



Host range, geographical distribution and current accepted names of cercosporoid and ramularioid species in Iran

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Abstract

Comprehensive up to date information of cercosporoid and ramularioid species of Iran is given with their hosts, geographical distribution and references. A total of 186 taxa belonging to 24 genera are listed. Among them, 134 taxa were belonged to 16 *Cercospora* and *Cercospora*-like genera viz. *Cercospora* (62 species), *Cercosporidium* (1 species), *Clypeosphaerella* (1 species), *Fulvia* (1 species), *Graminopassalora* (1 species), *Neocercospora* (1 species), *Neocercosporidium* (1 species), *Nothopassalora* (1 species), *Paracercosporidium* (1 species), *Passalora* (21 species), *Pseudocercospora* (36 species), *Rosisphaerella* (1 species), *Scolecostigmina* (2 species), *Sirosporium* (2 species), *Sultanimyces* (1 species) and *Zasmidium* (1 species); and 52 taxa were belonged to 8 *Ramularia* and *Ramularia*-like genera viz. *Cercosporella* (2 species), *Microcyclosporella* (1 species), *Neoovularia* (2 species), *Neopseudocercosporella* (1 species), *Neoramularia* (2 species), *Ramularia* (42 species), *Ramulariopsis* (1 species) and *Ramulispora* (1 species).

Key words – anamorphic fungi – biodiversity – *Cercospora*-like genera – *Ramularia*-like genera – west of Asia

Introduction

Cercosporoid and ramularioid fungi are traditionally related to the genus *Mycosphaerella* Johanson. Sivanesan (1984) investigated teleomorph-anamorph connexions in bitunicate ascomycetes and cited that *Mycosphaerella* is related to some anamorphic genera viz. *Cercospora* Fresen., *Cercosporella* Sacc., *Cladosporium* Link, *Ovularia* Sacc., *Phaeoisariopsis* Ferraris, *Pseudocercospora* Speg., *Pseudocercosporella* Deighton, *Ramularia* Unger, *Stenella* Syd. and *Stigmina* Sacc., which are morphologically diverse and distributed all over the world. Most of them cause leaf spot symptoms on various host plants and are important parasitic fungi. Braun (1995, 1998) described and illustrated *Cercosporella*, *Ramularia* and allied genera in his monographs. Crous & Braun (2003) narrowed the generic concept of *Cercospora* s. lat. and divided it into smaller units. They recognized four true cercosporoid genera, viz. *Cercospora*, *Pseudocercospora*, *Passalora*, *Stenella* and several other morphologically similar genera on the basis of molecular sequence data and a reassessment of morphological characters. The genus *Mycosphaerella* has been confined to sexual morphs associated with *Ramularia* anamorphs (Crous et al. 2009) and *Ramularia* is preferred over *Mycosphaerella* which represented an old generic name (Rossman et al. 2015). Many taxonomic treatments are carried out in different countries which resulted in

publishing new global or regional records (Braun & Crous 2007, Braun et al. 2010, Nakashima et al. 2007, 2010, Phengsintham et al. 2010, 2013, To-Anun et al. 2011).

Database of cercosporoid and ramularioid species in Iran contains a list of species recorded by numerous authors in two time periods: 1939-2009 and 2009-2018. Petrak (1939) was the first author who reported *Cercospora taurica* Tranzsch., *Passalora phaeopappi* Petr., *Ramularia marrubii* C. Massal., *R. valerianae* (Speg.) Sacc. and *R. bornmülleriana* (Magnus) U. Braun (as *Ovularia bornmülleriana*) from Iran.

Sporadic reports have provided additional information of cercosporoids and ramularioids fungi in Iran (Petrak 1949, 1953, Eskandari 1964, Esfandiari 1946a, b, 1948, 1951, Petrak & Esfandiari 1941, Scharif & Ershad 1966, Viennot-Bourgin et al. 1969, 1970, Minassian 1971, Ebrahimi & Minassian 1973, Hedjaroude 1976, 1983). Bakhshi et al. (2012a) had published a list of cercosporoid fungi and provided information of only 89 species. Most special efforts are made in the recent years and a large number of new records and/or species with their host plants have been added to the mycobiota of Iran (Pirnia et al. 2012a, b, c, d, Hesami et al. 2011, 2012, Khodaparast et al. 2012a, b, Bicharanlou et al. 2013a, b, c, Pirnia 2014, Bakhshi et al. 2014, 2015a, b, Behrooz et al. 2015a, b, 2017a, b, Bakhshi & Arzanlou 2017, Heydari et al. 2017, Pirnia & Braun 2018). The present list provides comprehensive overview of cercosporoid and ramularioid species and is meant to be a first step towards a monograph of those fungi in Iran.

