Policy: An account of the state of the art. Lead paper presented at the DRUID Conference, Aalborg, under theme F: 'National Systems of Innovation, Institutions and Public Policies
- Edquist, C., (2005). Systems of Innovation Perspectives and Challenges. Handbook of Innovation. (edited) by Jan Fagerberg, David, C. Mowery and Richard, R. Nelson (2005). *The Oxford Handbook of Innovation*. Oxford University Press, Yew York.
- Eldina Castro SOUSA, Ana Maria Athayde UCHÔA-THOMAZ., & et al (2014). Chemical composition and bioactive compounds of grape pomace (*Vitis vinifera* L). *Benitaka variety, grown in the semiarid region of Northeast Brazil*, *Food Science and Technology*, 34(1), 135-142.
- Eskay International, (2013). Raisins Farming. Available at: <http://www.eskayinternational.in/index.php?id=62>. Accessed on date 23/02/2018
- Financial Results Summary of Jain Irrigation System Ltd. (2016). Available at <http://www.nseprimeir.com/Pages/FResults.aspx?value=3cYDU7170mvM600MSHCcMw%3d%3d>. Accessed on Date 01/12/2016
- Fritsch, M. (2001). Co-operation in Regional Innovation Systems. *Regional Studies*, 35(4), 297-307.
- Fromhold-Eisebith, M. (2007). Bridging Scales in Innovation Policies: How to Link Regional, National and International Innovation Systems. *European Planning Studies*, 15(2), 217-233.
- Gade A. D. (2015). Prospect of Grapevine Cultivation in India. *Indian Scholar An International Multidisciplinary Research e-Journal*, 2(I).

- Gade, A. D. (2015). Growth and Spatial Distribution of Wine Industry in Sangli District. *Research Front an International Peer-Reviewed Multidisciplinary Research Journal*, 3(2).
- Galli, R., & Teubal M. (n. d.). Paradigmatic Shifts in National Innovation Systems. Available at <http://ifise.unipv.it/Publications/Paradigmatic.pdf> Accessed on date 19/07/2016
- Gandhi, C. P. (2014). Indian Horticulture database. *Ministry of Agriculture, Government of India* 85, Institutional Area, Sector-18, Gurgaon - 122 015
- Georgiev, V., Anthony, A., & et al (2014). Recent Advances and Uses of Grape Flavonoids as Nutraceuticals. *Nutrients*, 6, 391-415.
- Ghosh, D., Chakraborty, C., & Dasgupta, R., (2017). A Survey on Indian Grapes at Sangli, Maharashtra, India. *International Journal of Current Microbiology and Applied Sciences*, 6(5), 1904-1911.
- Gilmartin, D. (1994). Scientific Empire and Imperial Science: Colonialism and Irrigation Technology in the Indus Basin. *The Journal of Asian Studies*, 53(4), 1127-1149.
- Giri, I. (2016). Overview of the agriculture sector in India since independence. Project Guru. Available at; <https://www.projectguru.in/publications/agriculture-sector-india/>. Accessed on date 22/01/2018
- Godin, B. (2009). National Innovation System: The System Approach in Historical Perspective. *Science, Technology & Human Values*, 34(4), 476- 501.
- Goswami, S., & Ray, S. (2011). Studies on the Process Development for the Fermentative Production of Wine from Grape Juice Concentrate. *Internet Journal of Food Safety*, 13, 367-373.
- Government of India (2017). *Horticultural Statistics at a Glance 2017*, Horticulture Statistics Division Department of Agriculture, Cooperation & Farmers Welfare Ministry of Agriculture & Farmers Welfare Government of India.
- Government of Maharashtra (2000), and Chapter - V Profile of Nashik District. Available at http://shodhganga.inflibnet.ac.in/bitstream/10603/2019/12/12_chapter-5.pdf. Accessed on date 04/04/2016.
- Government of Maharashtra Department of Agriculture (n. d.) Maharashtra Agricultural Competitiveness Project (MACP) Marketing Strategy Supplement (MSS) District

- Nashik. *Project Implementation Unit (Agriculture)*, Flat no. F/78, 1st Floor, Bhu-Vikas Bank Training Centre, Market yard, Gultekadi, Pune 411 037.
- Grainger, K., & Tattersall, H. (2005). *Wine Production: Vine to Bottle*. Blackwell Publishing Ltd, 9600 Garsington Road, Oxford OX4 2DQ, UK
- Groenewegen, J., & Steen, M. V. D. (2006). The Evolution of National Innovation Systems. *Journal of Economic Issues*, 40(2), 277-285.
- Guleria, A. (2014). Production of Grape wine by the use of yeast, *Saccharomyces cerevisiae*. *Global Journal for Research Analysis*, 3(6). ISSN No 2277 – 8160
- Gupta, K. (2011). Optimization of Foam Mat Drying Process for Development of Grape Leather. Department of Processing and Food Engineering College of Agricultural Engineering & Technology Punjab Agricultural University Ludhiana-141 004
- Hailu, S., Admassu S., & Jha, Y. K. (2012). Vinegar Production Technology – An Overview. *Beverage & Food World*
- Hall, A. C. (2007). Technology supply chain or innovation capacity? Contrasting experiences of promoting small scale irrigation technology in South Asia.
- Hekkert, M., Suurs, R. A. A., & et al (2007). Functions of Innovation Systems: A new approach for analyzing technological change. *Technological Forecasting and social change*, 74, 413 – 432.
- Herstatt, C., Tiwari, R., & et al (2008). India's National Innovation system: Key Elements and corporate Perspectives. *Hamburg University of Technology Germany*.
- Hinge, R. B., Angadi, J. G., Manjunath, L., Basavaraja, H., & Kataraki, P. A. (2013). Adoption of wine grape production technology in Maharashtra. *Karnataka Journal of Agricultural Sciences*, 26(1), 80-84.
- Horticultural Statistics at a Glance (2017). *Horticulture Statistics Division Department of Agriculture, Cooperation & Farmers Welfare Ministry of Agriculture & Farmers Welfare Government of India*, Available at <http://www.agricoop.nic.in/sites/default/files/Horticulture%20At%20a%20Glance%202017%20for%20net%20uplod%20%282%29.pdf> Accessed on date 13/01/2018

- Horticulture Statistics at a Glance (2015). *Horticulture Statistics Division Department of Agriculture, Cooperation & Farmers Welfare Ministry of Agriculture & Farmers Welfare Government of India*. Oxford University Press New Delhi 110001, India
- Howale, J. V., Ghadage, A., & More, M. P. (2015). A Study of Government Subsidies, Analysis of Awareness & Utilization of Subsidies by the Farmers in Western Maharashtra. *International Journal of Science Technology & Management*, 4(1).
- ICAR-National Research Centre for Grapes Pune (2013). Nutritional quality and safety evaluation of common processed products of grape. ICAR-National Research Centre for Grapes P.B. No. 3, Manjri Farm P.O., Solapur Road, Pune 412 307, India.
- ICAR-National Research Centre for Grapes Pune (n. d). Nutritional quality and safety evaluation of common processed products of grape. ICAR-National Research Centre for Grapes P.B. No. 3, Manjri Farm P.O., Solapur Road, Pune 412 307, India
- indiamart (2018). Dried Raisin. Available at. <https://dir.indiamart.com/impcat/dried-raisin.html> . Accessed on date 20/02/2018
- indiamart (2018). Grape Juice. Available at. <https://dir.indiamart.com/impcat/grape-juice.html?biz=30>. Accessed on date 20/02/2018
- India Brand Equity Foundation (2015). Maharashtra Gateway to India. Available at <http://www.ibef.org/download/Maharashtra-August-2015.pdf>. Accessed on date [12/10/2016](#)
- India Brand Equity Foundation (2018). *Agriculture in India: Information About Indian Agriculture & Its Importance*, Welcome to Department of Commerce, Government of India
- Indiastat, (2017). Available at: www.indiastat.com. Accessed on date 08/01/2018.
- Iran Dried Fruit (2007). Raisin harvesting and drying. Available at <http://www.irandriedfruit.com/iran-fruits-dried/raisin/raisins-drying.php>. Accessed on date 21/02/2018
- Jadhav, M. T. (2013). Horticulture Development in India. *Journal of Current Science*, 1(1), 13-17.

