

ANEXO 1

Lista de enfermedades que afectan al cultivo del tomate. Fuente:APS,
[\[http://www.apsnet.org/publications/commonnames/Pages/Tomato.aspx\]](http://www.apsnet.org/publications/commonnames/Pages/Tomato.aspx)

- **Enfermedades provocadas por bacterias:**

Bacterial canker

Clavibacter michiganensis subsp. *michiganensis* (Smith) Davis *et al.*

Bacterial leaf blight

Pseudomonas viridiflava (Burkholder) Dowson

Bacterial soft rot

Dickeya chrysanthemi (Burkholder *et al.*) Samson *et al.*

Pectobacterium carotovorum (Jones) Waldee

(syn. *Erwinia carotovora* subsp. *carotovora* [Jones])

Bacterial sour rot

Lactobacillus spp.

Leuconostoc mesenteroides (Tsenkovskii) van Tieghem

Bacterial speck

Pseudomonas syringae van Hall pv. *tomato* (Okabe) Young, Dye, & Wilkie

Bacterial spot

Xanthomonas euvesicatoria Jones *et al.*

X. gardneri (ex Šutic) Jones *et al.*

X. perforans Jones *et al.*

X. vesicatoria (ex Doidge) Vauterin *et al.*

Bacterial stem rot

Pectobacterium carotovorum (Jones) Waldee

(syn. *Erwinia carotovora* subsp. *carotovora* [Jones] Dye)

Bacterial wilt

Ralstonia solanacearum (Smith) Yabuuchi *et al.*

Pith necrosis

Pseudomonas cichorii (Swingle) Stapp

P. corrugata Roberts & Scarlett

P. fluorescens Migula

P. mediterranea Catara *et al.*

P. viridiflava (Burkholder) Dowson

Psyllid yellows and vein greening

'*Candidatus Liberibacter solanacearum*' Liefting *et al.*

Root mat

Agrobacterium radiobacter (Beijerinck & van Delden) Conn, biovar 1

Seedling blight and leaf spot

Herbaspirillum huttiense (Leifson) Ding & Yokota

Syringae blight and leaf spot

Pseudomonas syringae pv. *syringae* van Hall

- **Enfermedades provocadas por hongos:**

Alternaria stem canker

Alternaria alternata (Fr.:Fr.) Keissl. f. sp. *lycopersici* Keissl.

Anthraco nose

Colletotrichum coccodes (Wallr.) S. Hughes

C. dematium (Pers.:Fr.) Grove

C. gloeosporioides (Penz.) Penz. & Sacc.

Black mold

Alternaria alternata (Fr.:Fr.) Keissl.

A. arborescens E. G. Simmons

Stemphylium botryosum Wallr.

Black mold rot

Alternaria alternata (Fr.:Fr.) Keissl.

(syn. *A. tenuis* Nees)

Pleospora lycopersici Marchal & É. J. Marchal

(syn. *P. herbarum* [Pers.] Rabenh.)

Stemphylium botryosum Wallr.

(syn. *Pleospora tarda* E. G. Simmons)

S. consortiale (Thüm.) J. W. Groves & Skolko

Black root rot

Thielaviopsis basicola (Berk. & Broome) Ferraris

(syn. *Chalara elegans* Nag Raj & W. B. Kendr.)

Buckeye rot

Phytophthora capsici Leonian

P. drechsleri Tucker

P. nicotianae var. *parasitica* (Dastur) G. M. Waterhouse

Cercospora leaf mold

Pseudocercospora fuligena (Roldan) Deighton

Charcoal rot

Macrophomina phaseolina (Tassi) Goid.

(syn. *M. phaseoli* [Maubl.] S. F. Ashby)

Corky root rot

Pyrenochaeta lycopersici R. Schneid. & Gerlach

Didymella stem rot

Didymella lycopersici Kleb.

(syn. *Phoma lycopersici* Cooke)

Early blight

Alternaria tomatophila E. G. Simmons

Fusarium crown and root rot

Fusarium oxysporum Schltdl.:Fr. f. sp. *radicis-lycopersici* Jarvis & Shoemaker

Fusarium foot rot

Fusarium solani (Mart.) Sacc. f. sp. *eumartii* (C. W. Carp.) W. C. Snyder & H.