Materials & Methods

During 2009-2019, numerous new specimens collected from various provinces of Iran including Ardabil, Fars, Golestan, Gilan, Hamedan, Kohgiluyeh & Boyer-Ahmad, Kurdistan, Mazandaran, North Khorasan and West Azarbaijan (Fig. 1). Herbarium specimens of cercosporoids and ramularioids fungi were re-examined using light microscopy (Olympus CH30).

The fungal nomenclature and taxonomy follow Braun (1995, 1998), Crous & Braun (2003) and Videira et al. (2017) which also agrees with Index Fungorum (2019) (<http://www.indexfungorum.org>) and MycoBank (2019) (<http://www.mycobank.org>). The host plant nomenclature follows Mozaffarian (2012) and the International Plant Names Index (2019) (www.ipni.org). Species names used in the original publications, which deviate from those in the latter publication, are cited as synonyms. Currently accepted names are marked in bold. Taxa are listed in alphabetical order by genus and species names. The host plant names, locations and related references are cited after fungal names. The name of Provinces placed in parenthesis.

All specimens are deposited in the internationally recognized fungus reference collection of the Iranian Ministry of Agriculture “IRAN” at the Iranian Research Institute of Plant Protection, Tehran, Iran.

Results

186 taxa belonging to 24 genera of cercosporoid and ramularioid species on 355 host plants belonging to 66 plant families are listed. The highest number of species are recorded on the *Fabaceae* (21 species for *Cercospora* and *Cercospora* like species) and *Asteraceae* (7 species for *Ramularia* and *Ramularia* like species). According to new changes and new concept of the genus in *Mycosphaerellaceae* (Videira et al. 2016, 2017), 76 new or less known records of cercosporoids and 22 new or less known records of ramularioids have been added to Iranian mycobiota.

The given list is based on published literature and recently collected additional specimens. New records of fungi, their host plants and/or locations reported by other researchers were shown by one asterisk (*) and new or less known records which examined and confirmed by the author were shown by two asterisks (**).



Fig. 1 – Provinces of Iran (<https://en.wikipedia.org/wiki/Iran>)

1.*Cercospora acnidae*** Ellis & Everh.

Host: *Amaranthus chlorostachys* var. *chlorostachys* Willd. & Thell. (*Amaranthaceae*).

Location: Shastkola Forest (Golestan Prov.).

Reference: Pirnia et al. 2010.

Note: The species was originally isolated from *Acnida cannabina* and *A. commons* (*Amaranthaceae*). Conidiophores multiseptate, geniculate in the upper part, attenuated towards the tip. Conidia acicular, straight to slightly curved, 5–11 septate (Chupp 1954).

2. *Cercospora althaeina* Sacc.

Hosts: *Althaea* sp., *A. rosea* Cav., **Gossypium hirsutum* cav., **Hibiscus syriacus* L. *Malva silvestris* (*Malvaceae*).

Locations: Rasht, Sowme'eh Sara, *Talesh, (Gilan Prov.), Gogan (Golestan Prov.), *Nowshahr (Mazandaran Prov.), *Kalibar (East Azarbaijan Prov.).

References: Petrak 1956, Scharif & Ershad 1966, Ebrahimi & Minnasian 1973, Hesami et al. 2011, Bicharanlou et al. 2013a, Pirnia 2014, Bakhshi et al. 2015a.

Note: Petrak 1956 reported the species on *Althaea* sp. Its occurrence on *Gossypium hirsutum* and *Hibiscus syriacus* are newly reported. Conidiophores is moderately dense fascicles, geniculate. Conidia obclavate-cylindrical, tip subacute, base obconically truncate.

3.*Cercospora apii* s. lat.**

Hosts: **Bergenia crassifolia* (L.) Fritsch. (*Saxifragaceae*), **Berberis thunbergii* DC. (*Berberidaceae*), **Cercis siliquastrum* L. (*Fabaceae*), **Chaenomeles japonica* (Thunb.) Lindl. (*Rosaceae*), *Cynanchum acutum* (*Apocynaceae*), *Ecballium elaterium* (*Cucurbitaceae*), **Gynkgo biloba* L. (*Gynkgoaceae*), *Heliotropium europaeum* (*Boraginaceae*), *Lycopersicon esculentum* Mill. (*Solanaceae*), *Vigna sinensis* (L.) Endl., (*Fabaceae*), **Washingtonia robusta* (André) H. Wendl. (*Arecaceae*).

