

***Dr. Ioannis C. Karapanos***  
***Agriculturist - Horticulturist***

**Personal and Contact Information**

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**Education**

1. BSc. in Agricultural Sciences, Agricultural University of Athens, Greece, Dept. of Crop Science (5 years course study) (1995)
2. PhD in Agricultural Sciences, Agricultural University of Athens, Greece, Dept. of Crop Science (2007)  
Dissertation: “*Study of factors that influence microsporogenesis of greenhouse tomato (Lycopersicon esculentum Mill)*”.

**Languages**

Native speaker of Greek. Excellent speaker of English. Knowledge of Italian.

**Employment**

1. July 1997 - June 1999: research assistant in horticulture.
2. July 2002 – April 2013: research assistant at the Laboratory of Vegetable Production and administrative assistant for the Section of Vegetable and Flower Crops, and Landscape Architecture of the Agricultural University of Athens, Greece.
3. April 2013 – October 2014: Lecturer (Lab. of Vegetable Production of the Agricultural University of Athens, Greece).
4. October 2014 – present: Assistant Professor (Lab. of Vegetable Production of the Agricultural University of Athens, Greece).

**Research Programs**

1. Participation as researcher in four national research programs:
  - a. “Study of fruit-setting physiology in greenhouse tomato” (Agricultural University of Athens, May 1997 – April 1999).
  - b. “Study of the breakage of dormancy in potato seed tubers and optimization of the cultivation technique on the island of Naxos, Greece” (Agricultural University of Athens, August 1999 – April 2000).

- c. “Development of knowhow for the cultivation of greenhouse plants in closed hydroponic systems in Greek greenhouses in order to avoid nitrogen pollution and the use of chemical soil disinfectants” (“Archimedes” program for the improvement of research in the Greek Technological Educational Institutes, TEI of Epirus, Greece, January 2004 – December 2006).
- d. “Intensive potato seed production” (Lab. of Vegetable Production of the Agricultural University of Athens and Agricultural Research Institute of Cyprus, January 2006 – December 2008).
2. Participation as researcher in two European research programs:
  - a. “Legume-supported cropping systems for Europe-Legume futures” (FP7 Cooperation Work Programme, March 2010 – February 2014).
  - b. “Eurolegume: Enhancing of legumes growing in Europe through sustainable cropping for protein supply for food and feed” ((FP7 Cooperation Work Programme, January 2014 – present).
3. Participation in the COST program, Action FA 1204 “Vegetable Grafting to Improve Yield and Fruit Quality under Biotic and Abiotic Stress Conditions”, in the workpackage 4 (Rootstock-mediated improvement of fruit quality) from October 2012 to September 2016.
4. Member of a research team for the preparation of a proposal for the “Cooperation 2011” national program to promote the cooperation of educational-research institutes and companies (submitted for evaluation at the Greek Chamber for Research and Technology).
5. Scientific leader of two national research projects founded by Compo Hellas S.A. and Medilco Hellas S.A. (December 2014 – December 2015 and March 2016 – November 2016, respectively).

### **Teaching Experience**

1. Participation as instructor in the laboratory exercises of the undergraduate courses (5<sup>th</sup>, 6<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> semesters) in the Lab. of Vegetable Production of the Agricultural University of Athens, since 1996.
2. Co-supervisor of undergraduate and post-graduate research projects and Ph.D candidates of the Laboratory of Vegetable Production of the Agricultural University of Athens.
3. Instructor in several seminars held in Greece, concerning commercial and organic vegetable production, and the utilization of novel technologies for greenhouse vegetable production.
4. Instructor for three semesters (2008-2010) in the “Vegetable Production” seminars of the Greek Institute of Agricultural Research.
5. Part-time lecturer for one (1) semester (winter 2009 - 60 teaching hours) at the Department of Organic Greenhouse Crops and Floriculture of the Technological Educational Institute of Kalamata, Greece, teaching the course “General Horticulture”.
6. Part-time lecturer for four (4) semesters (2010-2012 – 2 teaching hours per week) at the Department of Crop Science of the Agricultural University of Athens, Greece, teaching the courses “Outdoor Vegetable Cultivation” and “Vegetable Cultivation Under Cover”, as well as teaching, laboratory and field exercises.
7. From April 2013, teaching the following under-graduate lessons of the Lab. of Vegetable Production of A.U.A.:
  - a. “Principles of Vegetable Production” (5<sup>th</sup> semester, Dept. of Crop Production)
  - b. “Vegetable Production” (6<sup>th</sup> semester, all other departments of AUA except Crop Production)