N. Hansen Fusarium wilt

Fusarium oxysporum Schltdl.:Fr. f. sp. *lycopersici* (Sacc.) W. C. Snyder & H. N.

Hansen

Gray leaf spot

Stemphylium botryosum Wallr. f. sp. *lycopersici* Rotem, Y. Cohen, & I. Wahl

(syn. *Pleospora herbarum* [Pers.:Fr.] Rabenh.)

S. lycopersici (Enjoji) W. Yamam

(syn. *S. floridanum* Hannon & G. F. Weber)

S. solani G. F. Weber

Gray mold

Botrytis cinerea Pers.:Fr.

- Gray mold rot (Botrytis fruit rot)
Botrytis cinerea Pers.:Fr.
- Late blight
Phytophthora infestans (Mont.) de Bary
- Leaf mold
Passalora fulva (Cooke) U. Braun & Crous
 (syn. *Fulvia fulva* [Cooke] Cif.)
- Phoma rot
Phoma destructiva var. *destructiva* Plowr.
 (syn. *P. destructiva* Plowr.)
- Phytophthora root rot
Phytophthora capsici Leonian
P. nicotianae var. *parasitica* (Dastur) G. M. Waterhouse
- Powdery mildew
Leveillula taurica (Lév.) G. Arnaud
 (syns. *Oidiopsis sicula* Scalia; *O. taurica* [Lév.] E. S. Salmon)
Oidium lycopersici Cooke & Massee
O. neolycopersici L. Kiss
- Pythium damping-off and stem rot
Pythium aphanidermatum (Edson) Fitzp.
P. arrhenomanes Drechsler
P. debaryanum R. Hesse.
P. myriotylum Drechsler
P. ultimum Trow
- Pythium fruit rot
Pythium aphanidermatum (Edson) Fitzp.
P. ultimum Trow
- Rhizoctonia damping-off, root rot, stem rot, and stem canker
Rhizoctonia solani J. G. Kühn
 (syn. *Thanatephorus cucumeris* [A. B. Frank] Donk)
- Rhizoctonia foliar blight
Rhizoctonia solani J. G. Kühn anastomosis group 3 (AG-3)
 (syn. *Thanatephorus cucumeris* [A. B. Frank] Donk)
- Rhizoctonia fruit rot
Rhizoctonia solani J. G. Kühn
 (syn. *Thanatephorus cucumeris* [A. B. Frank] Donk)
- Rhizopus rot
Rhizopus stolonifer (Ehrenb.) Vuill.
 (syn. *R. nigricans* Ehrenb.)
- Septoria leaf spot
Septoria lycopersici Speg.
- Sour rot (Watery rot, Geotrichum rot, Oospora rot)
Geotrichum candidum Link
 (syns. *Oidium lactis* Fresen; *Oospora lactis* [Fresen] Sacc.)
G. penicillatum (Carmo Sousa) Arx Southern blight
Sclerotium rolfsii Sacc.
 (syn. *Athelia rolfsii* [Curzi] Tu & Kimbr.)
- Target spot
Corynespora cassiicola (Berk. & M. A. Curtis) C. T. Wei
- Verticillium wilt
Verticillium albo-atrum Reinke & Berthier
V. dahliae Kleb.
- White mold
Sclerotinia minor Jagger
S. sclerotiorum (Lib.) de Bary

Zonate leaf spot

Hinomyces moricola (I. Hino) Narumi & Y. Harada

(syns. *Cristulariella moricola* [I. Hino] Redhead; *C. pyramidalis* Waterman & R. P. Marshall; *Grovesinia pyramidalis* M. N. Cline, J. L. Crane, & S. D. Cline)

• **Enfermedades provocadas por nematodos**

Lesion nematodes: *Pratylenchus* spp.

P. crenatus Loof

P. neglectus (Rensch) Filipjev & Schuurmans Stekhoven

P. penetrans (Cobb) Chitwood & Oteifa

P. scribneri Steiner

P. thornei Sher & Allen

P. vulnus Allen & Jensen

Reniform nematodes: *Rotylenchulus* spp.