- Jagadeesh babu, A. (2014). Horticulture Development in Andhra Pradesh. *International Journal of Academic Research*, 1(2-1)
- Jan Fagerberg, David, C. Mowery & Richard, R. Nelson (2005). *The Oxford Handbook of Innovation*. Oxford University Press, Yew York.
- Jawairia Zafar, (2018). Grape Seed Oil Health Benefits. Home Remedies Web. Available at: <https://www.homeremediesweb.com/grape-seed-oil-health-benefits.php#post-comment>. Accessed on date 08/02/2018
- Johnson, J. G. (2013). Impact of watershed management on the groundwater and irrigation potential: a case study. *International Journal of Engineering and Innovative Technology*, 2(8).
- Juthika, (2015). List of 5 Best Grapeseed Oils in India. Beautiful homesha
- Kakade, A.D., Pawar, B.R., & Bankar, S.S. (2011). Financial feasibility of grape wine production in Maharashtra. *International Journal of Commerce and Business Management*, 4(1), 57-59.
- Kamble, S. H., Kolambkar, R. A., & et al (2014). Economics of grape production in Marathwada Region of Maharashtra state. *International Research Journal of Agricultural Economics and Statistics*, 5(2), 179-183.
- Karibasappa, G.S., Adsule, P.G. & et al (2011). Present Scenario of wine industry in India. IntelliBriefs. Available at <http://intellibriefs.blogspot.in/2011/03/present-scenario-of-wine-industry-in.html>. Accessed on date 01/02/2017
- Koundouri, P. N. (2006). Technology adoption under production uncertainty: theory and application to irrigation technology. *American Journal of Agricultural Economics*, 88(3), 657-670.
- Krishi Gyan, (2014-15). Welcome to an All-in- One Agri Information Website for farmers, Agri Students and Agri Entrepreneurs. *Agriculture Current Affairs-I*. Available at: <http://www.krishigyan.com/agriculture-current-affairs-2014-15/>. Accessed on Date 01/01/2016.
- Krishna K. M., & Mokshapathy, S. (2013). Working Performance of HOPCOMS- in Karnataka an Analysis. *International Journal of Horticulture*, 3(20), 114-120.
- Krishna, V. V. (2001). Policy cultures: Changing policy cultures, phases and trends in science and technology in India. *Science and Public Policy*, 28(3), 179-194.

- Kumar, D. M., Narayanamoorthy, A., & et al (2009). Groundwater irrigation versus surface irrigation. *Economic and political weekly*, 44(50).
- Kumar, S., & Kavita, (2014). Foreign Direct Investment in Indian Agricultural Sector: Opportunities and Challenges States. Available at:
http://www.indiastat.com/SOCIO_PDF/109/fulltext.pdf. Accessed on date 15/08/2015
- Kumbhare, S. L., & Sen, M. (2008). Investments in irrigation projects: An impact analysis. *Agricultural Economics Research Review*, 21, 377-385.
- Ladaniya, M. S., Wanjari, V., & Mahalle, B. (2005). Marketing of Grapes and Raisins and Post-Harvest Losses of Fresh Grapes in Maharashtra. *Indian Journal of Agricultural Research*, 39(3), 167-176.
- Laszlo Borocz , (2017). The Process of Manufacturing Grape Seed Extract in 8 Steps. Buy Grape Seed Extract Online. *CareFoundation, Charity, Healthcare*
- Leeuwen, C. V. & Darriet, P. (2016).The Impact of Climate Change on Viticulture and Wine Quality. *Journal of Wine Economics*, 11, 150-167.
- Lewis, W. J. & Alexander, D McE (2008). *Grafting and Budding: A practical Guide for Fruit and Nut Trees and Omamentals*. Landlinks Press, Australia.
- Liso, N. D. (2006). Charles Babbage, Technological Change and the National System of Innovation. *Journal of Institutional and Theoretical Economics (JITE) / Zeitschrift für die gesamte Staatswissenschaft*, 162(3), 470-485.
- Lok Sabha Unstarred Question No. 1621, Accessed on dated on 08.03.2016.
- Lok Sabha Unstarred Question No. 1676; Accessed on date 08/03/2016.
- Lundvall, B. A. (1999). National Business Systems and National Systems of Innovation. *International Studies of Management & Organization*, 29(2), 60-77.
- Lundvall, B. A. (2007). National Innovation Systems-Analytical Concept and Development Tool. *Industry and Innovation*, 14(1), 95-119.
- Lundvall, B. A., Joseph, K. J., Chaminade, c., and Vang, J. (2009). *Handbook of Innovation Systems and Developing Countries Building Domestic Capabilities in a Global Setting* (Edited). Edward Elgar Cheltenham, UK – Northampton, MA, USA.

- Mahajan, C.S., Jadhav, R.N., Narkhede, S.D., Ingle, S.T., & Attarde, S.B. (2009). Assessment of Winery Wastewater and Its Impact on Irrigated Soil. *Journal of Environmental Research and Development*, 4(2), 365- 371.
- Maharashtra State Excise Government of Maharashtra, India. Available at: <https://stateexcise.maharashtra.gov.in/1145/Revenue-Statistics>. Accessed on date 15/12/2016
- Maharashtra State Grape Growers Association (MSGGA), 2016
- MAIDC, Annual Report, (2014). The Maharashtra Agro-Industries Development Corporation Ltd. (*A Government of Maharashtra Undertaking*). Registered Office: Rajan House, 2nd Floor, Prabhadevi, Mumbai - 400 025
- Ministry of Agriculture & Farmers Welfare, (2017). Available at. <https://visualize.data.gov.in/?inst=18dedb26-1d95-4751-a78f-87675e833bef&vid=26081#> . Accessed on date 11/01/2018
- Ministry of Agriculture and Farmers Welfare, Govt. of India (ON941) & Past Issues.
- Ministry of Agriculture and Farmers Welfare, Govt. of India. (ON1209) and past issues
- Mitra, A. (1998). Development and management of irrigation in Maharashtra: with special reference to major and medium surface irrigation systems. *Economic and political weekly*, 33(26).
- Mitra, S. (2003). Wine Industry in Maharashtra: An Analysis. *Markets & Regulations Centre for Civil Society*.
- Mohanty, P.P., Rout, H. B., & Pradhan, R. (2015). Exploring the Potential of Wine Tourism in India: Issues and Challenges. *South Asian Journal of Tourism and Heritage*, 8(2).
- Mothe, J., & Paquet, G. (1998). National Innovation Systems, 'Real Economies' and Instituted Processes. *Small Business Economics*, 11(2), 101-111.
- Mruthyunjaya & Ranjitha, P. (1998). The Indian Agricultural Research System: Structure, Current Policy Issues, and Future Orientation. *World Development*, 26(6), 1089-1101.
- Mulani, J. G., & Rajeshirke, N. Y. (2016). Raisin Marketing Practices in Western Maharashtra, India. *International Journal of Innovative Research and Development*, 5(12).

- Muruganantham, M. K. (2009). Micro irrigation in a drought Prone district. International Executive Council Meeting.
- Mytelka, L., & Farinelli, F. (2000). Local Clusters, Innovation Systems and Sustained Competitiveness. United Nations University, Institute for New Technologies, Keizer Karelplein 19, 6211 TC Maastricht, the Netherlands
- Naik, B. H., & Thippesh, D. (2014). Fundamentals of Horticulture & Production Technology of Fruit Crops Branches of Horticulture. *University of Agricultural and Horticultural Sciences, Shimoga*, Fundamentals of Horticulture and Production Technology of Fruit Crops; (2+1): I Semester.
- Naik, H., & Thippesh, D. (2015). Fundamentals of Horticulture & Production Technology of Fruit Crops. HRT. *University of Agricultural and Horticultural Sciences, Shimoga*
- Namara, R. E., Hanjra, M. A., et al (2010). Agricultural water management and poverty linkages. *Agricultural Water Management*, 97, 520–527.
- National Skill Development Corporation (2012-2017). District wise skill gap study for the State of Maharashtra. Industry Partner Confederation of Indian Industry. Available at <http://www.nsdindia.org/sites/default/files/files/maha-sg-reports.pdf>. Accessed on date 18/12/2016
- Natural Dried Fruits (2010). Raisin Scientific names. Available at: http://www.driedfruitexporter.com/global/product_productgroupinfo_productgroup_id_3.htm. Accessed on date 21/02/2018
- Naveen, B.S., Kunnal, L.B., & Dodamani, M.T. (2010). Economics of value addition to grapewine. Agriculture Update, *Hind Agricultural Research and Training Institute*, 5(1 & 2), 113-116.
- Pandey, S. C. (2015). Importance of Crop Insurance in Meeting out the Problems and Challenges Faced by Indian Agriculture in Current Scenario. *The Opinion*, 4(8).
- Patil, P.V. (2013). Drip Irrigation Technology in Agriculture of Sangli District (Maharashtra): A Geographical Study. *Journal of Current Science*, 1(1), 36-40.
- Patil, S. S. (n. d.). Farmers Views on The Implementation of Environment-Friendly for Grapes Production- A Survey Study in Sangli District. Available at:

file:///C:/Users/sony/Downloads/FARMERS_VIEWS_ON_THE_IMPLEMENTATION_OF_E.pdf . Accessed on date 20/12/2016

Pawar, A. N., & Mane, S. R. (2015). Horticulture Development in Maharashtra and the Way Forward. *International Journal of Multifaceted and Multilingual Studies*, I(IX).

Prarthana Rajkumari (2017). Self reliance in food – Green and White revolution with special reference to North East India. *Press Information Bureau Government of India Special Service and Features*

Press Information Bureau Government of India Ministry of Agriculture & Farmers Welfare (2017). Final Estimate of 2015-16 & First Advance Estimates for 2016-17 of Area & Production of Horticulture Crops. Available At; <http://pib.nic.in/newsite/PrintRelease.aspx?relid=158533> Accessed on date 11/01/2018

Production of Organic acid. Available at:

<http://vle.du.ac.in/mod/book/print.php?id=13559&chapterid=30258> . Accessed on date 15/01/2018

Punjabi, M., & Mukherjee, A. (2015). Grape exports under GLOBALGAP certification; the Mahindra & Mahindra initiative in India. *Food and Agriculture Organization of the United Nations*

Rais, M., & Sheoran, A. (2015). Scope of Supply Chain Management in Fruits and Vegetables in India. *Food Processing & Technology*, Vol. 6, Issue 3

Raisins forum, (2018) Available at: <http://www.madehow.com/Volume-4/Raisins.html>. Accessed on date 15/02/2018

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Rath, S. (2003). Grape Cultivation for Export: Impact on Vineyard Workers. *Economic and Political Weekly*, 38(5), 480-489.