- c. “Field vegetable crops” (8<sup>th</sup> semester, Dept. of Crop Production)
  - d. “Greenhouse vegetable crops” (9<sup>th</sup> semester, Dept. of Crop Production)
  - e. “Vegetable propagation physiology and technology” (9<sup>th</sup> semester, Dept. of Crop Production)
  - f. “Physiology and Technology of vegetable propagating material” (in English for Erasmus students)
  - g. “Postharvest handling of fruits and vegetables” (9<sup>th</sup> semester, Dept. of Crop Production)
8. From April 2013, teaching of 3 lessons of the AUA postgraduate programme of studies “Science and systems of crop production”: “Propagation of vegetables and ornamentals”, “Postharvest handling and quality of fruits and vegetables” and “Postharvest handling in certified crop production”.
  9. Supervisor of one Ph.D, 4 MSc. and more than 25 under-graduate theses and member of the committee of 4 Ph.D, 10 MSc. and more than 40 under-graduate theses.

### **Skills**

- Expertise on the physiology and the cultivation techniques of several horticultural crops (mainly vegetables) both outdoors and under cover, quality traits, post-harvest physiology and seed-production of vegetables, application of modern technology to horticultural production (i.e. computer-based climate control of greenhouses, hydroponics), organic horticulture.
- Over 20 years of experience in horticultural research, deep knowledge of agricultural experimentation both in the field and the laboratory, on experimental design, collection and statistical handling of experimental data.
- Use of laboratory analytical instruments, performance of analytical (gas and liquid chromatography, atomic absorption spectrometry, flame photometry, IR- gas analysis, spectrophotometric methods, etc.), biotechnological and molecular techniques (e.g. enzyme activity and localization, vertical and horizontal electrophoresis, RNA extraction, PCR, RT-PCR, etc.).
- Excellent computer use, the application of modern computer technology to agricultural experimentation and cultivation practices.

### **Other activities**

- Member of the Geotechnical Chamber of Greece, the Greek Society of Horticultural Science and the International Society for Horticultural Science (ISHS).
- Reviewer of research papers in the peer reviewed journals: “Archives of Agronomy and Soil Science”, “HortScience”, “Journal of Horticultural Science and Biotechnology”, “European Journal of Horticultural Science”, “NFS Journal”, “African Journal of Agricultural Research” “African Journal of Biotechnology” and “American Journal of Experimental Agriculture”.
- Participation in international and national (Greek) scientific conferences on Horticulture and Plant Breeding.
- Attendance of the “Short Course Training on Vegetable Production” at the University of Wageningen in the Netherlands (April 2008).

## Publications

### • Dissertations

1. **I.C. Karapanos** (1995). *The effect of split-night heating on the growth, yield and energy saving in a greenhouse cucumber crop*. Graduate Dissertation, Laboratory of Vegetable Production, Department of Crop Science, Agricultural University of Athens.
2. **I.C. Karapanos** (2007). *Study on factors that influence microsporogenesis of greenhouse tomato (Lycopersicon esculentum Mill)*. Ph.D Thesis, Laboratory of Vegetable Production, Department of Crop Science, Agricultural University of Athens, 221p.

### • Books

1. Passam H.C., H. Tsantili, M. Christopoulos, M. Kafkaletou, A. Alexopoulos and **I. Karapanos** (2015). *Postharvest Handling of Fruits and Vegetables*. Hellenic Academic E-books (kallipos.gr), ISBN 978-960-603-261-5, 297 p.