Locations: *Nowshahr (Mazandaran Prov.), *Chaboksar, *Astara (Gilan Prov.) *Tarom (Zanjan Prov.), *Horand, *Khoy (East and West Azarbaijan Prov.), *Moghan (Ardabil Prov.).

References: Pirnia et al. 2010, Bicharanlou et al. 2013a, Bakhshi et al. 2015a.

Note: Conidiophores in loose to dense fascicles. Conidiogenous cells proliferating sympodially, mostly uni-local. Conidia solitary, shorter ones cylindro-obclavate, longer ones acicular. *Cercospora apii* s. lat. comprising a large complex of morphologically indistinguishable taxa. Furthermore, literature review showed that there is no any report of *Cercospora* on the plant genera *Bergenia* Moench, *Ginkgo* L. and *Washingtonia* H. Wendl. from all over the world.

4.**Cercospora armoraciae* Sacc.

Hosts: *Cardaria draba* L. (*Brassicaceae*), *Capparis spinosa* L. (*Capparidaceae*), *Coronilla varia* (*Fabaceae*), *Tanacetum balsamita* (*Asteraceae*).

Locations: Mianeh (East Azarbaijan Prov.), Tarom (Zanjan Prov.), Khoy (West Azarbaijan Prov.), Ahvaz (Khuzestan Prov.).

Reference: Bakhshi et al. 2015a.

Note: Conidiophores solitary or in loose fascicles. Loci conspicuous. Conidia cylindro-obclavate to acicular, tip obtuse, base obconically truncate. The species is common on *Brassicaceae*, but its occurrence on host plants belonging to *Asteraceae*, *Capparidaceae* and *Fabaceae* are newly reported.

5.***Cercospora avicennae* Chupp

Host: *Abutilon theophrasti* Medik. (*Malvaceae*).

Locations: Gorgan (Golestan Prov.), Rasht, Lahijan (Gilan Prov.).

References: Pirnia et al. 2010 as *C. apii* s. lat., Hesami et al. 2011, Pirnia 2014.

Note: Long and short conidiophores aggregated in moderately dense fascicles. Conidiogenous loci conspicuous, terminal. Short conidia cylindrical to obclavate-cylindrical, longer ones acicular.

6. *Cercospora beticola* Sacc.

Hosts: *Beta maritima* L., *B. vulgaris* L., *Chenopodium* spp., *Spinacia oleracea* L., (*Chenopodiaceae*), *Sonchus* sp., *S. asper*, (*Asteraceae*), *Malva silvestris*, *M. neglecta* (*Malvaceae*), *Plantago lanceolata* L. (*Plantaginaceae*), *Sesamum indicum* (*Pedaliaceae*), *Rumex crispus* L. (*Polygonaceae*).

Locations: Gharakhil, Farahabad, Shahsavari, *Ramsar (Mazandaran Prov.), Khoy, Orumieh (West Azarbaijan Prov.), Ahvaz, Dezful (Khuzestan Prov.), Kazerun (Fars Prov.), Bojnord (North Khorasan Prov.) Gorgan (Golestan Prov.), Lahijan, Rasht, *Roudsar, *Astara, (Gilan Prov.), *Gachsaran, *Yasuj (Kohgiluyeh & Boyer-Ahmad Prov.), *Tarom (Zanjan Prov.), *Moghan (Ardabil Prov.).

References: Esfandiari 1946a, Esfandiari 1947, Khabiri 1952, 1958, Golato 1960, Eskandari 1964, Scharif & Ershad 1966, Eskandari et al. 1969, Vinnot-Bourgin et al. 1969, Altman et al. 1972, Ebrahimi & Minnasian 1973, Vaziri 1973, Alian et al. 2008, Hesami et al. 2011, Pirnia 2014, Bakhshi et al. 2015a, Behrooz et al. 2017a.

Note: Conidiophores in loose to dense fascicles, brown, paler towards apex. Conidia acicular, rarely cylindro-obclavate, tip acute to subacute, base truncate. Crous & Braun (2003) redisposed *C. beticola* as a synonym of *C. apii* s. lat. However, Groenewald et al. (2006) showed that, *C. apii* and *C. beticola* s. stricto are two distinct species.

