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In order to have a global view of the commercial production of mycorrhizal plants in the world, a national and international research has been conducted to identify professional nurseries and some productive characteristics of this sector.

National (Spanish) and international databases of nurseries producing mycorrhizal plants have been created. Also, the characteristics of the different production systems, prices and species have been collected. For the Spanish territory the register offices where these nurseries are recorded have also been gathered.

At the international level, the collected data comes from countries in which fungi from the genus *Tuber* develop naturally (France, Italy, UK) and those that can potentially produce truffle. All of them have nowadays truffle tree plantations. There has been no data collection for plant nurseries in the People's Republic of China. All nurseries but one in the USA produce plants infected with *Tuber* spp. Some of them also inoculate with other fungal species.

The information has been obtained by three procedures: the authors' previous knowledge, World Wide Web search and inquiries to Spanish and foreign nursery owners and researchers.

Directory of Spanish nurseries

A total of 27 nurseries in 9 autonomous communities (regional governments) have been counted. The contact data can be checked in the following table where nurseries are organized by colors for the different regions. The column tagged as "Other species" shows a "yes" for nurseries that produce plants that are inoculated with other fungi species in addition to plants inoculated with fungi of the genus *Tuber* which are produced in all the listed nurseries.

Table 1. Directory of Spanish nurseries.

Nursery name	Contact information	Other species
El Origen de la Trufa (Andalucía)	www.elorigendelatrufa.com	No
Aragotruf S.L. (Aragón)	www.plantastruferas.com	No
Cultivos Forestales y Micológicos (Aragón)	www.cultivosforestales.com	Yes
Hermanos Salvador Redón (Aragón)	trufassarreon@hotmail.com	No
Inotruf, S.L. (Aragón)	www.inotruf.com	No
Miguel Santafé Bertolín e Hijos (Aragón)	Phone: +34 978 78 04 29	No
Trufico (Aragón)	trufico@yahoo.es	No
Turroltrufa (Aragón)	http://turroltrufa.com	No
Viveros Daniel Bertolín (Aragón)	www.trufasdanielbertolin.com	No
Viveros Hermanos Tolsá S.C. (Aragón)	Phone: +34 659 887 561	No
Vivero José Igual (Aragón)	j.igual@hotmail.com	No
Viveros José Rozalén (Aragón)	www.trufasrozalen.es	No
Viveros y Trufas La Incosa (Aragón)	Phone: +34 978 72 80 12	No
VITRUF (Castilla-La Mancha)	www.vitruf.com	No
MICONATUR S.L (Castilla-La Mancha)	www.campodetrufas.com	Yes
Aire Puro de Urbión, S.L.L. (Castilla y León)	www.airepurodeurbion.com	No
Viveros Encitruf (Castilla y León)	www.encitruf.es	No
Viveros Forestales Santa Ana (Castilla y León)	www.viverosforestalesantaana.com	No
Viveros Fuenteamarga (Castilla y León)	http://viverosfuenteamarga.com/	Yes
Viveros Tuber (Castilla y León)	viverostuber@yahoo.es	No
Micología Forestal & Aplicada (Cataluña)	www.micofora.com	Yes
Viveros Alto Palancia (Com. Valenciana)	www.planta-trufa-viveros-alto-palancia.es	No
Viver-truficultura (Com. Valenciana)	www.viver-truficultura.com	No
Hifas da Terra (Galicia)	www.hifasdaterra.com	Yes
Thader Biotechnology S.L. (Murcia)	www.thaderbiotechnology.es	Yes
Viveros Alharabe (Murcia)	www.viverosalharabe.com	Yes
Viveros VEPLAM (La Rioja)	www.sotoencameros.org	No

Mycorrhizal plants not mycorrhized with *Tuber* spp. in Spanish nurseries

Some Spanish nurseries offer plants inoculated with fungi not belonging to the *Tuber* genus. These plants can be divided in two groups:

- Plants inoculated with fungi that produce edible mushrooms. They include the genera *Lactarius*, *Boletus*, *Russula*, *Terfezia*, *Picoa* and *Tirmania*.
- Plants inoculated with fungi to improve disease and stress resistance for both nursery and plantation conditions. These fungi belong to the genera *Glomus* and *Pisolithus*.

Spanish registers for plant producers

All Spanish nurseries have to be registered in order to sell their plants. On a national level, there is an Official Register of Seed and Plant Producers, Traders and Importers. Mycorrhizal plant nurseries are included in the forest nursery section.

Furthermore, every autonomous community has one or several register offices to record seed and plant producers and dealers. These registries always include a plant passport registry and then may include one or two more registries for producers and retailers.

These autonomous registers are usually managed by the Plant Health Service of the related Agricultural Department. They also manage the emission and control of plant passports.