Reisch, B. I., Pool, R. M., & et al (n. d.). Wine and Juice Grape Varieties for Cool Climates. Cornell Cooperative Extension Helping you Put Knowledge to Work, Cornell University. Available at <https://ecommons.cornell.edu/bitstream/handle/1813/3558/Wine%20and%20Juice>

- <http://www.krishisewa.com/articles/pht/84-grape-valueaddition.html>. Accessed on date 02/02/2018
- <http://www.reservedbankofindia.org/Foreign%20Investments%20in%20India.pdf>;jsessionid=631AFBD2440DFFD19EC79BD1B1CA4559?sequence=2 . Accessed on date 12/12/2016
- Reserve Bank of India (2017). Foreign Investments in India. Available at <https://rbi.org.in/scripts/FAQView.aspx?Id=26>. Accessed on date 10/04/2018
- Robbins, J. A., & Bell, S. (2008). Introduction to Horticulture and Plant Physiology. *IDAHO Master Gardener University of Idaho Extension*, Chapter 2, Idaho Master Gardener Program Handbook
- Salunkhe, H. A., & Deshmush, B. B. (2012). The overview of Government subsidies to agriculture sector in India. *IOSR Journal of Agriculture and Veterinary Science*, 1(5), 43-47.
- Schrempf, Benjamin and et al (2013). National, Regional, and Sectoral Systems of Innovation – An overview. Report for FP7 Project "Progress", progressproject.eu.
- Sebby, K. (2010). The green revolution of the 1960's and its impact on small farmers in India, *Environmental Studies Undergraduate Student Theses*, Paper no.10.
- Sengupta, A., & Sonwani, D. (2012). Sustainable Development in India with Reference to Agricultural Sector. *International Journal of Emerging Research in Management & Technology*, 24-29, ISSN: 2278-9359.
- Seppänen, S. K. (2008). Regional Innovation Systems and Regional Competitiveness: An Analysis of Competitiveness Indexes. Paper to be presented at *DRUID-DIME Academy Winter 2008 PhD Conference on Geography*, Innovation and Industrial Dynamics.
- Shah, D. (2007). Assessing Economics of Grape Cultivation in India. *Munich Personal RePEc Archive*, Paper No. 3927
- Shah, D. (2015). Relationship between Wholesale Prices, Retail Prices, Export Prices (FOB), Price Realized by Farmers and Details of Contributing Factors for the Price Difference for Onion and Grapes for Maharashtra. *Agro-Economic Research Centre Gokhale Institute of Politics and Economics (Deemed to be University)*, Pune – 411 004
- Sharma, A. K. (2012). Value addition in grapes and various products of grapes. Krishisewa, Available at; <http://www.krishisewa.com/articles/pht/84-grape-valueaddition.html>. Accessed on date 02/02/2018

- Sharma, A. K. (2013). Grape juice - take a sip for health. Krishisewa, Available at; <http://www.krishisewa.com/articles/production-technology/188-grapes-cultivation-juice.html>. Accessed on date 02/02/2018
- Sharma, A. K. (2017). Raisin making in India: Technological interventions for better quality. *ResearchGate*,
- Sharma, A. K., Somkuwar, R. G., & et al (2017). Evaluation of Grape Varieties for Juice Quality Under Tropical Conditions of Pune Region. Proceedings of the National Academy of Sciences, India Section B: Biological Sciences, Springer. <https://link.springer.com/content/pdf/10.1007%2Fs40011-017-0894-4.pdf>
- Sharma, D. (2011). Topography of the Indian Wine Making Industry: A Glocal Perspective. *Institute of Chartered Financial Analysts of India (ICFAI) University Dehradun, Uttarakhand, India*
- Sharma, P., Srinivasa B. S. Nookala & et al (2012). India's National and Regional Innovation Systems: Challenges, Opportunities and Recommendations for Policy Makers. (Publisher: Routledge) *Industry and Innovation*, 19(6), 517–537.
- Shikhamany S.D., Borade Swapnil V., & et al (2016). Variation in the Response of Thompson Seedless Grapes and its Clones to Chemical Thinning. *International Journal of Horticulture*, 6(20), 1-13.
- Shikhamany, S. D., & Srinivasulu, B. (2008). Wine Grape-Cultivation Wine Making and Improvement of Wine Quality. Andhra Pradesh Horticultural University, Venkataramannagudem, West Godavari District – 534 101 (A.P) Available at <http://www.drysrhu.edu.in/uploads/WINE%20GRAPE-CULTIVATION%20WINE%20MAKING%20AND%20IMPROVEMENT%20OF%20WINE%20QUALITY.pdf> .pdf. Accessed on date 24/07/2016
- Shinde, P. V. (2016). An Economics of Grapes under Horticulture in India. *International Journal of Research and Scientific Innovation*, III(II), ISSN 2321 - 2705
- Shinde, S.D., Nimbalkar, C.A. & et al (2016). Growth performance of Principal Crops in Maharashtra. *International Research Journal of Multidisciplinary Studies*, 2(3), ISSN (Online): 2454-8499
- Shroff, S., & Kajale, J. (2008). Government Intervention in Horticulture Development the Case of Maharashtra. *Indian Journal of Agricultural Economics*, 63(3).

- Sierra Bright, (2016). 9 Impressive Benefits of Grapeseed Oil For Skin, Hair & Health. Available at; [http:// www.naturallivingideas.com/grapeseed-oil/](http://www.naturallivingideas.com/grapeseed-oil/). Accessed on date 03/02/2018
- Singh, A., (n .d.). Horticulture Statistics. Agriculture & Cooperation, Government of India. Available at <http://webcache.googleusercontent.com/search?q=cache:-2Bv-GZQvi0J:www.nhm.nic.in/conf-ppt/3-horticulture-statistics.ppt+&cd=1&hl=en&ct=clnk&gl=in> . Accessed on date 30/11/2016
- Singh, K., & Walia, R. K., (2015). Foreign Direct Investment (FDI) & Agriculture Sector in India. *Indian Journal of Research*. 4(3), ISSN - 2250-1991
- Singh, M., & Mathur, V. C. (2008). Structural Changes in Horticulture Sector in India: Retrospect and Prospect for XIth Five Year plan. *Indian Journal of Agricultural Economics*, 63(3).
- Smith, O., Avila, M., & Abdi, N. (2004). Strengthening Linkages between Farmers' Organizations and Agricultural Research Institutions. Global Forum on Agricultural Research (GFAR). 36th World Farmers' Congress of IFAP (International Federation of Agricultural Producers), Washington D.C. USA.
- Sodal, S. (n. d.). Strategies for saving water in irrigation an experience in Maharashtra state, India. *Secretary (CAD) Irrigation Department, Government of Maharashtra India*, Available at <http://www.watertech.cn/english/sodal.pdf> Accessed on date [29/02/2016](http://www.watertech.cn/english/sodal.pdf).
- Sonawane, G. T., & Shendage, B. R. (2016). The Land of Wines Nashik Valley, Maharashtra. *Research Front an International Peer-Reviewed Multidisciplinary Research Journal*, 4(3).
- State of Indian Agriculture, (2015-16). *Government of India Ministry of Agriculture & Farmers Welfare Department of Agriculture, Cooperation & Farmers Welfare Directorate of Economics & Statistics*, New Delhi
- Sternberg, R., & Arndt, O. (2001). The Firm or the Region: What Determines the Innovation Behavior of European Firms?. *Economic Geography*, 77(4), 364-382.
- Suryawanshi, P. D., Niketh, L., & Dhembare, D. Y. (2016). Knowledge of grape growers on the use of bio-pesticides. *International Journal of Farm Sciences*, 6(1), 301-306.

- Swanson, E. B. (1994). Information systems innovation among organizations. *Management Science*, 40(9), 1069-1092.
- Thamizhselvan, K., & Murugan, S. P. (2012). Marketing of Grapes in Theni District. *International Journal of Marketing and Technology*, 2(9). ISSN: 2249-1058
- Thorat, V. S., Bhogal T. S., & Ghule, A. (2012). *Dynamics of Area, Production and Export of Grapes in India A Performance Analysis*, LAP LAMBERT Academic Publishing, Germany
- United Nations Economic and Social Commission for Asia and the Pacific UNESCAP (2007). Enhancing Export Competitiveness of Asian Fruits.
- Upendra V. Dhonde (2014) Ground Water Information Nashik District Maharashtra. *Government of India Ministry of Water Resources Central Ground Water Board, Central Region, Nagpur*. Available at:
http://cgwb.gov.in/district_profile/maharashtra/nashik.pdf
- Vibhute, V. (2013). Introduction. Analab 26, Sidheshwar Shopping Centre, Panch Kata, Solapur 413001. Available at:
<http://shodhganga.inflibnet.ac.in/bitstream/10603/49498/1/anup%20vibhute%20complete%20thesis.pdf> . Accessed on Date 12/06/2016
- Vineetha (2014). 42 Amazing Benefits and Uses of Grapes. Health Beckon. Available at:
<https://www.healthbeckon.com/start/>. Accessed on date 07/02/2018
- Vinegar Forum (2018). Vinegar. Available at; <http://www.madehow.com/Volume-7/Vinegar.html>. Accessed on date 15/01/2018
- Waghmare, V. M., & Ingle, P. (2015). *Innovation in Agriculture Sector and Its Impact on Landless Labourers in Maharashtra*. Dr. Babasaheb Ambedkar Art's and Commerce College, Nagsenvan, Aurangabad (M. S.). *One Day National Conference on Recent Trends in Teaching and Research: Opportunities, Nature and Features*, Ajanta Prakashan, Aurangabad Maharashtra. ISBN No. 978-93-83587-33-9
- Waghmare, V. M. and Sinha, K. (2016). Role of Regional Innovation System in the Irrigation Sector in Maharashtra. *Research Front an International Peer-Reviewed Multidisciplinary Research Journal*, 4(1), 131-142.