7.***Cercospora bizzozeriana* Sacc. & Berl.

Host: *Cardaria draba* L. (*Brassicaceae*).

Locations: Yazd (Yazd Prov.), Gachsaran (Kohgiluyeh & Boyer-Ahmad Prov.).

Reference: Pirnia et al. 2012a, Pirnia 2014, Behrooz et al. 2017a.

Note: Conidiophores in loose to dense fascicles. Conidia cylindrical to cylindro-obclavate, tip bluntly rounded, obtuse, base truncate.

- 8.**Cercospora brachiata* Ellis & Everh.**
Host: *Amaranthus* sp. (*Amaranthaceae*).
Locations: Rasht, Langrud, Roudsar, Sowme'eh Sara (Gilan Prov.).
Reference: Hesami et al. 2011.
Note: Conidiophores in loose to divergent fascicles, narrow towards the tip. Conidia acicular, tip acute, base truncate.
- 9.***Cercospora brunckii* Ellis & Galloway**
Hosts: *Pelargonium* sp., **P. zonale* (L.) L Her. ex Ait, (*Geraniaceae*).
Locations: Sowme'eh Sara, Langroud, Rasht, Roudsar (Gilan Prov.), Mahmoudabad (Mazandaran Prov.).
References: Pirnia et al. 2010 as *C. apii* s.lat., Hesami et al. 2011, Bicharanlou et al. 2013a as *C. apii* s.lat., Pirnia 2014.
Note: Conidiophores straight, 1–2 times geniculate. Conidiogenous cells proliferating sympodially. Longer conidia acicular, shorter ones obclavate. *Cercospora brunckii* is a common name on the plant genera *Pelargonium* L'Hér and *Geranium* L.
- 10. *Cercospora canescens* Ellis & G. Martin**
Hosts: *Phaseolus vulgaris* L., *Vigna sinensis* (L.) Endl., *V. anguiculata* (L.) Walp. (*Fabaceae*).
Locations: Rasht, Roudsar, Astaneh, Sowme'eh Sara (Gilan Prov.), Babol (Mazandaran Prov.).
References: Altman et al. 1972, Ershad 1995, Pirnia et al. 2010 as *C. apii* s.lat., Hesami et al. 2012, Pirnia 2014.
Note: Three *Cercospora* species are reported on *Vigna* spp. in Iran which morphologically distinguishable viz. *C. canescens*: Conidiophores pale brown, Conidia long acicular. *C. kikuchii* T. Matsumoto & Tomoy: Conidiophores dark brown in dense fascicles, Conidia short and *C. longispora* Peck.: Conidiophores olivaceous brown, Conidia subhyaline, pale olivaceous brown.
- 11.***Cercospora caricis* Oudem.**
Host: *Carex orbicularis* Boott. (*Cyperaceae*).
Location: Neour lake (Ardabil Prov.).
References: Pirnia et al. 2012a, Pirnia 2014.
Note: The species is characterized by having short conidiophores and short acicular to cylindro-obclavate conidia.
- 12. *Cercospora cheiranthi* Sacc.**
Host: *Cheiranthus cheiri* L. (*Brassicaceae*).
Location: Babol (Mazandaran Prov.).
References: Esfandiari 1948, Scharif & Ershad 1966.
Note: Conidiophores moderately in dense fascicles, sometimes constricted at septa. Conidiogenous loci conspicuous, terminal. Conidia cylindro-obclavate, 3-8 septate.
- 13.**Cercospora chenopodii* Fresen.**
Host: *Chenopodium album* (*Chenopodiaceae*).
Locations: Talesh, Anzali, Lahijan, Langroud (Gilan Prov.).
Reference: Bakhshi et al. 2015a.
Note: Conidiophores in dense fascicles, paler towards the tip. Conidia hyaline, obclavate to subsylindrical, tip obtuse, base obconically truncate. Braun (1995) reduced *C. chenopodii* as synonym with *Passalora dubia* based on obclavate conidia and large conidiogenous loci. Groenewald et al. (2013) confirmed *C. chenopodii* as distinct species by results of molecular data.
- 14.***Cercospora cichorii* Davis**
Host: *Cichorium intybus* L. (*Asteraceae*).
Locations: Sisakhat, kohkhedan (Kohgiluyeh & Boyer-Ahmad Prov.).
Reference: Behrooz et al. 2017a.

Note: *C. cichorii* is a common species on *Cichorium* spp. Conidiophores short, longer ones 1-2 mildly geniculate. Long conidia acicular, shorter ones cylindrical.