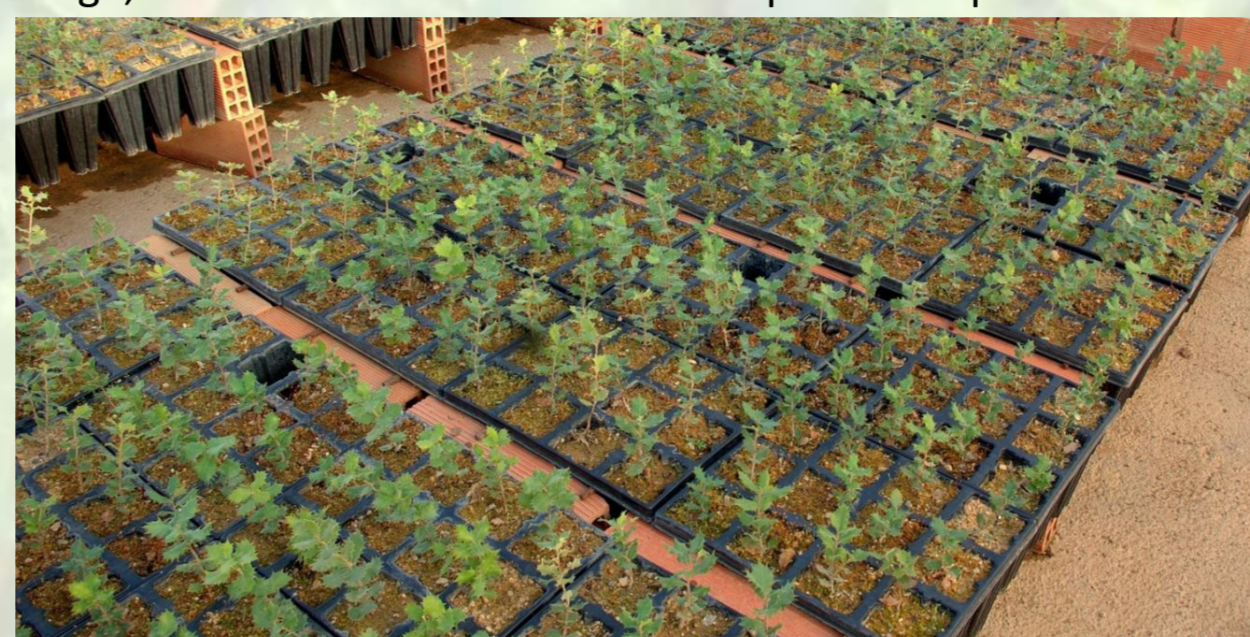


Figure 1. *Quercus ilex* inoculated with black truffle in 650 cm³ containers (Spain).

Black Périgord truffle plant prices for different countries

In the following table plant price ranges for different countries can be compared. All prices are for 1 to 2 year old plants inoculated with *Tuber melanosporum*. Whenever it has been possible, only prices for professional farmers have been included (not on-line retail prices). All prices are before tax. Prices depend mainly on amount of plants ordered and, rarely, on container size or plant age/height. Only in two nurseries prices also depend on the plant species ordered.

Some nurseries include certification services already as part of the price while others offer this service as optional and with a varying price depending on the number of plants to be certified.

Table 2. Price ranges for plants inoculated with black truffle.

Country	Price range (euros)	Data sources
Spain	4 to 8	23
France	5 to 18.95	10
Italy	8 to 14	2
Bulgaria	9 to 10	1
USA	11.23 to 18.71	2
Canada	26.02 to 40.9	2
Chile	10.47 to 14.96	2
Australia	15.42 to 46.27	4
New Zealand	28.46 to 33,37	2
South Africa	10,99	1

Mycorrhizal plants not mycorrhized with *Tuber* spp. in foreign nurseries

Only three foreign nurseries offer plants inoculated with fungi from species different to those of the *Tuber* genus.

They inoculate for mushroom production with fungi from the genera *Lactarius* and *Suillus*. For plant resistance and performance improvement they use the genera *Glomus*, *Laccaria*, *Suillus*, *Pisolithus* and *Rhizopogon*.



Figure 2. *Quercus ilex* inoculated with black truffle in 450 cm³ containers (Spain).

International nursery directory

In the following table the foreign nurseries are arranged by continents indicated by different colors with varying shades for each country. Whenever it has been possible, the web page is provided in the contact information. If not available, e-mail addresses will have priority over phone numbers.

Table 3. International nursery directory.