- Weisbrod, G., and Simmonds, D. (2011). Defining Economic Impact and Benefit Metrics from Multiple Perspectives: Lessons to be learned from Both Sides of The Atlantic. *Paper presented at the European Transport Conference, Glasgow.*
- Williams, L. K., & McGuire, S. J. (2010). Economic creativity and innovation implementation: the entrepreneurial drivers of growth? Evidence from 63 countries. *Small Business Economics, 34*(4), 391-412.
- Wines Spain, (2017), 2017 Vintage Report for Spain: a challenging year in the vineyard but high quality at harvest. Available at; http://www.foodswinesfromspain.com/spanishfoodwine/wcm/idc/groups/public/documents/documento_anexo/mde3/nzcz/~edisp/dax2017773503.pdf. Accessed on date 23/02/2018
- Zygiaris, S. (2009). Regional Innovation System Failures and Highlights. *The Journal of the Romanian Regional Science Association, 3*(2).

Bibliography

- Abdouli, A., & McGrenra, G (2012). Arab Republic of Egypt Country strategic opportunities programme: Enabling poor rural people to overcome poverty. Available at: <https://webapps.ifad.org/members/eb/106/docs/EB-2012-106-R-10.pdf>. Accessed 3 Nov. 2012
- Abdulai, A., & Huffman, W. E. (2005). The Diffusion of new agricultural technologies: the case of crossbred-cow technology in Tanzania. *American Journal of Agricultural Economics*, 87, 645-59.
- Acs, Z., Audretsch, D. B., & et al (1992). Real effects of academic research: comment. *American Economic Review*, 82, 363-367.
- Adesina, A. A., & Baidu-Forson, J. (1995). Farmers' perceptions and adoption of new agricultural technology: evidence from analysis in Burkina Faso and guinea, West Africa. *Agricultural Economics*, 13.
- Aghion, P., & Howitt, P. (1992). A model of growth through creative destruction. *Econometrica*, 60, 323-351.
- Alcon, F. and et al. (2013). Forecasting deficit irrigation adoption using a mixed stakeholder assessment methodology. *Technological Forecasting & Social Change*, TFS-17786, 11.
- Alebaki, M., & Iakovidou, O. (2011). Market Segmentation in Wine Tourism: A Comparison of Approaches. *Tourismos: An International Multidisciplinary Journal of Tourism*, 6(1), 123-140.
- Amekawa, Y. (2009). Reflections of the growing influence of good agricultural practices in the global south. *Journal of Agricultural and Environmental Ethics*, 22(6), 531-557
- Anbari, M., Bagheri, R., & Davodi, H. (2013). Drip irrigation and social factors affecting agricultural water management in Lorestan province. *Scholars Research Library*, 4(2):13-21.
- Anderson, K., & Nelgen, S. (2011). *Global wine markets, 1961 to 2009: a statistical compendium*. Adelaide: University of Adelaide Press.
- Annual Report (2015-16). Government of India Ministry of Commerce and Industry Department of Industrial Policy & Promotion.

- Antle, J. (1983). Testing the stochastic structure of production: a flexible moment- based approach. *Journal of Business and Economic Statistics*, 1, 192-201.
- Asheim, B.T. (1995). Regionale innovasjonssystem - en sosialt og territorielt forankret teknologipolitikk, *Nordisk Samhällsgeografisk Tidskrift* 2017-34.
- Asheim, B.T. (2007). Differentiated knowledge bases and varieties of regional innovation systems Innovation. *The European Journal of Social Science Research*, 20(3), 223-241.14
- Asheim, B.T., & Coenen, L. (2006). Contextualising Regional Innovation Systems in a Globalising Learning Economy: On Knowledge Bases and Institutional Frameworks. *The Journal of Technology Transfer*, 31(1), 163-173.
- Asheim, B.T., & Gertler, M.S. (2005). *The geography of innovation: regional innovation systems*. In J. Fagerberg, D.C. Mowery and R.R. Nelson (ed.), *The Oxford handbook of innovation*, Oxford: Oxford University Press, 291-317.
- Asheim, B.T., & Isaksen, A. (1997). Location, agglomeration and innovation: Towards regional innovation systems in Norway?. *European Planning Studies*, 5(3), 299-330.
- Asheim, B.T., & Isaksen, A. (2002), Regional Innovation Systems: The Integration of Local Sticky and Global Ubiquitous Knowledge. *Journal of Technology Transfer*, 27(1), 77-86.
- Asheim, B.T., Boschma, R., & Cooke, P. (2011). Constructing Regional Advantage: Platform Policies Based on Related Variety and Differentiated Knowledge Bases. *Regional Studies*, 45(7), 893-904.
- Asheim, B.T., Coenen, L., & Moodysson, J. (2015), *Methods and applications of regional innovation systems analysis* in C. Karlsson, M. Andersson and T. Norman (ed.), *Handbook of Research Methods and Applications in Economic Geography*, Cheltenham: Edward Elgar, 272-290.
- Asheim, B.T., Moodysson, J., & Tödtling, F. (2011). Constructing Regional Advantage: Towards State-of-the-Art Regional Innovation System Policies in Europe?, *European Planning Studies*, 19(7), 1133-1139.
- Asheim, B.T., Smith, H.L., & Oughton, C. (2011), Regional Innovation Systems: Theory, Empirics and Policy. *Regional Studies*, 45(7), 875-891.

- Ashenfelter, O., & Storchmann, K. (2016). Climate change and wine: A review of the economic implications. *Journal of Wine Economics*, 11(1), 105–138.
- Autio, E. (1998). Evaluation of RTD in regional system of innovation. *European Planning Studies*, 6(2), 131-140.
- Ball, V. E., Bureau, J. C., & et al (2001). Levels of farm sector productivity: an international comparison. *Journal of Productivity Analysis*, 15, 5-29.
- Bangkok & Thailand (2009). Technological and management innovations in irrigation water management and their impact on agricultural production. *Thierry facon senior water management officer regional office for Asia and the pacific FAO*
- Beresford, M. (1990). Vietnam: socialist agriculture in transition. *Journal of Contemporary Asia*, 20, 466–486.
- Besley, T., & Case, A. (1993). Modeling technology adoption in developing countries. *American Economic Review*, 83, 396-402.
- Biggs, S. D. (1990). A multiple source of innovation model of agricultural research and technology promotion. *World Development*, 18, 1481–1499
- Bikhchandani, S., Hirshleifer, D., & et al (1992). A theory of fads, fashion custom and cultural change as informational cascades. *Journal of Political Economy*, 100(5), 992-1026
- Bisson, L.F, Waterhouse AL., et al (2002). The present and future of the international wine industry. *Nature International Journal of Science*, 418, 696-699.
- Boubacar, I. (2010). Introducing sustainable agriculture techniques to the inguituareg community of northern niger. Available at: <http://academicarchive.snhu.edu/bitstream/handle/10474/1634/sced2010boubacar.pdf?sequence=2>. Accessed 08 Jan. 2015.
- Boubee, R. D., Leeuwen, C. V., & Dubourdieu, D. (2000). Organoleptic Impact of 2-Methoxy-3-isobutylpyrazine on Red Bordeaux and Loire Wines. Effect of Environmental Conditions on Concentrations in Grapes during Ripening Dominique. *Journal of Agricultural and Food Chemistry*, 48(10), 4830–4834.
- Brito, L.T. L., Soares, J. M., & et al (2008). Environmental Impacts of Agricultural Activities in Irrigated Area Growing Grapes in the Submédio São Francisco River Valley, Brazil. *CIGR International Conference of Agricultural Engineering*

XXXVII Congresso Brasileiro De Engenharia Agrícola – Conbea, Brazil.
Available at

<https://www.alice.cnptia.embrapa.br/alice/bitstream/doc/160344/1/OPB1897.pdf>.

