**Allowed patents**

1. Chet, I., A. Sivan and **Y. Elad**, 1987. Novel isolate of *Trichoderma* fungicidal compositions containing said isolate and use thereof. US Patent No. 4,713,342 (4,915,944). European Patent 84,106349.8 (133878). Germany no. DE3481577 D1
2. Sivan, A., Chet, I. and **Elad, Y.** 1985. Fungicidal compositons and method for using them. Israel Patent 68124.
3. **Elad, Y.**, Zimand, G. and Chet, I. 1990. Novel isolate of *Trichoderma* *harzianum*, T‑39 fungicidal composition containing said isolate and use against *B. cinerea* and *S. sclerotiorum*. Patents are as follows: Argentina - no. 320,123; 251,599; Australia - no. 649,050; Bulgaria - no. 94,804; Brazil - no. PI-91/03,028; Chile - no. 650/91;
4. European- no. [EP0466133A2](https://www.google.si/patents/EP0466133A2?hl=iw&dq=patents+Yigal+Elad), [EP0466133A3](https://www.google.si/patents/EP0466133A3?hl=iw&dq=patents+Yigal+Elad), [EP0466133B1](https://www.google.si/patents/EP0466133B1?hl=iw&dq=patents+Yigal+Elad); 91 111 496.5; +14 countries: (Austria E152320, France 91111496.5, Greece, Germany [DE69125890D1](https://www.google.si/patents/DE69125890D1?hl=iw&dq=patents+Yigal+Elad), [DE69125890T2](https://www.google.si/patents/DE69125890T2?hl=iw&dq=patents+Yigal+Elad), Italy 0466133, Spain 466133, Switzerland 0 608 027, the Netherlands 91111496.5; Japan - no. 172803/91 Published as JP 78753/94; Israel - no. 95066; Hungary - no. 2318/91; Korea (S.) - no. 1991-11/98; Mexico - no. 910,0175; New Zealand - no. 238,925; Romania- no. 147,971; South Africa - no. 91/5314; USA - no.5,238,690, 5,266,316; Yugoslavia - no. 1228/91 Extended to Croatia no. P920477, Macedonia and Serbia;
5. Ben Shalom, N., **Elad, Y**., Fallik, E. and Pinto, R. (1994) Composition and method for controlling plant diseases caused by fungi. Israel patent no. 110446; US no. 08/453,651
6. Vishnevetsky, J., Flaishman, M., Cohen, Y., **Elad, I**., Velcheva, M., Hanania, U. and Perl, A. (2003) Transgenic disease-resistant banana. WO2005047515 A1; US US20060288446 A1. EP1692292 A1; EU patent 04799340.7-1212-IL2004001032
7. Pertot, I. and **Elad, Y**. (2009) Compound based on proteins controls plant pathogens (powdery mildews) on several crops (grapevine, strawberry, cucurbit and zucchini) VR2009A000123; PCT/IB2010/053552; EP2711437 A1; [CA2770614A1](https://www.google.si/patents/CA2770614A1?hl=iw&dq=patent+Compound+based+on+proteins+controls+plant+pathogens+(powdery+mildews)+on+several+crops+(grapevine,+strawberry,+cucurbit+and+zucchini&cl=en), [EP2464237A2](https://www.google.si/patents/EP2464237A2?hl=iw&dq=patent+Compound+based+on+proteins+controls+plant+pathogens+(powdery+mildews)+on+several+crops+(grapevine,+strawberry,+cucurbit+and+zucchini&cl=en), [US20120165247](https://www.google.si/patents/US20120165247?hl=iw&dq=patent+Compound+based+on+proteins+controls+plant+pathogens+(powdery+mildews)+on+several+crops+(grapevine,+strawberry,+cucurbit+and+zucchini&cl=en), WO2011018739 A2;[WO2011018739A3](https://www.google.si/patents/WO2011018739A3?hl=iw&dq=patent+Compound+based+on+proteins+controls+plant+pathogens+(powdery+mildews)+on+several+crops+(grapevine,+strawberry,+cucurbit+and+zucchini&cl=en);
8. Ezra, D., Lousky, T. and **Elad, Y**. (2009) Use of the novel endophytic fungus *Daldinia odoratus* for biological control. U.S. provisional no. 61/252679.
9. Brown Miara, S., Bucki, P., Dombrovski, A., **Elad, Y**., Ezra, D., Gamliel, A., Liarzi, O. Lichter, A., and Lousky, T. (2016) Uses of *Daldinia* sp. or volatile organic compounds derived therefrom. AU2016213956A,  [CN](https://patents.google.com/patent/CN110214178A/en?inventor=Elad+Yigal&oq=Elad+Yigal)[EP](https://patents.google.com/patent/EP3253864A4/en?inventor=Elad+Yigal&oq=Elad+Yigal)[US AU BR](https://patents.google.com/patent/AU2016213956A1/en?inventor=Elad+Yigal&oq=Elad+Yigal)[WO](https://patents.google.com/patent/WO2016125153A1/en?inventor=Elad+Yigal&oq=Elad+Yigal)2017  [*IL*](https://patents.google.com/patent/IL253800B/en?inventor=Elad+Yigal&oq=Elad+Yigal)
10. **Elad, Y**., Graber, E., Rav David, D. and Segal, S. (2017) Melanoidines and their use for improving properties of plants. International patent No 239915