Nursery name	Contact information
Robin Pépinières (France)*	www.robinpepinieres.com
PépinèreWollner (France)	www.pepiniere-wollner.fr
Pépinères Jean-LucBénard (France)	www.pepiniere-benard.fr
Pépinère Tenoux (France)	www.pepinierstenoux.fr
Pépinère Beaucamp (France)	http://pepinieres-beaucamp.fr/
Naudet Pépinières (France)	www.pepinieres-naudet.com
Pépinère Bernal (France)	BernalFamily@aol.com
Pépinère Champagnac (France)	alain.champagnac@wanadoo.fr
Pépinère de Puymège (France)	tvdk@wanadoo.fr
SCA Agritruffe (France)	http://www.agitruffe.com
Nouvelles Pépinières F. Chaumeil (France)	aurore.verlhac@orange.fr
Pépinère du Luberon (France)	d.jouve@pepinieres-naudet.com
Ayme Truffe (France)	www.ayme-truffe.com
Pépinère Nogier (France)	robert.nogier@wanadoo.fr
Pépinère Martin (France)	Phone: +33 04 67 38 07 70
Pépinère Rouvier (France)	rouvier.v@wanadoo.fr
SA Pépinières Jean Rey (France)	www.jeanrey.fr
SCEA Espenon Gilbert (France)	Phone: +33 04 90 66 01 03
Pépinère Moine (France)	www.pepinieremoine.com
Pépinères Clop (France)	www.pepinierescloup.fr
Pépinère Houette (France)	www.truffehouette.com
EuroTruffles (France)	sanchez.albert@wanadoo.fr
Les Mycéliums du Quercy (France)	www.myceliumsduquercy.com
FIOC Louis et Jean (France)	Phone: +33 04 75 98 10 84
Pépinères Grazioso (France)	Phone: +33 04 67 81 05 10
Frederic Christophe Regner (France)	frederic.regner@wanadoo.fr
Pépinères N'GUYEN et BERNADACH (France)	p.bernadach@gmail.com
Pépinère de Genolier (Switzerland)	http://www.plants-truffieres.ch
Raggi Vivai (Italy)	www.raggivivai.it
Vivai Azzato (Italy)	www.vivalazzato.it
Mico Plants Tartuficoltura (Italy)	http://micoplants.it/
UmbraFlors.r.l. (Italy)	www.umbraflor.it
Micoverde (Italy)	www.micoverde.it
Tuber Ascoli (Italy)	www.tuberascoli.it
Agrituber (Italy)	www.agrituber.it
Vivaio Angelozzi Tartufi (Italy)	www.angelozzitartruffi.com
MycorrhizalSystems Ltd. (United Kingdom)	www.plantationsystems.com
Truffle UK Ltd (United Kingdom)	www.truffle-uk.co.uk
TrüffelGarten (Austria)	www.trueffelgarten.at
"Kipro&Co" Ltd Bourgas (Bulgaria)	www.kipro-bg.com
Truffoir Ltd. (Romania)	http://www.truffoir.ro/EN/Home.aspx
Troufa.net Truffeplants (Greece)	http://www.troufa.net/start_en.html
American Truffle Company (USA)	www.americantruffle.com
Garland Truffles (USA)	www.garlandtruffles.com
New World Truffieres (USA)	http://www.truffletree.com
Tree of Life Nursery (USA)*	www.californianativeplants.com
Virginia Truffles, LLC (USA)	http://virginiatruffle.com
Duckett Truffieres (Canada)	www.ducketttruffieres.com
Trufficulture (Canada)	www.trufficulture.ca
Trufas de la Patagonia, S.A. (Argentina)	www.trufasdelapatagonia.com.ar
Trufas del Nuevo Mundo (Argentina)	www.trufasdelnuevomundo.com
Agrobiotruf S.A. (Chile)	www.trufaschile.cl
Andean Truffles SpA (Chile)	http://trufaschile.wordpress.com/
Trufas del Sur (Chile)	www.trufasdelsur.cl
Vivero Trufas.CL (Chile)	www.viverotrufas.cl
Manjimup Truffles, Five Acre Nursery (Australia)	www.manjimuptruffles.com.au
Oak Valley Truffles (Australia)	http://oakvalleytruffles.com.au/
Perigord Truffles of Tasmania (Australia)	www.perigord.com.au
The Australian State Truffle Enterprise (Australia)	www.truffles.net.au
Truffles Australis Pty Ltd (Australia)	www.trufflesaustralis.com.au
Trufficulture Pty Ltd (Australia)	www.trufficulture.com.au
Canterbury Truffles (New Zealand)	www.canterburytruffles.com
Oakland Truffière, Oakfield Ltd. (New Zealand)	www.oaklandtruffles.com
Oregon Nurseries Ltd*	www.oregonnurseries.co.nz
Southern Cross & Southern Woods Nursery (New Zealand)	www.southernwoods.co.nz
Truffle Growers SA (South Africa)	www.africantruffles.com
Woodford Truffles SA (Pty)Ltd. (South Africa)	http://woodfordtruffles.co.za

* Nurseries producing plants mycorrhized with genera different to *Tuber*.