### • Publications in international peer reviewed journals with Impact Factor

1. Saplaouras K., H.C. Passam and **I. Karapanos** (2001). Seed production of lettuce under plastic in a warm climate in relation to sowing time and gibberellic acid application. *Plant Varieties and Seeds*, 14: 15-23.
2. **Karapanos I.C.**, C. Fasseas, C.M. Olympios and H.C. Passam (2006). Factors affecting the efficacy of agar-based substrates for the study of tomato pollen germination. *Journal of Horticultural Science and Biotechnology*, 81 (4): 631-638.
3. **Karapanos I.C.**, K. Akoumianakis, C.M. Olympios and H.C. Passam (2006). The influence of gelling agent purity and ion additions on *in vitro* tomato pollen germinability and pollen tube growth on semi-solid substrates. *Plant, Cell, Tissue and Organ Culture*, 87: 181-190.
4. Passam H.C., A.C. Koutri and **I.C. Karapanos** (2008). The effect of chlormequat chloride (CCC) application at the bolting stage on the flowering and seed production of lettuce plants previously treated with water or gibberellic acid (GA<sub>3</sub>). *Scientia Horticulturae*, 116: 117-121.
5. Akoumianakis K.A., G. Aivalakis, A.A. Alexopoulos, **I.C. Karapanos**, K. Skarmoutsos and H.C. Passam (2008) Bromoethane-induced changes in respiration rate, ethylene synthesis, and enzyme activities in potato tubers in relation to dormancy breakage. *Journal of Horticultural Science and Biotechnology*, 83: 441-446.
6. Savvas D., **I. Karapanos**, A. Tagaris and H.C. Passam (2009). Effects of NaCl and silicon on the quality and storage ability of zucchini squash. *Journal of Horticultural Science and Biotechnology*, 84: 381-386.
7. **Karapanos I.C.**, K.A. Akoumianakis, C.M. Olympios and H.C. Passam (2009). The effect of substrate, ADP and uncoupler on the respiration of tomato pollen during incubation *in vitro* at moderately high temperature. *Sexual Plant Reproduction*, 22: 133-140.
8. Passam H.C., S. Theodoropoulou, T. Karanissa and **I.C. Karapanos** (2010). Influence of harvest time and after-ripening on the seed quality of eggplant. *Scientia Horticulturae*, 125: 518-520.
9. Konstantopoulou E., G. Kapotis, G. Salachas, S.A. Petropoulos, **I.C. Karapanos** and H.C. Passam (2010). Nutritional quality of greenhouse lettuce at harvest and after storage in relation to N application and cultivation season. *Scientia Horticulturae*, 125: 93.e1-93.e5.