15. *Cercospora citrullina* Cooke

Hosts: *Citrullus vulgaris* Schrad. ex Eckl. & Zeyh., *Cucurbita maxima* Duchesne (*Cucurbitaceae*).

Locations: Minab (Hormozgan Prov.), Rasht, Sangar, Roudsar, Sowme'eh Sara (Gilan Prov.).

References: Scharif & Ershad 1966, Hesami et al. 2012.

Note: Conidiophores not in dense fascicles, geniculate in the upper part. Conidia acicular.

16.Cercospora convolvulicola* M. Bakhshi, Arzanlou, Babai-Ahari, Crous & U. Braun**

Host: *Convolvulus arvensis* L. (*Convolvulaceae*).

Location: Moghan (Ardabil Prov.).

Reference: Bakhshi et al. 2015a.

Note: *C. convolvulicola* differs from *Cercospora ipomoea* G. Winter. On *Convolvulus arvensis* by having dense fascicles and shorter, subcylindric to obclavate conidia.

17.Cercospora conyzae-canadensis* M. Bakhshi, Arzanlou, Babai-Ahari, Crous & U. Braun**

Host: *Conyza canadensis* (*Asteraceae*).

Locations: Talesh (Gilan Prov.), Tarom (Zanjan Prov.).

Reference: Bakhshi et al. 2015a.

Note: Stromata well developed. Conidiophores dark brown, in loose fascicles. Conidia filiform to obclavate-cylindrical. These characters distinguished the species from others on *Conyza* Less., viz. *C. bidentis* Tharp, *C. erigeronicola* U. Braun & Rogerson and *C. nilghirensis* Govindu & Thirum.

18.Cercospora cruciferarum* Ellis & Everh.**

Host: *Raphanus sativus* L. (*Brassicaceae*).

Location: Rasht (Gilan Prov.).

Reference: Hesami et al. 2012.

Note: Conidiophores pale olivaceous brown, 0-3 geniculate. Conidia acicular, tip acute, base truncate. *C. cruciferarum* is a common species on the plant genera *Brassica* L. and *Raphanus* L.

19.Cercospora cylindracea* M. Bakhshi, Arzanlou, Babai-Ahari, Crous & U. Braun**

Hosts: *Lactuca serriola* L., *Cichorium intybus* L. (*Asteraceae*).

Locations: Moghan (Ardabil Prov.), Khoy (West Azarbaijan Prov.), Tarom (Zanjan Prov.).

Reference: Bakhshi et al. 2015a.

Note: Three species of *Cercospora* including *C. apii*, *C. lactuca sativae* and *C. cichorii*, are known from *Lactuca serriola* and *Cichorium intybus*. *Cercospora cylindracea* differs from the others by its cylindrical to subcylindrical conidia as well as narrower conidiogenous loci 1.5–2.5 µm diam.

20. *Cercospora datiscicola* Esfand.

Host: *Datisca cannabina* L. (*Datisceae*).

Location: Karaj (Alborz Prov.).

Reference: Esfandiari 1951.

Note: Conidiophores short, cylindric, 0-septate. Conidia cylindro-obclavate, tip subobtuse, base obconically truncate.

21.*Cercospora deutziae* Ellis & Everh.**

Host: *Abelia grandiflora* L. (*Caprifoliaceae*).

Location: Nowshahr (Mazandaran Prov.).

References: Bicharanlou et al. 2013a as *C. apii* s. lat., Pirnia 2014.

Note: Conidiophores short, medium dark brown, sinuous in the upper part. Long conidia acicular, shorter ones cylindro-obclavate, tip subobtuse, base truncate.

22. *Cercospora elaeagni* Heald & F.A. Wolf

Host: *Elaeagnus angustifolia* L. (*Elaeagnaceae*).

Location: Marand (East Azarbaijan Prov.).

Reference: Ershad 1995.

Note: Conidiophores short, septate, geniculate in the upper part. Conidia short, acicular, multiseptate, tip acute, base truncate.

23.*Cercospora erythrnicola* Tharp**

Host: *Erythrina crista-galli* L. (*Fabaceae*).

Location: Nowshahr (Mazandaran Prov.).

References: Bicharanlou et al. 2013a as *C. apii* s. lat., Pirnia 2014.

Note: Conidiophores in moderately dense fascicles, sinuous to 1-3 geniculate. Medium brown, paler and narrower towards the tip. Conidia acicular, tip acute to subacute, base truncate.

