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## ΒΙΒΛΙΟΓΡΑΦΙΑ

1. Ant T, Koukidou M, Rempoulakis P, Gong HF, Economopoulos A, Vontas J, Alphey L. (2012) Control of the olive fruit fly using genetics-enhanced sterile insect technique. *BMC Biol.*10:51.
2. Ben-Yosef, M., Pasternak, Z., Jurkevitch, E. & Yuval, B. (2015) Symbiotic bacteria enable olive fly larvae to overcome host defences. *R Soc open sci* 2, doi: <http://dx.doi.org/10.1098/rsos.150170>.
3. Bigiotti G, Pastorelli R., Belcari A., Sacchetti P. (2019) Symbiosis interruption in the olive fly: Effect of copper and propolis on *Candidatus Erwinia dacicola* *J Appl Entomol.* 2019;143:357–364
4. Capuzzo, C., Firrao, G., Mazzon, L., Squartini, A. & Girolami, V. (2005) 'Candidatus *Erwinia dacicola*', a coevolved symbiotic bacterium of the olive fly *Bactrocera oleae* (Gmelin). *International journal of systematic and evolutionary microbiology* 55, 1641–1647.
5. Chardonnet F, Blanchet A., Hurtrel B., Marini F., Smith L (2018) Mass rearing optimization of the parasitoid *Psytalia lounsburyi* for biological control of the olive fruit fly. *J Appl Entomol.* <https://doi.org/10.1111/jen.12573>
6. Kampouraki A, Stavrakaki M, Karataraki A, Katsikogiannis G, Pitika E, Varikou K, Vlachaki A, Chrysargyris A, Malandraki E, Sidiropoulos N, Paraskevopoulos A, Gilpathi D, Roiditakis E, Vontas J. (2018) Recent evolution and operational impact of insecticide resistance in olive fruit fly *Bactrocera oleae* populations from Greece. *J Pest Sci.* 91(4):1429-1439. DOI:10.1007/s10340-018-1007-8.
7. Leftwich PT, Koukidou M, Rempoulakis P, Gong HF, Zacharopoulou A, Fu G, Chapman T, Economopoulos A, Vontas J, Alphey L. (2014) Genetic elimination of field-cage populations of Mediterranean fruit flies. *Proc Biol C.* 281:20141372. DOI:10.1098/rspb.2014.1372.
8. Nestel, D., Rempoulakis P, Yanovski L, Miranda MA, Papadopoulos N T (2016).The evolution of alternative control strategies in a traditional crop: Economy and policy as drivers of olive fly control. In A.R. Horowitz, I. Ishaaya (eds.), *Advances in Insect Control and Resistance Management*. Springer, Switzerland (DOI10.1007/978 3 319 31800 4\_4)
9. Pavlidi N, Gioti A, Wybouw N, Dermauw W, Ben-Yosef M, Yuval B, Jurkevich E, Kampouraki A, Van Leeuwen T, Vontas J. (2017) Transcriptional responses of the olive fruit fly *Bactrocera oleae* and its symbiont *Candidatus Erwinia dacicola* to olive feeding. *Sci Rep.* 7:42633
10. Pavlidi N, Kampouraki A, Tseliou V, Wybouw N, Dermauw W, Roiditakis E, Nauen R, Van Leeuwen T, Vontas J. (2018) Molecular characterization of pyrethroid resistance in the olive fruit fly *Bactrocera oleae*. *Pestic Biochem Phys.* 148: 1-7
11. Vontas J, Hernández-Crespo P, Margaritopoulos JT, Ortego F, Feng HT, Mathiopoulos KD, Hsu JC. (2011) Insecticide resistance in Tephritid flies. *Pestic Biochem Phys.* 100 :199-205

# Η ασθένεια των γραμμωτών σχεδίων του μαρουλιού

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## ΒΙΒΛΙΟΓΡΑΦΙΑ

### Ελληνική

1. Κυριακοπούλου, Π.Η. (1981). Δυο ασθένειες του καπνού οφειλόμενες στον ιό της κίτρινης δακτυλιωτής κηλίδωσης της αγκινάρας μόνο του και σε μικτή μόλυνση με τον ιό του μωσαϊκού του καπνού. Εις Περίληψεις Πανελληνίου Συνεδρίου Γεωτεχνικών Ερευνών, Χαλκιδική, σελ. 120-121.
2. Κυριακοπούλου, Π.Η., Rana, G.L. και Roca, F. 1985. Γεωγραφική εξάπλωση, κύκλος φυσικών ξενιστών και μετάδοση με τη γύρη και το σπόρο του ιού της κίτρινης δακτυλιωτής κηλίδωσης της αγκινάρας. Χρον. Μπενακείου Φυτοπαθ. Ινστ., (Ν.Σ.) 14: 145-163.