R. reniformis Linford & Oliveira

Root-knot nematodes: *Meloidogyne* spp.

M. arenaria (Neal) Chitwood

M. floridensis Handoo *et al.*

M. hapla Chitwood

M. incognita (Kofoid & White) Chitwood

M. javanica (Treub) Chitwood

M. mayaguensis Rammah & Hirschmann

Sting nematodes: *Belonolaimus* spp.

B. longicaudatus Rau

• **Enfermedades de carácter fisiológico:**

Autogenous necrosis

Genetic

Black shoulder

Unconfirmed etiology

Blind plants

Genetic

Blossom drop

Stress conditions (prolonged temperature extremes, high relative humidity, excessive wind); improper nutrition; foliar diseases; insects

Blossom-end rot

Calcium deficiency

Bull plants

Genetic

Catface

Cold temperatures (extreme night/day temperature fluctuations); pruning; excessive

nitrogen

Chilling injury

Cold temperatures

Cuticle cracking (rain check, weather check, crazing, russetting)

Unknown (possibly, rain)

Fruit pox

Genetic

Gold fleck

Genetic

Graywall

- Unconfirmed etiology
- Growth cracks
 - Alterations in growth rate; rain; temperature fluctuations
- Internal white tissue
 - Potassium deficiency; high temperatures
- Puffiness (boxiness, pockets)
 - Improper nutrition; insufficient light; temperature extremes; wet soils; drought; auxin
 - growth regulators
- Spider track
 - Unknown
- Sunscald
 - Sudden exposure to sun (after pruning, harvesting); foliar diseases; insects
- Tomato little leaf
 - Absorption of amino acid analogs from rhizosphere
- Water wilt
 - Excessive rain
- Yellow shoulder (yellow top, persistent green shoulder)
 - Unknown (possibly, high temperatures)
- Zebra-stem
 - Genetic
- Zippering
 - Cool temperatures

- **Enfermedades provocadas por fitoplasmas:**

- Hoja de perejil (parsley leaf)
 - Parsley leaf phytoplasma
- Tomato big bud
 - Tomato big bud group of phytoplasmas
- Tomato yellows (TY)
 - Tomato yellows phytoplasma

- **Enfermedades provocadas por viroides:**

- Citrus exocortis viroid* (CEVd)
- Columnnea latent viroid* (CLVd)
- Potato spindle tuber viroid* (PSTVd)
- Tomato apical stunt viroid* (TASVd)
- Tomato chlorotic dwarf viroid* (TCDVd)
- Tomato planta macho viroid* (TPMVd)

- **Enfermedades provocadas por virus:**

- Alfalfa mosaic
 - Alfalfa mosaic virus* (AMV)
- Cucumber mosaic
 - Cucumber mosaic virus* (CMV)
- Curly top
 - Beet curly top virus* (BCTV)
- Pepino mosaic
 - Pepino mosaic virus* (PepMV)
- Picorna-like virus diseases
 - Chocolate spot*

- Tomato chocolate spot virus* (ToCSV)
- Tomato apex necrosis / Tomato marchitez
 - Tomato apex necrosis virus* (ToANV) / *Tomato marchitez virus* (ToMarV)
- Tomato torrado
 - Tomato torrado virus* (ToTV)
- Potato yellow vein
 - Potato yellow vein virus* (PYVV)
- Tobacco etch
 - Tobacco etch virus* (TEV)
- Tomato bushy stunt
 - Lettuce necrotic stunt virus* (LNSV)
 - Tomato bushy stunt virus* (TBSV)
- Tomato mosaic
 - Tobacco mosaic virus* (TMV)
 - Tomato mosaic virus* (ToMV)
- Tomato mottle
 - Tomato mottle virus* (ToMoV)
- Tomato spotted wilt
 - Tomato spotted wilt virus* (TSWV)
- Tomato yellow leaf curl
 - Tomato yellow leaf curl virus* (TYLCV)
- Tomato yellow mosaic
 - Tomato yellow mosaic virus* (ToYMV)
- Vein-banding mosaic
 - Potato virus Y* (PVY)
- Yellow leaf disorder
 - Tomato chlorosis virus* (ToCV)
 - Tomato infectious chlorosis virus* (TICV)