10. Varlagas H., D. Savvas, G. Mouzakis, C. Liotsos, **I. Karapanos** and N. Sigrimis (2010). Modelling uptake of Na<sup>+</sup> and Cl<sup>-</sup> by tomato in closed-cycle cultivation systems as influenced by irrigation water salinity. *Agricultural Water Management*, 97: 1242–1250.
11. **Karapanos I.C.**, K.A. Akoumianakis, C.M. Olympios and H.C. Passam (2010). Tomato pollen respiration in relation to *in vitro* germination and pollen tube growth under favourable and stress-inducing temperatures. *Sexual Plant Reproduction*, 23: 219-224.
12. Savvas D., A. Savva, G. Ntatsi, A. Ropokis, **I. Karapanos**, A. Krumbein and C. Olympios (2011). Effects of three commercial rootstocks on mineral nutrition, fruit yield and quality in salinised tomato. *Journal of Plant Nutrition and Soil Science*, 174: 154-162.
13. Akoumianakis, K.A., **I.C. Karapanos**, M. Giakoumaki, A.A. Alexopoulos and H.C. Passam (2011). Nitrogen, season and cultivar affect radish growth, yield, sponginess and hollowness. *International Journal of Plant Production*, 5: 111-119.
14. Petropoulos, S.A., E. Constantopoulou, **I. Karapanos**, C.A. Akoumianakis and H.C. Passam (2011). Diurnal variation in the nitrate content of parsley foliage. *International Journal of Plant Production*, 5: 431-438.
15. Rekoumi, K., **I.C. Karapanos**, K.A. Akoumianakis and H.C. Passam (2012). Nitrogen application affects yield and postharvest quality of okra (*Hibiscus esculentus* L. cv. 'Boyatiou'). *International Journal of Plant Production*, 6: 59-72.
16. Khah, E.M., S.A. Petropoulos, **I.C. Karapanos** and H.C. Passam (2012). Evaluation of growth media incorporating cotton ginning by-products for vegetable production. *Compost Science and Utilization*, 20: 24-28.
17. Konstantopoulou, E., G. Kapotis, G. Salachas, S.A. Petropoulos, E. Chatzieustratiou, **I.C. Karapanos** and H.C. Passam (2012). Effect of N application on growth parameters, yield and leaf nitrate content of greenhouse lettuce cultivated during three seasons. *Journal of Plant Nutrition*, 35: 1246–1254.
18. Tsaniklidis, G., C. Delis, G. Liakopoulos, **I. Karapanos**, P. Katinakis, H.C. Passam and G. Aivalakis (2012). Induced parthenocarpic cherry tomato fruits did not show significant differences in L-ascorbate content but showed different pattern in GalLDH and GME expression. *Plant Growth Regulation*, 68: 493-502.
19. **Karapanos, I.C.**, A.A. Alexopoulos, K.A. Akoumianakis, F. Grigoriou, D. Miliordos, K. Rigakis, I. Skandalou and H.C. Passam (2012). Application of  $\beta$ -naphthoxyacetic acid ( $\beta$ -NOA) improves fruit yield and marketable quality in out-of-season cherry tomatoes (*Solanum lycopersicum* L. var. *cerasiforme* (Dunal) D.M. Spooner, G.J. Anderson and R.K. Jansen) cultivated in unheated greenhouses in the Mediterranean Basin. *Journal of Horticultural Science and Biotechnology*, 88: 165-172.
20. Kyriakopoulou, O.G., P. Arens, K.T.B. Pelgrom, **I. Karapanos**, P. Bebeli, and H.C. Passam (2014). Genetic and morphological diversity of okra (*Abelmoschus esculentus* [L.] Moench.) genotypes and their possible relationships, with particular reference to Greek landraces. *Scientia Horticulturae*, 171: 58-70.
21. Rounis, V., K. Skarmoutsos, G. Tsaniklidis, N. Nikoloudakis, C. Delis, **I. Karapanos** and G. Aivalakis (2015). Seeded and parthenocarpic cherry tomato fruits exhibit similar sucrose, glucose and fructose levels, despite dissimilarities in UGPase and SPS gene expression and enzyme activity. *Journal of Plant Growth Regulation*, 34, 47-56.
22. Akoumianaki-Ioannidou A., M. Rasouli, L. Podaropoulou, **I. Karapanos** and D. Bilalis (2015). Effects of cultivation system and fertilization on seedling production of

*Ocimum basilicum* L. and *Mentha spicata* L. *Notulae Botanicae Horti Agrobotanici Cluj-Napoca*, 43, 131-137.

23. Alexopoulos A.A., **I.C. Karapanos**, K.A. Akoumianakis and H.C. Passam (2016). Effect of gibberellic acid on the growth rate and physiological age of tubers cultivated from true potato seed. *Journal of Plant Growth Regulation*, DOI 10.1007/s00344-016-9616-z