24.Cercospora flagellaris* Ellis & G. Martin**

Hosts: *Phytolacca americana* L. (*Phytolaccaceae*), *Acer velutinum* (*Aceraceae*), *Amaranthus blitoides*, *A. retroflexus* (*Amaranthaceae*), *Anubias* sp. (*Araceae*) *Calendula officinalis*, *Eclipta prostrata*, *Leucanthemum suberbum*, *Sylibum marianum*, *Tagetes patula*, *Xanthium spinosum*, *X. strumarium* (*Asteraceae*), *Impatiens balsamina* (*Balsaminaceae*), *Lepidium sativum*, *Raphanus sativus* (*Brassicaceae*), *Buxus microphylla* (*Buxaceae*), *Cucurbita maxima*, *C. pepo*, *Citrus lanatus*, *Ecballium elaterium* (*Cucurbitaceae*), *Arachis hypogaea*, *Glycine max*, *Phaseolus vulgaris*, *Vicia faba* (*Fabaceae*), *Pelargonium hortorum* (*Geraniaceae*), *Hydrangea* sp. (*Hydrangeaceae*), *Abutilon theophrasti* Medik., *Gossypium herbaceum* L., **Hibiscus trionum* L. (*Malvaceae*), *Olea europaea* L. (*Oleaceae*), *Populus deltoids* Marshall (*Salicaceae*), *Datura stramonium* L. (*Solanaceae*), *Urtica dioica* L. (*Urticaceae*).

Locations: Rasht, Roudsar, Shaft, Talesh, Sowme'eh Sara, Fuman, Abbasabad, Masal, Chamkhale, Langroud, Astara, Lahijan, Kiashahr (Gilan Prov.), Ramsar (Mazandaran Prov.), Moghan (Ardabil Prov.), Tarom (Zanjan Prov.).

References: Hesami et al. 2011, Bakhshi et al. 2015a.

Note: Conidiophores pale brown, paler towards the tip, septate, 1-3-geniculate, large spore scat at subtruncate tip. Conidia acicular, tip acute, base truncate.

25. *Cercospora fukushiana* (Mat.) Yam.

Host: *Impatiens balsamina* L. (*Balsaminaceae*).

Location: Babolsar (Mazandaran Prov.).

Reference: Hedjaroude 1983.

Note: Conidiophores in loose fascicles, pale brown, paler and narrower towards the tip. Conidia acicular, tip acute to subacute, base truncate.

26. *Cercospora gerberae* Chupp & Viegas

Host: *Gerbera jamesonii* Hook. (*Asteraceae*).

Locations: Salmanshahr, *Mahmoudabad (Mazandaran Prov.).

References: Ershad 1995, Bicharanlou et al. 2013a as *C. apii* s. lat., Pirnia 2014.

Note: Conidiophores pale brown, in dense fascicles, 1-3 geniculate. Conidia acicular, tip acute, base truncate.

27.Cercospora helianthicola* Chupp & Viegas**

Host: *Helianthus tuberosus* L. (*Asteraceae*).

Locations: Rasht, Lahijan (Gilan Prov.).

Reference: Hesami et al. 2012.

Note: Stroma small, composed of a few cells. Fascicles with long and short conidiophores. Conidiogenous loci less conspicuous, 1-2 μ m diam. Conidia acicular, curved, multiseptate.

28.*Cercospora hostae* Katsuki**

Host: *Hosta albomarginata* (Hook.) Ohwi. (*Hostaceae*).

Location: Nowshahr (Mazandaran Prov.).

Reference: Bicharanlou et al. 2013a.

Note: Conidiophores in dense fascicles, some fascicles have only long conidiophores and some have only short conidiophores. Conidia acicular, tip subacute, base truncate.

29. *Cercospora hydrangea* Ellis & Everh.

Hosts: *Hydrangea hortensia* Siebold., **H. macrophylla* (Thunb.) Ser. (*Hydrangeaceae*).

Locations: Babolsar, Tonekabon, Nowshahr (Mazandaran Prov.).

References: Hedjaroude 1983, Bicharanlou et al. 2013a as *C. apii* s. lat., Pirnia 2014.

Note: Conidiophores in dense fascicles, 1-3 geniculate. Conidia acicular, shorter ones obclavate.

30.Cercospora iranica* M. Bakhshi, Arzanlou, Babai-Ahari, Crous & U. Braun**

Hosts: *Vicia faba* L. (*Fabaceae*), *Hydrangea* sp. (*Hydrangeaceae*).