Accessed on date 18/12/2016

- Brown, G., & Getz, D. (2005). Linking Wine Preferences to the Choice of Wine Tourism Destinations. *In Journal of Travel Research*, 43(3), 266-276.
- Camagni, R. P. (1995). The concept of innovative milieu and its relevance for public policies in European lagging regions. *Papers in Regional Science*, 74(4), 317-340.
- Carl, E. P., & Latha N. (2012). Innovation and research by private agribusiness in India. *International Policy Research Institute*.
- Carlsson, B., Jacobsson S., & et al (2002). Innovation systems: analytical and methodological issues. *Research Policy*, 31(2), 233-245.
- Charters, S., & Ali-Knight, J. (2002). Who is the wine tourist?. *Tourism Management*, 23(3), 311-319.
- Connelly, R. (1992). The Effect of Child Care Costs on Married Women's Labor Force Participation. *Review of Economics and Statistics*, 74, 83-90.
- Cooke, P. (1992). Regional innovation systems: competitive regulation in the new Europe. *GeoForum*, 23, 365-382.
- Cooke, P. (2001). Regional innovation systems, clusters and the knowledge economy. *Industrial and Corporate Change*, 10(4), 945-974.
- Cooke, P. (2006). *Regional Innovation Systems as Public Goods*. UNITED Nations Industrial Development Organization (UNIDO), Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria.
- Cooke, P., & Morgan, K. (1994). The regional innovation system in Baden-Württemberg. *International Journal of Technology Management*, 9, 394-429.
- Cooke, P., Uranga, M. G., & et al (1997). Regional innovation systems: institutional and organisational dimensions. *Research Policy*, 26(4-5), 475-491.
- Davis, G., Ananga, A., & et al (2012). Elevated gene expression in chalcone synthase enzyme suggests an increased production of flavonoids in skin and synchronized red cell cultures of north american native grape berries. *DNA Cell Biol*, 31, 939-945.

- Deshmukh, J. M., & Bhange, S. B. (2016). A Scale for Measurement of Management Efficiency of Grape Growers. *Research Journal of Extension Education*, 16(2), 81-85
- Deshpande, R. S., & Reddy, V. R. (1990). Social dynamics and farmers' society: a case study of pani Panchayat. *Indian Journal of Agricultural Economics*, 45.
- Dinesh Kumar, N. A. (2009). Groundwater irrigation versus surface irrigation. *Economic and political weekly*, 44, 50.
- Dodd, T., & Beverland, M. (2001). Winery tourism life-cycle development: A proposal model. *Tourism Recreation Research*, 26(2), 11-21.
- Doloreux, D. (2002). What we should know about regional systems of innovation. *Technology in Society*, 24, 243-263.
- Donnez, D., Kim, K. H., & et al (2011). Bioproduction of resveratrol and viniferins by an elicited grapevine cell culture in a 2 L stirred bioreactor. *Process Biochem*, 46, 1056–1062
- Duchêne, E., & Schneider, C. (2005). Grapevine and climatic changes: A glance at the situation in Alsace. *Agronomy for Sustainable Development*, 25(1), 93–99.
- Economic Survey of Maharashtra (2012-13). *Directorate of economics and statistics, planning department, Government of Maharashtra, Mumbai.*
- Economic Survey of Maharashtra (2014-15). Directorate of Economics and Statistics, Planning Department, Government of Maharashtra, Mumbai. Available at <https://www.maharashtra.gov.in/Site/upload/WhatsNew/Economic%20Survey%20of%20Maharashtra...pdf>. Accessed on date 15/12/2016
- Edquist, C., & Hommen, L. (1999). Systems of innovation: theory and policy from the demand side. *Technology in Society*, 21, 63–79.
- Feder, G., & Slade, R. (1984). The acquisition of information and the adoption of new technology. *American Journal of Agricultural Economics*, 66, 312-20
- Feder, G., & Slade, R. H. (1986). A comparative analysis of some aspects of the training and visit system of agricultural extension in India. *Journal of Development Studies*, 22.
- Feder, G., & Umali, D. L. (1993). The adoption of agricultural innovations: a review. *Technological Forecasting and Social Change*, 43, 215- 39

- Ferrise, R., Trombi, G., Moriondo, M., & Bindi, M. (2016). Climate change and grapevines: A simulation study for the Mediterranean basin. *Journal of Wine Economics*, 11(1), 88–104.
- Foster, A.D., & Rosenzweig, M. R. (1995). Learning by doing and learning from others: human capital and technical change in agriculture. *Journal of Political Economy*, 103(6), 1176 – 1209.
- Gade, A. D, Gaikwad S. B., & Gaikwad N. S. (2014). Trends in production and exports of grapes in India. *Indian Streams Research Journal*, 4(2), 1-5.
- Gade, A. D. (2015). Growth and spatial distribution of wine industry in Sangali district. *Research Front – an International Journal*, 3(2), 81-86.
- Gade, A.D., & Gaikwad, S. B. (2014). Pattern of Grape Concentration in Sangli district of Maharashtra. *Research Front. International Multidisciplinary Research Journal*, 2(3), 27-31.
- Gaikwad, S. D. (2005). Grapevine cultivation in Sangli district of Maharashtra: A Geographical Analysis. Unpublished Ph.D. thesis submitted to Shivaji University, Kolhapur.
- Gambetta, G. (2016). Water stress and grape physiology in the context of global climate change. *Journal of Wine Economics*, 11 (1), 168–180.
- Georgiev, V, Anthony Ananga, & et al (2014). Recent Advances and Uses of Grape Flavonoids as Nutraceuticals. *Nutrients*, 6, 391-415
- Geroski, P. A. (2000). Models of technology diffusion. *Research Policy*, 29, 603-626.
- Gerosky, P. A., & Walters, C. F. (1995). Innovative activity over the business cycle. *The Economic Journal*, 105, 916-928.
- Getz, D., & Brown G., (2006). Critical success factors for wine tourism regions: a demand analysis. *Tourism Management*, 27(1), 146-158.
- Golait, R. (2007). Current Issues in Agriculture Credit in India: An Assessment. *Reserve Bank of India Occasional Papers*. 28.
- Government of India, (2011). *Indian Council of Agricultural Research*. Dr Rajendra Prasad Road, Krishi Bhavan New Delhi 110 114 India
- Government of Maharashtra (2012). *State Excise Department The Maharashtra Excise Manual Vol. I. Commissioner*, State Excise Maharashtra State, Mumbai-400 023.

- Grage, E. (2000). Garlic wine at China. *South African J. Enology*, 2(2), 89-92.
- Grover, V. I., & et al (2010). Integrated water resources management in Jordan. *The Economic Research Forum (ERF)*, Working Paper 577.
- Gungor, H., & Gungor, G. (2004). The economic structures and marketing strategies of small family enterprises engaged with wine production in the north-west of Turkey. *International Symposium on Grapevine Growing, Commerce and Research*, 652: 519-525.
- Haile, A. M., Depeweg, H., & et al (2003). Smallholder drip irrigation technology potentials and constraints in the highlands of eritrea. *Mountain Research and Development*, 23(I), 27-31.
- Hall, C.M., Sharples, L., Cambourne, B., & Macionis, N. (2000). *Wine Tourism around the World: Development, Management and Markets*. Oxford: Butterworth Heinemann.
- Indian Agricultural Research Institute (2012-13). New Delhi- 110012, India.
- Jaffe, A. (2000). The U.S. patent system in transition: policy innovation and the innovation process. *Research Policy*, 29, 531-558.
- Janneke, J., & Frewer, L. (2004). Monitoring Consumer Confidence in Food Safety. *An Exploratory Study Food Journal*, 106(10-11), 837-849.
- Jean-Jacques, L., & Jean-Charles, R. (1997). Collusions in organisations. *The Scandinavian Journal of Economics*, 99.
- Jenster, P., & Cheng, Y. (2008). Dragon wine development in the Chinese wine industry. *International Journal of Wine Business Research*, 20(3), 244-255.
- Joshi, V. K., & Attri, D. (2005). Panorama of research and development of wines in India. *Journal of Scientific and Industrial Research*, 64, 9-18.
- Just, R.E., & Zilberman, D. (1983). Stochastic structure, farm size and technology adoption in developing agriculture. *Oxford Economic Papers*, 35 (2), 307-328
- Kale, K. J., (2007). Me Draksh Wine Uddoyog Ubharu Shakto ka?. *Maharashtra Industrial Development Corporation*, Mumbai.
- Karl, D. (2006). The cucumber wine in France. *South African J. Enology & Viticulture*, 21(3), 29-30.

- Karlsen, J. E., & Karlsen H. (2013). *Classification of tools and approaches applicable in foresight studies*. In Friesz, T. L. (ed.), *Recent developments in foresight Methodologies, Complex networks and dynamic systems*. (pp 27-52). New York Springer.
- Kerr, S., & Newell, R. G. (2003). Policy-Induced technology adoption: evidence from the U.S. lead Phasedown. *Journal of Industrial Economics*, 51, 317-43
- Kihlstrom, R. E. (1976). Firm demand for information about price and technology. *Journal of Political Economy*, 84, 1335-41.
- Kim, K., & Chavas, J. P. (2003). Technological change and risk management: an application to the economics of corn production. *Agricultural Economics*, 29, 125-42.
- Korovkin T. (1992). Peasants grapes and corporations: The growth of contract farming in a Chilean community. *Journal of Peasant Studies*, 19(2), 228-254.
- Koundouri, P. N. (2006). Technology adoption under production uncertainty: theory and application to irrigation technology. *American Journal of Agricultural Economics*, 88(3), 657-670.
- Liso, N. D. (2006). Charles Babbage, Technological Change and the National System of Innovation. *Journal of Institutional and Theoretical Economics (JITE) / Zeitschrift für die gesamte Staatswissenschaft*, 162(3), 470-485.
- Liua, X., & White, S. (2001). Comparing innovation systems: A framework and application to China's transitional context. *Research Policy*, 30, 1091–1114.
- Ludvall, B. A. (1998). Why study national systems and national styles of innovation?. *Technology Analysis & Strategic Management*, 10(4), 407-421.
- Lundvall, B. A. (1999). National Business Systems and National Systems of Innovation. *International Studies of Management & Organization*, 29(2).
- Lundvall, B. A. (2007). National Innovation Systems Analytical Concept and Development Tool. *Industry and Innovation*, 14(1), 95–119.
- Lundvall, B., & Borrás, S. (2005). *Science, Technology and Innovation Policy*, Edited by, Jan Fagerberg, David C. Mowery and Richard R. Nelson, *The Oxford handbook of Innovation*. Page no. 615, Oxford University press Inc., New York