11. Graber, E.R., **Elad, Y**., Rav David, D. and Segal, S. (2013) Use of melanoidines for controlling fungal plant diseases. PCT/IL2014/050047, [EP2945475A1](http://www.google.com/patents/EP2945475A1?hl=iw&cl=en), [US20150351392](http://www.google.com/patents/US20150351392?hl=iw&cl=en), [CN105188351A](https://www.google.si/patents/CN105188351A?hl=iw&dq=patent+use+of+melanoidins+for+controlling+fungal+plant+diseases&cl=en), [EP2945475A4](https://www.google.si/patents/EP2945475A4?hl=iw&dq=patent+use+of+melanoidins+for+controlling+fungal+plant+diseases&cl=en), [WO2014111932A1](https://www.google.si/patents/WO2014111932A1?hl=iw&dq=patent+use+of+melanoidins+for+controlling+fungal+plant+diseases&cl=en)
12. Graber, E.R., **Elad, Y**., Rav David, D. and Segal, S. (2014) Melanoidins and their use for improving properties of plants. [US14/760,704](https://patents.google.com/patent/US10398143B2/en?oq=patent+use+of+melanoidins+for+controlling+fungal+plant+diseases)  [ES](https://patents.google.com/patent/ES2896494T3/en?oq=patent+use+of+melanoidins+for+controlling+fungal+plant+diseases)[EP](https://patents.google.com/patent/EP2945475B1/en?oq=patent+use+of+melanoidins+for+controlling+fungal+plant+diseases)[US](https://patents.google.com/patent/US10398143B2/en?oq=patent+use+of+melanoidins+for+controlling+fungal+plant+diseases)[EP](https://patents.google.com/patent/EP3915378A1/en?oq=patent+use+of+melanoidins+for+controlling+fungal+plant+diseases)[CN](https://patents.google.com/patent/CN105188351B/en?oq=patent+use+of+melanoidins+for+controlling+fungal+plant+diseases)[AU](https://patents.google.com/patent/AU2014206502B2/en?oq=patent+use+of+melanoidins+for+controlling+fungal+plant+diseases)[WO](https://patents.google.com/patent/WO2014111932A1/en?oq=patent+use+of+melanoidins+for+controlling+fungal+plant+diseases)[EP](https://patents.google.com/patent/EP3424327B1/en?oq=patent+use+of+melanoidins+for+controlling+fungal+plant+diseases)[ES](https://patents.google.com/patent/ES2691081T3/en?oq=patent+use+of+melanoidins+for+controlling+fungal+plant+diseases)[*PL*](https://patents.google.com/patent/PL3424327T3/en?oq=patent+use+of+melanoidins+for+controlling+fungal+plant+diseases)[*TR*](https://patents.google.com/patent/TR201815600T4/en?oq=patent+use+of+melanoidins+for+controlling+fungal+plant+diseases)2019  [US](https://patents.google.com/patent/US20190357535A1/en?oq=patent+use+of+melanoidins+for+controlling+fungal+plant+diseases)
13. Oren-Shamir, M., Olivia, M., Lewinson, E., Alkan, N. and **Elad, Y**. (2017) Method of controlling fungal infections in plants. PCT Patent Application No. IL2017/050958
14. Graber, E.R., **Elad, Y**. (2019) Melanoidine elanoidin compositions for protecting crops from nonfungal pests IL 267627 submitted 7 2019
15. [Oren-Shamir](https://patents.google.com/?inventor=Michal+Oren-Shamir), M., [Oliva](https://patents.google.com/patent/CL2020002192A1/en?inventor=Elad+Yigal&oq=Elad+Yigal), M., [Lewinsohn](https://patents.google.com/patent/CL2020002192A1/en?inventor=Elad+Yigal&oq=Elad+Yigal), E., Alkan, N., **Elad, Y**. (2019) Method to improve the performance of the plant. US201862634992P [CA](https://patents.google.com/patent/CA3092205A1/en?inventor=Elad+Yigal&oq=Elad+Yigal)[AU](https://patents.google.com/patent/AU2019226052A1/en?inventor=Elad+Yigal&oq=Elad+Yigal)[*PE*](https://patents.google.com/patent/PE20210659A1/en?inventor=Elad+Yigal&oq=Elad+Yigal)[*BR*](https://patents.google.com/patent/BR112020017319A2/en?inventor=Elad+Yigal&oq=Elad+Yigal)[*WO*](https://patents.google.com/patent/WO2019162952A1/en?inventor=Elad+Yigal&oq=Elad+Yigal)[CN *MX*](https://patents.google.com/patent/CL2020002192A1/en?inventor=Elad+Yigal&oq=Elad+Yigal)[EP](https://patents.google.com/patent/EP3758487A4/en?inventor=Elad+Yigal&oq=Elad+Yigal) IL
16. Frenkel, O., **Elad, Y**. and Graber, E. (2024) Compositions and methods for treatments of plant diseases USA PCT 63/706,675.
17. **Elad Y**., Sela S., Shemesh M. and Kroupitski, Y. (2025) Method of pest control.

**Commercial products**

1. During 1990-2002 A preparation of *T.* *harzianum* aimed at the control of gray mold registered in Israel, Australia, Austria, Argentina, Brazil, Bulgaria, Check Republic, Chile, Colombia, Croatia, Denmark, France, Germany, Greece, Guatemala, Hungary, Italy, Mexico, Moldova, Morocco, Romania, Poland, Serbia, Slovakia, Slovenia, South Africa, Uruguay, Paraguay, Portugal, Spain, the Netherlands, Turkey, New Zealand, USA, United Kingdom, Yugoslavia.
2. 2016-2018 An induced resistance product, in a process of commercialization with a major agrichemical company (with Ellen Graber.
3. 2017-2024 An induced resistance product: NaturaFend 550SP with Copia Ltd and ICA International Chemicals (Pty) Ltd, South Africa (with Michal Oren Shamir and Noam Alkan).