Locations: Astara (Gilan Prov.), Ramsar (Mazandaran Prov.).

Reference: Bakhshi et al. 2015a.

Note: Stromata developed, erumpent on the leaf surface. Conidiophores in dense fascicles, straight to geniculate-sinuuous. Loci thickened and darkened. Longer conidia acicular, shorter ones obclavate. The species differs from *Cercospora zonata* on *Vicia faba* by having narrower acicular conidia.

31. *Cercospora kikuchii* T. Matsumoto & Tomoy.

Host: *Glycine max* (L.) Merr. (*Fabaceae*).

Locations: Rasht, Lahijan (Gilan Prov.).

References: Zad 1979, Majidieh-Ghassemi 1986, Hesami et al. 2011.

Note: Conidiophores in moderately dense fascicles, medium dark brown, paler towards the tip. Conidia acicular, tip subacute to subobtuse, base truncate.

32. *Cercospora lactuca-sativae* Sawada

Synonym: *Cercospora longissima* Cooke & Ellis

Hosts: *Lactuca sativa* L., **L. serriola* L. (*Asteraceae*).

Locations: Gavbandi (Hormozgan Prov.), Gorgan (Golestan Prov.), Sari (Mazandaran Prov.), Shirvan (North Khorasan Prov.).

References: Banihashemi 1985, Pirnia et al. 2010, Pirnia 2014.

Note: Old collections from Iran are published as *Cercospora longissima* Cugini ex Sacc. Crous & Braun (2003) replaced *C. longissima* as synonym with *C. lactucae-sativae*. Conidiophores in small fascicles, each fascicle have short and long conidiophore. Conidia acicular, short, less than 100 µm.

33. *Cercospora malayensis* Stev. & Solh.

Host: *Hibiscus esculentus* L. (*Malvaceae*).

Locations: Bandar-Abbas, Minab (Hormozgan Prov.).

References: Petrak 1956, Scharif & Ershad 1966.

Note: Conidiophores variable in length, short to long. Conidia acicular. Two other species are also reported on *Hibiscus* spp. in Iran. Bicharanlou et al. (2013a) identified *Cercospora althaeina* on *Hibiscus syriacus* from Mazandaran province, which differ from *C. malayensis* by obclavate-cylindrical conidia. Bakhshi et al. (2015a) reported *Cercospora* cf. *flagellaris* on *Hibiscus trionum* from Ardabil province based on results from molecular data.

34. *Cercospora medicaginis* Ellis & Everh.

Host: *Medicago* sp. (*Fabaceae*).

Location: Ahudasht (Mazandaran Prov.).

Reference: Scharif & Ershad 1966.

Note: Conidiophores pale olivaceous brown, uniform in color and width. Longer conidia acicular, shorter conidia obclavate-cylindrical, tip subacute to subobtuse, base truncate.

35.*Cercospora mercurialis* Pass.**

Host: *Mercurialis annua* L. (*Euphorbiaceae*).

Locations: Gorgan, Nahar-Khoran (Golestan Prov.).

References: Pirnia et al. 2010, Heydari et al. 2017.

Note: Conidiophore short, some of them bifurcate in the upper part, narrow towards the tip. Conidia short, obclavate-cylindrical, tip obtuse, base truncate to obconically truncate.

36.Cercospora morina* Pass.**

Host: *Morus alba* L. (*Moraceae*).

Locations: Sowme'eh Sara, Langroud, Shaft (Gilan Prov.).

Reference: Hesami et al. 2012.

Note: Conidiophores in divergent fascicles, medium dark brown, septate, geniculate in the upper part. Conidia hyaline, acicular, tip acute, base truncate.

37.*Cercospora nasturtii* Pass.**

Host: *Nasturtium officinale* R. Br. L. (*Brassicaceae*).

Locations: Cheram, Cheshme belgheis (Kohgiluyeh & Boyer-Ahmad Prov.).

Reference: Behrooz et al. 2017a.

Note: Conidiophores in moderately dense fascicles, mildly geniculate, attenuated towards the tip. Conidia obclavate-cylindrical, tip subobtuse, base truncate. *C. nasturtii* has a wide host range and occurs on hosts of various genera of *Brassicaceae* (Crous & Braun 2003).

38. *Cercospora neriicola* Ershad

Host: *Nerium oleander* L. (*Apocynaceae*).