- **Publications in international peer reviewed journals without Impact Factor**

1. Passam H.C., A. Koutri and **I.C. Karapanos** (2008). Comparative effects of chlormequat chloride (CCC) and gibberellic acid (GA<sub>3</sub>) on the flowering and seed production of lettuce. *The European Journal of Plant Science and Biotechnology*, 2: 91-93.
2. Passam, H.C., D. Makrogianni, F. Gregoriou, **I.C. Karapanos** (2010). The size and germination of eggplant seed in relation to fruit maturity at harvest, after-ripening and ethylene application. *The Annals of Oradea University, Biology Fascicle*, 17: 225-229.
3. Rekoumi K., **I.C. Karapanos**, K.A. Akoumianakis and H.C. Passam (2012). Effect of vinyl wrapping on the quality and chilling susceptibility of small grade okra (*Abelmoschus esculentus* [L.] Moench.) pods during low temperature storage. *International Journal of Postharvest Technology and Innovation*, 2, 387-399.
4. Thanopoulos C., S.A. Petropoulos, A.A. Alexopoulos, **I.C. Karapanos**, E.M. Khah, K.A. Akoumianakis and H.C. Passam (2013). A comparison of the effectiveness of chlormequat chloride (CCC) application and terminal apex excision to restrict plant height in okra (*Abelmoschus esculentus* [L.] Moench.) and optimize yield. *Journal of Agricultural Science*, 5, 44-50.
5. Antonopoulos A., **I.C. Karapanos**, S.A. Petropoulos and H.C. Passam (2014). The effect of two levels of ammonium nitrate application on the yield of plain-leaf, curly leaf and turnip-rooted parsley and the quality and essential oil composition of the leaves before and after storage in a partially dehydrated form. *The Annals of Oradea University, Biology Fascicle*, 21, 65-69.
6. Antonopoulos A.I., C. Kannavou, **I.C. Karapanos**, S.A. Petropoulos and H.C. Passam (2014). The effect of partial dehydration on the quality and composition of plain-leaf, curly-leaf and turnip-rooted parsley during storage. *International Journal of Postharvest Technology and Innovation*, 4, 151-163.
7. Rekoumi K., **I.C. Karapanos** and H.C. Passam (2015). Comparative storage behavior of the pods from a large-fruited and small-fruited okra cultivar. *International Journal of Postharvest Technology and Innovation*, 5, 177-186.
8. Thanou M., G. Tsaniklidis, C. Delis, A.E. Nikolopoulou, N. Nikoloudakis, **I. Karapanos** and G. Aivalakis (2016). Gene transcript accumulation and enzyme activity of  $\beta$ -amylases suggest involvement in the starch depletion during the ripening of cherry tomatoes. *Plant Gene*, 5, 8-12.
9. Akoumianakis K.A., A.A. Alexopoulos, **I.C. Karapanos**, K. Kalatzopoulos, G. Aivalakis and H.C. Passam (2016). Carbohydrate metabolism and tissue differentiation during potato tuber initiation, growth and dormancy induction. *Australian Journal of Crop Science*, 10, 185-192.

- **Review papers**

1. Passam H.C., **I.C. Karapanos**, P.J. Bebeli and D. Savvas (2007). A review of recent research on tomato nutrition, breeding and post-harvest technology with reference to fruit quality. *The European Journal of Plant Science and Biotechnology*, 1: 1-21.