### Ξενόγλωσση

3. Avgelis, A.D. and Vovlas, C. 1989. Artichoke yellow ringspot nepo-virus naturally infecting cucumber in Crete. Netherlands Journal of Plant Pathology 95: 177-184.
4. Avgelis, A.D., Katis, N.I. and Grammatikaki, G. 2002. Broad bean wrinkly seed caused by Artichoke yellow ringspot nepovirus. Annals of Applied Biology 121: 133-142.
5. Maliogka, V.I., Dovas, C.I., Lesemann, D.E., Winter, S. and Katis, N.I. 2006. Molecular identification, reverse transcription-polymerase chain reaction detection, host reactions, and specific cytopathology of Artichoke yellow ringspot virus infecting onion crops. Phytopathology 96: 622-629.
6. Paylan, I. C., Ergun, M. and Erkan, S. 2013. First report of Artichoke yellow ringspot virus in Globe Artichoke in Turkey. Plant Disease 97: 1388-1388.
7. Rana, G.L., Gallitelli, D., Kyriakopoulou, P.E., Russo, M. and Martelli, G.P. 1980. Host range and properties of Artichoke yellow ringspot virus. Annals of Applied Biology 96: 177-185.
8. Terzakis, M., Avgelis, A.D., Jones, A.T. and Katis, N.I. 2002. Artichoke yellow ringspot virus infecting vetch (*Vicia sativa*) in Greece. Phytoparasitica 30: 195-197.

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1. Ρογδάκης Εμμ. (2002): «Εγχώριες φυλές προβάτων», εκδόσεις Αγροτύπος
2. Bosia D., Salvio L., Thiebat F., Patrucco A., Fantucci S., Piccablotto G., Marino D. (2015): Sheep wool for sustainable architecture. *Energy procedia*, 78: 315-320.
3. Brandelli, A., Daroit, D. J., & Riffel, A. (2009). Biochemical features of microbial keratinases and their production and applications. *Applied Microbiology and Biotechnology*, 85(6), 1735–1750.
4. Broda J., Grzybowska, J., Gawłowski A., Rom M., Przybyło S., Laszczak R. (2017): Application of wool geotextiles for the protection of steep slopes. *Procedia engineering*, 200:112 -119.
5. Parry DAD, North ACT (1998) Hard  $\alpha$ -keratin intermediate filament chains: substructure of the N- and C-terminal domains and the predicted structure and function of the C-terminal domains of type I and type II chains. *J Struct Biol* 122:67–75.
6. Von Berger-Mauersberger (1948): *American Wool Handbook*, Second Edition, Barnes Printing, New York.
7. Zheljzkov V (2005). Assessment of wool waste and hair waste as soil amendment and nutrient source. *J. Environ. Qual.* 34: 2310 -2317. Zheljzkov V. D., Stratton G.W. and Storz T. (2008): Uncomposted wool and hair-wastes as soil amendments for high-value crops. *Agronomy Journal Volume* 100: 1605-1614.
8. Zheljzkov V, Stratton GW, Pincock J, et al. (2009). Wool-waste as organic nutrient source for container-grown plants. *Waste Management.* 29: 2160-2164.
9. Καλλιέργεια φράουλας χρησιμοποιώντας στρώμα από μαλλί προβάτου σαν προσεταιευτικό: <https://www.youtube.com/watch?v=1cU651YzvfC>
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1. Colla, G., Nardi, S., Cardarelli, M., Ertani, A., Lucini, L., Canaguier, R., and Rouphael, Y. (2015). Protein hydrolysates as biostimulants in horticulture. *Scientia Horticulturae*, 196.
2. Oertli, J. (1987). Exogenous application of vitamins as regulators for growth and development of plants – a review. *Z. Pflanzenemehr. Bodenk.* 150. 375-391.
3. Neumann, G., Azaizeh, H., and Marschner, H. (2011). Thiamine (vitamin B1) seed treatment enhances germination and seedling growth of bean (*Phaseolus vulgaris* L.) exposed to soaking injury, *Zeitschrift für Pflanzenernährung und Bodenkunde*, 159, 491-498.
4. Drobek, M., M. Frac and Cybulska, J. (2019). Plant Biostimulants: Importance of the Quality and Yield of Horticultural Crops and the Improvement of Plant Tolerance to Abiotic Stress—A Review. *Agronomy* 9(6), 335..