- Luquet, D., Vidal, A., & et al (2005). More crop per drop: how to make it acceptable for farmers?. *Agricultural Water Management*, 76, 108 –119.
- Madan, T. N. (1969). Who Chooses Modern Medicine and Why. *Economic and Political Weekly*, 4(37).
- Mahmoud, T., & Gairola, S. (2013). Traditional knowledge and use of medicinal plants in the Eastern Desert of Egypt: a case study from Wadi El-Gemal National Park. *Journal of Medicinal Plants Studies*, 1(6), 10-17.
- Malerba, F. (2002). Sectoral systems of innovation and production. *Research Policy*, 31(2), 247-264.
- Mane, K. M. (2015). Grape Cultivation in Sangli District. *International journal of researches in biosciences, agriculture and technology*, II(7), 476-478.
- Martin, S., & Scott, J. (2000). The nature of innovation market failure and the design of public support for private innovation. *Research Policy*, 29, 437-448.
- Mashelkar, R.A. (2001). Intellectual Property Rights and the Third World. *Current Science*, 81(8), 25.
- Mathur, A. (2003). Who Owns Traditional Knowledge?. *Economic and Political Weekly*, 38(42), 4471-4481.
- Meinzen-Dick, R., K. V. Raju & et al (2002). What affects organization and collective action for managing resources? evidence from canal irrigation systems in India. *World Development*, 30(4), 649–666.
- Mitra, A. K. (1996). Agricultural production in Maharashtra: Growth and instability in the context of new technology. *Economic and political weekly*, 25(52).
- Mitra, A. K. (1996). Irrigation sector reforms issues and approaches. *Economic and Political Weekly*, 31.
- Mooventhan, P., Kadian, K.S et al (2016). Symbolic Adoption of Dairy Farming Practices by Tribal Dairy Farmers in Chhattisgarh: An Experimental Study. *Research Journal of Extension Education*, 16,(2), 15-18.
- Mothe, J., & Paquet, G. (1998). National Innovation Systems, 'Real Economies' and Instituted Processes. *Small Business Economics*, 11(2), 101-111.
- Muwah, A. N. (2010). Modernity in Traditional Medicine Women’s Experiences and Perceptions in the Kumba Health District, SW Region Cameroon. Master Thesis

Submitted in Partial Fulfillment for the Award of Master of Science Degree in Public Health Sciences.

- Mytelka, L., & Farinelli, F. (2000). Local Clusters, Innovation Systems and Sustained Competitiveness. *United Nations University, Institute for New Technologies, Keizer Karelplein 19, 6211 TC Maastricht, the Netherlands*
- Nakov, B. K., Nakova, M. B., & Rehab, M. A. A. (2002). Long Term Assessment of Pollution Problems in Grapes Cenosys. *Journal of Environmental Protection and Ecology*, Vol. 3(4), 890-895.
- Narayanamoorthy, A. (1992). Impact of tractors and weedicides on yield and employment in sugarcane cultivation. *Journal of Rural Development*, 1(3), 351-62.
- Narayanamoorthy, A. (1996). Evaluation of drip irrigation system in Maharashtra. gokhale institute mimeograph series no. 42 *Pune: Agro-Economic Research centre, Gokhale institute of politics and economics*
- Nasierowski, W., & Arcelus, F. J. (2003). On the efficiency of national innovation systems. *Socio-Economic Planning Sciences*, 37, 215–234
- Naveen, B. S., Kunal, L.B., & Dodamani, M. T. (2010). Economics of value addition of grape wine. *Agric. Update*, 5 (1 & 2): 113-116.
- Nelle, S. (2010). Building regional innovation capability: the coal river valley experience. AIRC Working Paper Series WP/0410, *Australian Innovation Research Centre University of Tasmania*.
- Nelson, R. R., & Phelps, E.S. (1996). Investment in humans, technological diffusion and economic growth. *The American Economic Review*, 56, 69-75.
- Nikam, V. R., & Singh, P. (2016). Study of Behavioural Traits of Grape Exporters in Maharashtra. *Indian Research Journal of Extension Education*, 16(2), 19-24.
- North, C. D. (1990). Institutions institutional change and economic performance Cambridge University Press, Cambridge.
- North, C. D., & Thomas, R. P. (1970). An economic theory of the growth of the Western World. *The Economic History Review*, 23.

- Olivier, H. (1990). The impact of large-scale irrigation schemes on regional development: examples from southern Africa. *The Geographical Journal*, 156(2), 181-186.
- Patil, A. B., (2008). A study on constraints of grape exporting farmers of Maharashtra state. *Ph. D. Thesis, University of Agricultural Sciences, Dharwad, (India)*.
- Patil, P.V. (2013). Drip Irrigation Technology in Agriculture of Sangli District (Maharashtra): A Geographical Study. *Journal of Current Science*, 1(1), 36-40.
- Patil, U. G., & Patil, S. N. (2013). Comparison of environmental impact of barrages. *International Journal of Recent Trends in Science and Technology*, 6(1), 17-22.
- Pavelic, P. P. (2012). Role of Groundwater in buffering irrigation production against climate variability at the basin scale un south-west India. *Agricultural Water Management*, 103, 78-87.
- Peedikakandi, S., & Devi, P. I., (2016). Exploring The Farm Level Irrigation Innovations to Cope Water Scarcity in Kerala. *Research Journal of Extension Education*, 16(2), 41-46.
- Popper, R. (2008). *Foresight Methodology*. In Georghiou, L., Harper, J. C. & et al (ed.), *The handbook of technology foresight concepts and practice*, (pp. 44-88) Edward Elgar UK and USA.
- Prashant Sharma, P., & Badodiya, S. K. (2016). Impact of Participation of Rural Women in Agriculture Activities. *Indian Research Journal of Extension Education*, 16(2), 12-14.
- Pretorius, I. S., & Hoj, P. B. (2005). Grape and wine biotechnology: Challenges, opportunities and potential benefits. *Australian Journal of Grape Wine Research*, 11(2), 83-108.
- Rallet, A., & Torre A. (2000). Is geographical proximity necessary in the innovation networks in the era of global economy?. *Geojournal*, 49, 373-380.
- Rath, S. (2003). Grape cultivation for export-impact on vineyard workers. *Economic and Political Weekly*, 38(5), 480-489.
- Reardon, T., & Berdegue, J. A. (2002). The rapid rise of supermarkets in Latin America: Challenges and opportunities for development. *Development Policy Review*, 20(4), 371-388.

- Rogaly, B. (2008). Intensification of workplace regimes in British horticulture: The role of migrant workers. *Population, Space and Place*, 14(6), 497-510.
- Rogers, E. M. (1976). New product adoption and diffusion. *Journal of Consumer Research*, 2, 290 -301.
- Rose, N.L., & Joskow, P.L. (1990). The diffusion of new technologies: evidence from the electric utility industry. *Rand Journal of Economics*, 21, 354-73
- Saha, A., Love, A.H., & et al (1994). Adoption of emerging technologies under output uncertainty. *American Journal of Agricultural Economics*, 76, 386-846.
- Saleth, M. (2000). Institutional issues in Indian agriculture. *Research Report, Institute of Economic Growth, Delhi*.
- Saleth, R. M. (1999). Irrigation privatisation in India: options, issues and experience. *Economic and Political Weekly*, 34(26), A86-A92.
- Saloner, G., & Shepard, A. (1995). Adoption of technologies with network effects: an empirical examination of the adoption of automated teller machines. *Rand Journal of Economics*, 26, 479-501.
- Santos, E. L. (1996). Evaluation and adoption of irrigation technologies: management-design curves for furrow and level basin systems. *Agricultural Systems*, 52, 317-29.
- Sathish, B.S., & Chandra, S. (2012). Wine marketing an untamed market in India. *Radix International Journal of Research in Social Science*, 1(11), 1-17.
- Schaible, G. D., & Marcel P. A. (2012). Water conservation in irrigated agriculture: trends and challenges in the face of emerging demands. *Department of Agriculture, Economic Research Service EIB-99, US*
- Schaible, G.D., & Aillery, M.P. (2003). Irrigation technology transitions in the mid-plains states: implications for water conservation/water quality goals and institutional changes. *Water Resources Development*, 19(1), 67-88.
- Schrieks, I. C., van den Berg et al (2013). Effect of red wine consumption on biomarkers of oxidative stress. *Alcohol Alcohol*, 48, 153–159.
- Schultz, T.W. (1972). The increasing economic value of human time. *American Journal of Agricultural Economics*, 54, 843-50.