2. **Karapanos I.C.**, S. Mahmood and C. Thanopoulos (2008). Fruit set in solanaceous vegetable crops as affected by floral and environmental factors. In: Passam H. (Ed), The Fruiting Species of the Solanaceae. *The European Journal of Plant Science and Biotechnology*, 2 (Special Issue 1): 88-105.
  3. Passam H.C. and **I.C. Karapanos** (2008) Eggplants, peppers and tomatoes: Factors affecting the quality and storage life of fresh and fresh-cut (minimally processed) produce. In: Passam H. (Ed), The Fruiting Species of the Solanaceae. *The European Journal of Plant Science and Biotechnology*, 2 (Special Issue 1): 156-170.
- **Publications in national peer reviewed journals**
    1. Kaptis G., K. Akoumianakis, H.C. Passam, **I. Karapanos** και C. Olympios (2004). The effect of propylene application on ethylene production and ripening of tomato fruits stored in air or in controlled atmospheres of low O<sub>2</sub> (1%) and high CO<sub>2</sub> (5%) concentrations. *Agricultural Research (Greece)*, 27 (1): 3-10.
  - **Papers presented at international scientific conferences**
    1. Karetzos S., C. Costopoulou, H.C. Passam and **I. Karapanos** (2002). A horticultural vortal for Mediterranean countries. *Proceedings of the 1<sup>st</sup> Conference of Hellenic Association of ICT in Agriculture, Food and Environment*, 6-7 June 2002, Athens, Greece, pp. 103-107.
    2. Olympios, C.M., **I.C. Karapanos**, K. Lionoudakis and I. Apidianakis (2003). The growth, yield and quality of greenhouse tomatoes in relation to salinity applied at different stages of plant growth. *Acta Horticulturae*, 609: 313-320.
    3. Kyriakopoulou O.G., **I.C. Karapanos**, G. Tsikritsakis, S. Tsermoulas, A.A. Alexopoulos and H.C. Passam (2010). Effect of shading on the development and yield of two okra (*Hibiscus esculentus* L.) cultivars grown under high temperatures. *Acta Horticulturae*, 936: 155-159.
    4. Tsamaidi D., **I.C. Karapanos**, H.C. Passam, D. Daferera and M. Polissiou (2010). The yield and composition of dill essential oil in relation to N application, season of cultivation and stage of harvest. *Acta Horticulturae*, 936: 189-194.
    5. Kyriakopoulou O.G., E.E.G. Kyriazi, **I.C. Karapanos**, G. Vlachou, F. Grigoriou, P.J. Bebeli, and H.C. Passam (2010). The effect of harvest date on the seed production and germination ability of twelve okra genotypes grown under cover in Greece. *Abstract, International Horticultural Conference, Lisbon, 22-27 August 2010*.
    6. Kontopoulou, C.-K., D. Savvas, D. Bilalis, V. Pappa, **I. Karapanos** and R.M. Rees (2012). Impact of farming practices (organic vs. conventional system) and salinity on a common bean crop (*Phaseolus vulgaris* L.) grown in Mediterranean. *Proceedings of the 12th Congress of the European Society for Agronomy (ESA 12)*, Helsinki, Finland, 20-24 August 2012.
    7. **Karapanos, I.C.**, M. Chandra, K.A. Akoumianakis H.C. Passam and A.A. Alexopoulos (2015). The ripening and quality characteristics of cherry tomato fruit in relation to the time of harvest. *Acta Horticulturae*, 1079, 495-500.
    8. Alexopoulos, A.A., **I.C. Karapanos**, K.A. Akoumianakis and H.C. Passam (2015). Effect of postharvest application of plant growth regulators on the storage life of tubers grown from true potato seed (TPS). *Acta Horticulturae*, 1079, 627-632.



- **Book chapters**

1. Passam H.C., **I.C. Karapanos** and A.A. Alexopoulos (2011). The biological basis of fruit quality. In: *Breeding For Fruit Quality* (Eds. M.A. Jenks, P. Bebeli), pp. 5-38, Wiley-Blackwell, Ames, IA, USA

- **Publications in Greek technical-scientific journals**

1. **Karapanos, I.C.** and H.C. Passam (2009). The crucifers and their nutritional value. *Agriculture-Veterinary Science* 10/2009, 2-6 (in Greek).
2. **Karapanos, I.C.** and H.C. Passam (2009). Post-harvest treatment and storage of the cruciferous vegetables. *Agriculture-Veterinary Science* 10/2009, 70-72 (in Greek).
3. **Karapanos, I.C.** and H.C. Passam (2010). Minimally processed fruit and vegetables. *Agriculture-Veterinary Science* 7/2010, 28-34 (in Greek).
4. Passam, H.C., **I.C. Karapanos** and A.A. Alexopoulos (2012). Tomato hybrids and varieties cultivated in Greece and the criteria for their selection. *Agriculture-Veterinary Science* 2/2012, 36-43 (in Greek).
5. **Karapanos I.C.** (2013). Chicory and endive. *Agriculture-Veterinary Science*, 6/2013: 34-42 (in Greek).
6. Passam H.C and **I.C. Karapanos** (2013). Quality standards and storage of leafy vegetables. *Agriculture-Veterinary Science* 6/2013: 120-127 (in Greek).
7. Karapanos I.C. and H.C. Passam (2013). Dietetic value of leafy vegetables and factors that affect it. *Agriculture-Veterinary Science* 6/2013: 128-135 (in Greek).

- more than 40 proceedings of national (Greek) scientific conferences