# Μεσογειακό δίκτυο για τη διατήρηση της βιοποικιλότητας ροδακινιάς

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## ΒΙΒΛΙΟΓΡΑΦΙΑ

- Aranzana M. J., Decroocq V., Dirlwanger E., Eduardo I., Gao Z. S., Gasic K., Tao R. 2019. Prunus genetics and applications after de novo genome sequencing: achievements and prospects. *Horticulture research*, 6.
- Bassi D., Aranzana M. J., Cirilli M., Cos Terrer J., Drogoudi P., Eduardo I., Foschi S., Micali S., Rossini L., Verde I. 2019. Una rete mediterranea per conservare la biodiversità. *Rivista di Frutticoltura*, 6: 32-36.
- Cirilli M., Flati T., Gioiosa S., Tagliaferri I., Ciacciulli A., Gao Z., Gattolin S., Geuna F., Maggi F., Bottoni P., Rossini R., Bassi D., Castrignanç T., Chillemi G. 2018. PeachVar-DB: a curated collection of genetic variations for the interactive analysis of peach genome data. *Plant and Cell Physiology*, 59: 1 e 2.
- Decroocq S., Comille A., Tricon D., Babayeva S., Chague A., Eyquard J.P., Karychev R., Dolgikh S., Kostriysyna T., Liu S., Liu W., Geng W., Liao K., Asma B.M., Akparov Z., Giraud T., Decroocq V. 2016. New insights into the history of domesticated and wild apricots and its contribution to Plum pox virus resistance. *Mol Ecol.*, 25: 4712–29.
- Dondini L., Vendramin E., Pea G., Pacheco I., Dettori M.T., Gazza L., Scalabrin S., Strozzi F., Tartarini S., Bassi D., Ignazio V., Rossini L. 2014. L'origine delle nettarine nella mutazione di un singolo gene MYB. *Rivista di Frutticoltura*, 7/8: 48-51.
- Κουκουργιάννης Β. 2008. Η συστηματική δενδροκομία στην Κ.Δ. Μακεδονία συμπλήρωσε τα 80 χρόνια της (1927-2007). *Γεωργία-Κτηνοτροφία τ. 1/2008*: 34-40.
- Laurens F., Aranzana M-J., Arus P., Bassi D., Bink M., Bonany J., Caprera A., Corelli-Grappadelli L., Costes E., Durel C-E., Mauroux J.B., Muranty H., Nazzicari N., Pascal T., Patocchi A., Peil A., Quilot Turion B., Rossini L., Stella A., Troggio M., Velasco R., van de Weg E. 2018. An integrated approach for increasing breeding efficiency in apple and peach in Europe. *Hortic Res* 5: 11.
- Micheletti D., Dettori M.T., Micali S., Aramini V., Pacheco I., Da Silva Linge C., Foschi S., Banchi E., Barreneche T., Quilot-Turion B, Lambert P., Pascal T., Iglesias I., Carbo J., Wang L., Ma R., Li X., Gao Z., Nazzicari N., Troggio M., Bassi D., Rossini L, Verde I., Laurens F., Arus P., Aranzana M.J. 2015. Whole-genome analysis of diversity and SNP-major gene association in Peach Germplasm. *PLOS ONE*, 10(9): e0136803.
- Okie W.R., Bacon T., Bassi D. 2008. Fresh Market Cultivar Development. In: (curatori) D. R. Layne e D. Bassi: *The Peach. Botany, Production and Uses*. CAB International, Wallingford (UK): 139-174.
- Οικονομίδης Α. 1950. Τα οπωροφόρα δένδρα της Ελλάδος. Κεντρικό Ταμείο Γεωργίας Κτηνοτροφίας και Δασών. Β' Έκδοσ. Αθήνα. σελ.
- Peace C.P. 2017. DNA-informed breeding of rosaceous crops: promises, progress and prospects. *Horticulture research*, 4: 17006.
- Su T., Wilf P., Huang Y., Zhang S., Zhou Z. 2015. Peaches preceded humans: fossil evidence from SW China. *Sci. Rep.*, 5: 16794.
- Velasco D., Hough J, Aradhya M., Ross-Ibarra J. 2016. Evolutionary genomics of peach and almond domestication. *G3-Genes Genomes Genet* 6: 3985–3993.
- Verde I., Abbott A.G., Scalabrin S., Jung S., Shu S., Marroni F., Zhebentyayeva T., Dettori M.T., Grimwood J., Cattonaro F., Zuccolo A., Rossini L., Jenkins J., Vendramin E., Meisel L.A., Decroocq V., Sosinski B., Prochnik S., Mitros T., Policriti A., Cipriani G., Dondini L., Ficklin S., Goodstein D.M., Xuan P., Del Fabbro C., Aramini V., Copetti D., Gonzalez S., Horner D.S., Falchi R., Lucas S., Mica E., Maldonado J., Lazzari B., Bielenberg D., Pirona R., Miculan M., Barakat A., Testolin R., Stella A., Tartarini S., Tonutti P., Arús P., Orellana A., Wells C., Main D., Vizzotto G., Silva H., Salamini F., Schmutz J., Morgante M., Rokhsar D.S. 2013. The high-quality draft genome of peach (*Prunus persica*) identifies unique patterns of genetic diversity, domestication and genome evolution. *Nature Genetics* 45.5: 487.
- Yu Y., Fu J., Xu Y., Zhang J., Ren F., Zhao H., Jiang D. 2018. Genome re-sequencing reveals the evolutionary history of peach fruit edibility. *Nature Communications*, 9 (1): 5404-5404.