- Schultz, T.W. (1975). The value of the ability to deal with disequilibria. *Journal of Economic Literature*, 13, 827-846.
- Selwyn, B. (2007). Labour process and workers bargaining power in export grape production, North East Brazil. *Journal of Agrarian Change*, 7(4), 526-553.
- Selwyn, B. (2012). Beyond firm-centrism: Re-integrating labour and capitalism into global commodity chain analysis. *Journal of Economic Geography*, 12(1), 205-226.
- Sengupta, N. (1991). Managing common property: irrigation in India and the Philippines. *Indo-dutch studies on development alternatives*, No.6, Sage Publication, New Delhi
- Seppänen, S. K. (2008). Regional innovation systems and regional competitiveness: an analysis of competitiveness indexes. *Paper to be presented at DRUID-DIME Academy Winter 2008 PhD Conference on geography, innovation and industrial dynamics*.
- Shah, T. (1998). Water against poverty: livelihood-oriented water resource Management. *Water Nepal*, 6, 117-43.
- Shah, T. (2007). Crop per Drop of Diesel? Energy Squeeze on India's Smallholder Irrigation. *Economic and Political Weekly*, 42(39), 4002-4009.
- Shinde, P.V. (2016). An Economics of Grapes under Horticulture in India. *International Journal of Research and Scientific Innovation*, 3(2), 69-71.
- Simona & Iammarino (2006). An evolutionary integrated view of regional systems of innovation: concepts, measures and historical perspectives. *European Planning Studies*, 13(4).
- Simonne, E., & Hochmuth, R., et al (2012). Drip irrigation systems for small conventional vegetable farms and organic vegetable farms. University of Florida
- Sindhu S., & Radhai Sri, S. (2015). Versatile Health Benefits of Active Components of Grapes (*Vitis Vinifera*). *Indian Journal of Applied Research*, 5(4), 289- 291.
- Soares, M. C. C., & José, E. C. (2013). Innovation Systems and Inclusive Development: Some evidence based on empirical work. International Workshop and Journal Special Issue on New Models of Innovation for Development, Manchester University, Manchester UK.

- http://www.cdi.manchester.ac.uk/medialibrary/news_and_events/SoaresCassiolaToPreWorkshopPaper.pdf . Accessed on date 15/10/2015
- Sood, D. (2012). Wine market update 2012. USDA Foreign Agricultural Service, GAIN Report Number IN2162, Global Agricultural Information Network: 1-23.
- Sophocleous and Marios (2007). The science and practice of environmental flows and the role of Hydrogeologists. *Ground Water*, 45(4), 393-401.
- Sreeram, V., Prasad, S.V., & Lakshmi, T. (2015) A Study on entrepreneurial behaviour of Kudumbashree Neighbourhood Group (NHG) Members in Kerala. *Indian Research Journal of Extension Education*, 15(2), 123-126.
- Stallings, J.L. (1960). Weather indexes. *Journal of Farm Economics*, 42, 180-86
- State of Indian agriculture (2012-13). Government of India ministry of agriculture department of agriculture and cooperation directorate of economics and statistics, New Delhi.
- Sternberg, R., & Arndt, O. (2001). The Firm or the Region: What Determines the Innovation Behavior of European Firms?. *Economic Geography*, 77(4), 364-382.
- Stoneman, P. L., & David, P. A. (1986). Adoption subsidies vs. information provision as instruments of technology policy. *Economic Journal*, 96, 142-50.
- Stoneman, P.L. (2002). The economics of technological diffusion. *Oxford Blackwell Publishers*
- Suresh Pal, S. (2008). Agricultural R&D policy and institutional reforms: learning from the experiences of India and China. *Economic and Political Weekly*, 43(26/27), 145, 147-155.
- Taylor, M. (1992). The economics and politics of property rights and common pool resources. *Natural Resource Journal*, 32.
- Thenmozhi, S., & Thilagavathi, P. (2014). Impact of Agriculture on Indian Economy. *International Research Journal of Agriculture and Rural Development*, 3(1).
- Thirumal Valavan, V., & Radha, Y. (2005). Constraint analysis in production marketing and export of grape in Ranga Reddy district of Andhra Pradesh. J. Respondents. Acharya N. G. Ranga Agricultural University, 33(2), 60-63.
- Vaidyanathan, A. (1985). Water control institutions and agriculture: a comparative perspective. *Indian Economic Review*, 20.

- Vaidyanathan, A. (1994). Food, agriculture and water: second india studies revisited. *Madras: Madras Institute of Development Studies.*
- Vasantdada Sugar Institute (1998). Proceedings of the national seminar on irrigation water management for sugarcane, Pune
- Vedeld, T. (2000). Village politics: heterogeneity, leadership and collective action. *The Journal of Development Studies*, 36.
- Verma, S., & Phansalkar, S. J. (2007). India's water future 2050: potential deviations from business-as usual. *International Journal of Rural Management*, 3(1),149–179.
- Verma, S., Tsephal, S., & et al (2004). Pepsee systems: grassroots innovation underground water stress. *Water Policy*, 6(4), 303-318.
- Vesselin, A., & NIMH-Sofia Austria (2008). Adaptation of irrigation under climate change in Bulgaria.
- Vilanova, M., & Leydesdorff, L. (2001). Why Catalonia cannot be considered as a regional innovation system. *Scientometrics*, 50(2), 215–240.
- Wall, Ellen & Smit, B. (2005). Climate change adaptation in light of sustainable agriculture. *Journal of Sustainable Agriculture*, 27, 113-23.
- Ward, F.A., & Pulido-Velazquez, M. (2008). Water conservation in irrigation can increase water use. *Proceedings of the National Academy of Sciences*, 105(47), 18218-20.
- Weinberger, K., & Lumpkin, T. A. (2007). Diversification into horticulture and poverty reduction: A research agenda. *World Development*, 35(8), 1464-1480.
- Whittlesey, N. K., & Huffaker, N. K. (1995). Water policy issues for the twenty first century. *American Journal of Agricultural Economics*, 77.
- Williams, P. (2001). The evolving images of wine tourism destinations. *Tourism Recreation Research*, 26(2), 3-10.

Glossary

Enology is the study of wines and wine making. In the study of enology often become winemakers or work in commercial laboratories where research is carried out regarding finer aspects of winemaking. Specialized laboratory workers, like lab enologists, work closely with vineyard managers, as they provide test results from field work ordered to diagnose vine diseases and from samples tested from the winery.

Yeast: a microscopic fungus consisting of single oval cells that reproduce by budding, and capable of converting sugar into alcohol and carbon dioxide

Must (must from the Latin vinum mustum, "young wine") is freshly pressed fruit juice (usually grape juice) that contains the skins, seeds, and stems of the fruit.... Making must is the first step in winemaking

Fermentation is the process in which a substance breaks down into a simpler substance. Micro-organisms like yeast and bacteria usually play a role in the fermentation process, creating beer, wine, bread, kimchi, yogurt and other foods.

Aroma a strong, pleasant smell, usually from food or drink: the aroma of freshly baked bread a wine with a light, fruity aroma

Nematodes any of a phylum (Nematoda or Nemata) of elongated cylindrical worms parasitic in animals or plants or free-living in soil or water — called also roundworm

Phylloxera (wasp): any of several plant lice (family Phylloxeridae); especially : one (*Daktulosphaira vitifoliae* synonym *Viteus vitifoliae*) originally of North America but introduced into Europe and elsewhere that produces galls on the leaves and roots of grape vines and is a serious pest especially of vinifera grapes in wine-producing regions

Phytophthora (fungus): any of a group of fungi of the genus *Phytophthora*, which cause a serious plant disease, especially affecting apple and pear trees and potatoes.

Gross Domestic Product is the best way to measure a country's economy. GDP is the total value of everything produced by all the people and companies in the country. It

doesn't matter if they are citizens or foreign-owned companies. If they are located within the country's boundaries, the government counts their production as GDP.

Bio-Engineered Seeds: Genetically modified crops (GMCs, GM crops, or biotech crops) are plants used in agriculture, the DNA of which has been modified using genetic engineering methods. In most cases, the aim is to introduce a new trait to the plant which does not occur naturally in the species.

Inward Foreign Direct Investment (FDI), also called direct investment in the reporting economy, includes all liabilities and assets transferred between resident direct investment enterprises and their direct investors. It also covers transfers of assets and liabilities between resident and nonresident fellow enterprises, if the ultimate controlling parent is nonresident.

Outward Foreign Direct Investment (FDI), also called direct investment abroad, includes assets and liabilities transferred between resident direct investors and their direct investment enterprises. It also covers transfers of assets and liabilities between resident and nonresident fellow enterprises, if the ultimate controlling parent is resident. Outward direct investment is also called direct investment abroad.

Anno Domini a Latin phrase meaning "in the year of the Lord", the full form of the abbreviation AD, which is used when referring to a year after Jesus Christ was born.

Non-Governmental Organization a non-profit organization that operates independently of any government, typically one whose purpose is to address a social or political issue.

Chemical Oxygen Demand: the standard method for indirect measurement of the amount of pollution (that cannot be oxidized biologically) in a sample of water. The chemical oxygen demand test procedure is based on the chemical decomposition of organic and inorganic contaminants, dissolved or suspended in water. The result of a chemical oxygen demand test indicates the amount of water-dissolved oxygen (expressed as parts per million or milligrams per liter of water) consumed by the contaminants, during two hours of decomposition from a solution of boiling potassium dichromate. The

higher the chemical oxygen demand, the higher the amount of pollution in the test sample.