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- Amanda, A. Ferrante, A. Valagussa, M. & Piaggese, A. (2009). Effect of biostimulants on quality of baby leaf lettuce grown under plastic tunnel. *Acta Horticulturae*, Vol 807:407-412
- Battacharyya, D., Zamani Babgohari, M., Rathor, P. & Prithiviraj, B. (2015). Seaweed extracts as biostimulants in horticulture. *Scientia Horticulturae*, Vol 196:39-48.
- Bio4safe. (2018). Identification of the seaweed biostimulant market. (Executed by Stichting Noordzeeboerderij / North Sea Farm Foundation).
- Bulgari, R., Cocceta, G., Trivellini, A., Vernieri, P. & Ferrante, A. (2015). Biostimulants and crop responses: a review. *Biological Agriculture & Horticulture*, Vol 31:1-17.
- Calvo, P., Nelson, L. & Kloepper, J. (2014). Agricultural uses of plant biostimulants. *Plant & Soil*, Vol 383:3-41.
- Canellas LP, Spaccini R, Piccolo A, Dobbss LB, Okorokova-Façanha AL, Santos GDA, Olivares FL, Façanha AR (2009) Relationships between chemical characteristics and root growth promotion of humic acids isolated from Brazilian oxisols. *Soil Science*, Vol 174:611-620
- Colla, G., Nardi, S., Cardarelli, M., Ertani, A., Lucini, L., Canaguier, R. & Rouphael, Y. (2015). Protein hydrolysates as biostimulants in horticulture. *Scientia Horticulturae*, Vol 196:28-38.
- El Hadrami, A., Adam, L.R., El Hadrami, I. & Daayf, F. (2010). Chitosan in Plant Protection. *Marine Drugs*, Vol 8: 968-987.
- Godlewska, K., Michalak, I., Tuhy, L. & Chojnacka, K. (2016). Plant Growth Biostimulants Based on Different Methods of Seaweed Extraction with Water. *BioMed Research International*, Vol 2016:1-11.
- Halpern, M., Bar-Tar, A., Ofek, M., Minz, D., Muller, T. & Yermiyahu. (2015). The Use of Biostimulants for Enhancing Nutrient Uptake. *Advances in Agronomy*, Vol 1:141-174.
- Hennequart, F. (2019). Biostimulant Market Developments. 2nd Conference Argus Added Value Fertilizers Europe 2019, 13-15 February | Barcelona, Spain.
- Hernandez-Herrera, R.M., Santacruz-Ruvalcaba, F., Ruiz-Lopez, M.A., Norrie, J. & Hernandez-Carmona, G. (2013). Effect of liquid seaweed extracts on growth of tomato seedlings (*Solanum lycopersicum* L.). *Journal of Applied Phycology*, Vol 26: 1-10. Jarbin, P. (2015). Plant biostimulants: Definition, concept, main categories and regulation. *Scientia Horticulturae*, Vol 196:3-14.
- Jindo, K., Martim, S. A., Navarro, E. C., Pérez-Alfocea, F., Hernandez, T., Garcia, C., Aguiar, O. N., Canellas, L. P. (2011). Root growth promotion by humic acids from composted and non-composted urban organic wastes. *Plant & Soil*, Vol 353(1-2), 209-220.
- Kaminsky, L. M., Trexler, R. V., Malik, R. J., Hockett, K. L., & Bell, T. H. (2018). The Inherent Conflicts in Developing Soil Microbial Inoculants. *Trends in Biotechnology*, Vol 37: 140-151
- Kelting, M., J. Roger Harris, R.J. & Fanelli, J. (1998). Biostimulants and Soil Amendments Affect Two-year Posttransplant Growth of Red Maple and Washington Hawthorn. *HortScience*, Vol 33:819-822.
- MarketsandMarkets (2017). Biostimulants Market – Global forecast to 2022.
- Nardi, S., Pizzeghello, D., Schiavon, M. & Ertani, A. (2015). Plant biostimulants: physiological responses induced by protein hydrolyzed-based products and humic substances in plant metabolism. *Scientia Agricola*, Vol 73 (No 1):18-23.
- Pichyangkura, R. & Chadchawan, S. (2015). Biostimulant activity of chitosan in horticulture. *Scientia Horticulturae*, Vol 196:49-65.
- Schmidt, R.E., Ervin, E.H. & Zhang, X. (2003). Questions and answers about biostimulants. *Research*, 91-94.
- Shekhar Sharma, H.S., Fleming, C., Selby, C., Rao, J.R. & Martin, T. (2014). Plant biostimulants: a review on the processing of macroalgae and use of extracts for crop management to reduce abiotic and biotic stresses. *Journal of Applied Phycology*, Vol 26:465-490.
- Sofo, A., Nuzzaci, M., Vitti, A., Tataranni, G. & Scopa, A. (2014). Control of Biotic and Abiotic Stresses in Cultivated Plants by the Use of Biostimulant Microorganisms. *Improvement of Crops in the Era of Climatic Changes*, Vol 1:107-117.
- Stirk, W., Tarkowska, D., Turecova, V. & J. van Staden, M. (2014). Abscisic acid, gibberellins and brassinosteroids in Kelpak a commercial seaweed extract made from *Ecklonia maxima*. *Journal of Applied Phycology*, Vol 26:561-567.
- Van Oosten, M., Pepe, O., De Pascale, S., Silletti, S. & Maggio, A. (2017). The role of biostimulants and bioeffectors as alleviators of abiotic stress in crop plants. *Chemical and Biological Technologies in Agriculture*, Vol 4:1-12.
- Vernieri, P., Borghesi, E., Ferrante, A. & Magnani, G. (2005). Application of biostimulants in floating system for improving rocket quality. *Journal of Food, Agriculture & Environment*, Vol 3: 86 – 88.
- Wong, W.S., Tan, S.N., Ge, L., Chen, X., Letham, D.S. & Yong, J.W.H. (2016). The importance of phytohormones and microbes in biostimulants: mass spectrometric evidence and their positive effects on plant growth. *Acta horticulturae*: 48-60.
- Οικαλιώτης, Κ., (2016). Ο Ρόλος των λιπάνσεων στην εποχή των βιοκοινοτήτων, των ενδοφύτων και αβιοτικών καταπονήσεων, *Πρακτικά Ημερίδας, Agrotica 2016*, 9-16.