Biological Oxygen Demand: Standard method for indirect measurement of the amount of organic pollution (that can be oxidized biologically) in a sample of water. BOD test procedure is based on the activities of bacteria and other aerobic microorganisms (microbes), which feed on organic matter in presence of oxygen. The result of a BOD test indicates the amount of water-dissolved oxygen (expressed as parts per million or milligrams per liter of water) consumed by microbes incubated in darkness for five days at an ambient temperature of 20°C. Higher the BOD, higher the amount of pollution in the test sample. For the contaminants that cannot be oxidized biologically, chemical oxygen demand (COD) method is used.

Total Dissolved Solids; refers to the amount of minerals, metals, organic material and salts that are dissolved in a certain water volume that is expressed in mg/L. It is directly associated with the quality and purity of water, particularly in water purification systems. Total dissolved solids may be suspended in forms such as: Molecular, Ionized and Microgranular (colloidal sol). The levels of total dissolved solids affect all that lives in, drinks or uses water. Thus, it needs to be measured to ensure the quality of drinking water and the performance in industrial settings involving pipes, valves and other equipment.

Production; it is the process of combining units of inputs (natural, man-made and human resources) to create output (goods and services) capable of satisfying human needs and wants.

Productivity; it is the increase of output from each unit in the production process. There are several ways of achieving productivity. These include the training of workers and the introduction of machinery and equipment into the production process.

Olericulture; a branch of horticulture that deals with the production, storage, processing, and marketing of vegetables

Viticulture: the cultivation of grapes. Not to be confused with viniculture.

Absorption: the method that grapevines use in the uptake of nutrients by the roots in the soil.

Landless Labourers: used to refer to people who do not have any land for farming or who are prevented from owning the land that they farm by the economic system or by rich people who own a lot of land: landless labourers/peasants.

Black Rot: A fungal disease that causes black stains to appear on grapevine leaves. Most prevalent in warm and wet conditions

Bleeding: The phenomenon of sap being expelled from an open pruning wound on the grapevine that often happens during early spring. This is often a sign of good health for the vine also known as weeping.

Bloom: The powdery, waxy substance that is often found on the surface of grapes. While this substance may contain the spores of wild yeast, it is not necessary composed of yeast cells.

Bordeaux mixture: An organic fungicide composed of copper sulfate and calcium hydroxide (lime) and water that was invented in Bordeaux in the late 19th century as a treatment against powdery and downy mildew

Dormancy: The period during a grapevine's growing season where there is no photosynthetic and very little metabolic activity going on. In grapevine this usually occurs after harvest and leaf fall when daily air temperatures stay below 50°F.

Downy Mildew: Fungal infection of grapevines that can negatively impact photosynthesis by covering the leaves in downy patches.

Drip Irrigation: A controlled system of irrigation where water is provided to the grape vine drip by drip in precise amounts by a system of pipes and metered valves. Modern vineyards equipped with sensor technology may have their irrigation pattern computerized with the amount of water being adjusted depending on the data received from the soil sensors.

Duplex Soils: Vineyard soils that include two contrasting soil textures layered, one on top of the other. An example is the vineyards of Western Australia where coarse sand is commonly found over fine grained clay. Duplex soils are categorized based on the color of the sub soil.

Fertilizer: A chemical or natural product (such as manure or compost) used to enrich the soil with one or more of the vital nutrients (nitrogen, phosphorus and potassium) needed for optimal vine development.

Field Blend; a vineyard that is not planted homogeneously to a single grape variety but, rather to several grape varieties growing interspersed among each other. In some cases, such as the Merlot and Carménère field blends widely found through Chile in the late 20th century, this is due to misidentification of both vines being the same variety. In other areas, such as the Sauternes field blends of Semillon and Sauvignon blanc, this may be intentional.

Head Grafting; A grafting technique used in already established vineyard where a new grapevine (or even new grape variety) is grafted as a scion upon the rootstock of an already planted vine.

Hybrid grapes: A grape variety derived from parent vines of two different species--such as *Vitis vinifera* and *Vitis labrusca*.

Pesticide: A highly toxic concoction of chemicals used to eliminate pests in the vineyards such as flies, larvae, moths and spiders. In organic and biodynamic viticulture, the use of pesticides is prohibited.

Powdery mildew: Also known as Oidium. Fungal infection that attacks the leaves and grapes of vines, appearing as a powdery white dust that will ultimately cause the grapes to split and be vulnerable to other infections.

Rootstock: The lower part of a grafted vine that consists of the root structure of the plant. Since the phylloxera epidemic of the 19th century, emphasis has been on using phylloxera resistant rootstock but rootstock selection can also control vigor and yields.

Systemic Fungicide: A chemical application that is used to combat fungal infections by spraying the chemical on the vine and allowing it to be absorbed by plant tissue and transported through the xylem system. This is in contrast to a contact fungicide which works only on the surface of grapevine in spaces where the fungus comes into contact with the fungicide.

Yield: In any farming capacity, the quantity of quality fruit that a parcel of land render after a harvest. In terms of wine making it is the quantity of grapes that a vineyard can produce per hectare (2.47 acres) of land to produce the level of quality desired.

Acidity: The quality of wine that gives it its crispiness and vitality. A proper balance of acidity must be struck with the other elements of a wine, or else the wine may be said to be too sharp – having disproportionately high levels of acidity – or too flat – having disproportionately low levels of acidity. The three main acids found in wine are tartaric acid, malic acid and lactic acid. The first two come from the grapes and the third from Malolactic fermentation which often occurs in the winemaking process.

Actual alcohol: The amount of ethanol present in wine, usually measured as a percent of total volume (ABV) taken at 20°C

Alcohol: Generally refers to ethanol, a chemical compound found in alcoholic beverages. It is also commonly used to refer to alcoholic beverages in general.

Alcoholic Fermentation: The conversion by yeast of sugar into alcohol compounds

Back-Blend: Blending unfermented, fresh grape juice into a fully fermented wine in order to add sweetness. Synonymous with the German winemaking technique Sussreserve

Barrel fermented: A wine fermented in oak barrels as opposed to stainless steel or concrete. Traditional with white Burgundies, some Chardonnays and some Champagne

Blending; The mixing of two or more different parcels of wine together by winemakers to produce a consistent finished wine that is ready for bottling. Laws generally dictate what wines can be blended together, and what is subsequently printed on the wine label.

Bottle shock: Also known as bottle-sickness, a temporary condition of wine characterized by muted or disjointed fruit flavors. It often occurs immediately after bottling or when wines (usually fragile wines) are shaken in travel. After several days the condition usually disappears.

Bottle Variation: The degree to which bottled wine of the same style and vintage can vary.

Box Wine: Wine packaged in a bag usually made of flexible plastic and protected by a box, usually made of cardboard. The bag is sealed by a simple plastic tap.

Brettanomyces: Wine spoilage yeast that produces taints in wine commonly described as barnyard or band-aids.

Depth filtration: A means of filtering a wine that takes solely inside filtration medium, such as a kieselguhr, rotary drum vacuum or a frame filter.

Fermentation: A chemical reaction in winemaking. In alcoholic fermentation it is the conversion of sugars to alcohol by yeast while in malolactic conversion it is the conversion of malic acid to lactic by bacteria.

Grape Juice: The free-run or pressed juice from grapes. Unfermented grape juice is known as must.

Orange wine: A white wine with extending skin contact, similar to red wine production. The opposite of a rosé

Organic winemaking: A style of winemaking using organically grown grapes and a minimum amount of chemical additives such as sulfur dioxide.

Osmotic pressure: The tendency of water of within two solutions separated by a semi permeable membrane to travel from a weaker solution to the more concentrated one to achieve equilibrium. In winemaking, osmotic pressure is observed in yeast cells added to grape must with a high sugar content. The water in the yeast cell escapes through the cell mebrane into the solution causing the cell to experience plasmolysis, caving in on itself and dying.

Rosé wines; Pink wines are produced by shortening the contact period of red wine juice with its skins, resulting in a light red colour. These wines are also made by blending a small amount of red wine with white wine.

Sparging; A process of adding carbonic gas to a wine just before bottling in order to add some slight effervescence to the wine.

Raisiny: A wine (usually red) with a slight taste of raisins resulting from the use of grapes that were overripe when picked

Smooth: A wine with a pleasing texture. Typically refers to a wine with soft tannins

Sweet: A wine with a noticeable sense of sugar levels (aka Residual sugar)

Biodynamic wine: Like biodynamic agriculture in general, biodynamic grape-growing stems from the ideas and suggestions of Rudolf Steiner (1861.1925), which predate most of the organic movement. The principles and practices of biodynamics are based on his spiritual/practical philosophy which includes understanding the ecological, the energetic, and the spiritual in nature.

Cleanskin: In Australia, wine bottled without a commercial label, usually sold cheaply in bulk quantities.

Flying winemaker; A winemaker who travels extensively across the globe, sharing techniques and technology from one region of the world to another. The term originated with Australian winemakers who would fly to Northern Hemisphere wine regions in Europe and the United States during the August–October harvest time when viticulture in the Southern Hemisphere is relatively quiet.

Fortified wine: Wine to which alcohol has been added, generally to increase the concentration to a high enough level to prevent fermentation.

Premium wines: Higher quality classification of wine above every day drinking table wines. While premium wines maybe very expensive there is no set price point that distinguishes when a wine becomes a "premium wine." Premium wines generally have more aging potential than every day quaffing wines.

Vintage: Vintage is the process of picking grapes and creating the finished product. A vintage wine is one made from grapes that were all, or primarily, grown and harvested in a single specified year.

Wine label: The descriptive sticker or signage adhered to the side of a wine bottle.