Locations: Mahmoudabad (Mazandaran Prov.).

Reference: Ershad 2002.

Note: Conidiophores in dense fascicles, multiseptated, rarely branched. Conidia subcylindric to cylindro-obclavate, longer ones curved, pluriseptate, tip subobtuse, base subtruncate.

39.*Cercospora pantoleuca* Sacc.**

Host: *Plantago lanceolata* L. (*Plantaginaceae*).

Locations: Shirvan (North Khorasan Prov.), Gorgan, Qarnabad (Golestan Prov.).

References: Pirnia et al. 2012a, Heydari et al. 2017.

Note: Conidiophores and conidia short. Characters of Iranian specimens resemble to description provided by Braun (1995), but slightly differs in having faintly pigmented conidiophores.

40.*Cercospora peckiana* Chupp**

Hosts: *Rumex* sp., *R. crispus* L., *R. sanguineus* L. (*Polygonaceae*).

Locations: Gorgan, Touskestan (Golestan Prov.), Cheram, Basht (Kohgiluyeh & Boyer-Ahmad Prov.).

References: Pirnia et al. 2012a, Pirnia 2014, Behrooz et al. 2017a.

Note: Conidiophores in dense fascicles, septate, geniculate. Conidia obclavate-cylindrical, longer ones acicular. These characters distinguish the species from others on *Rumex* spp.

41. *Cercospora physalidis* Ellis

Synonym: *Cercospora petuniae* A.S. Mull. & Chupp

Hosts: *Petunia hybrida* Wilm., *Lycopersicon esculentum* Mill. (*Solanaceae*).

Locations: Bandar Anzali, Astaneh Ashrafieh (Gilan Prov.).

References: Ershad 1995 as *C. petuniae*, Pirnia et al. 2010 as *C. apii* s. lat., Pirnia 2014.

Note: *C. physalidis* is a common species on various genera of *Solanaceae* (Crous & Braun 2003). Morphological characteristics of the two specimens examined; agreed with description of *C. physalidis* provided by Chupp (1954).

42.*Cercospora plantaginis* Sacc.**

Hosts: *Plantago lanceolata*, *P. major* (*Plantaginaceae*).

Locations: Basht, Cheram (Kohgiluyeh & Boyer-Ahmad Prov.).

Reference: Behrooz et al. 2017a as *Cercospora apii* s. lat.

Note: Conidiophores in moderately dense fascicles with medium spore scar at subtruncate tip, geniculate, Conidia acicular, tip acute, base truncate. Morphology of specimen examined on *Plantago lanceolata* was identical with the description of *C. plantaginis* in Chupp (1954).

- 43.**Cercospora pseudochenopodii* M. Bakhshi, Arzanlou, Babai-Ahari & Crous
Hosts: *Chenopodium* sp., *C. album*, (*Chenopodiaceae*).
Locations: Tarom (Zanjan Prov.), Khoy (West Azarbaijan Prov.).
Reference: Bakhshi et al. 2015a.
Note: *C. pseudochenopodii* is morphologically similar to *Cercospora chenopodii*, but differs by having slightly long and narrower conidia (Bakhshi et al. 2015a).
- 44.***Cercospora pulcherrimae* Tharp
Host: *Euphorbia heterophylla* L. (*Euphorbiceae*).
Location: Gorgan (Golestan Prov.).
References: Pirnia et al. 2010 as *C. apii* s. lat., Pirnia 2014.
Note: Fascicles not dense, conidiophores olivaceous brown, paler and narrower towards apex. Conidia short, acicular. These characters separate *C. pulcherrimae* from the others on *Euphorbia* L.
- 45.**Cercospora rautensis* C. Massal.
Host: *Securigera varia* (L.) Lassen
Locations: Khoy, Firouragh (West Azarbaijan Prov.).
Reference: Bakhshi 2019.
Note: *Conidiophores* in moderately dense fascicles, straight to mildly geniculate. Conidiogenous cells proliferating sympodially. Conidia subcylindrical to cylindrical, 3–9-septate, tip obtuse, base truncate to obconically truncate.
- 46.***Cercospora richardiicola* G.F. Atk.
Hosts: *Zantheschia aethiopica* (L.) Spreng. (*Araceae*); *Bidens tripartita* (*Asteraceae*).
Location: Sowme'eh Sara (Gilan Prov.).
References: Pirnia et al. 2010 as *C. apii* s. lat., Pirnia 2014, Bakhshi et al. 2015a.
Note: Conidiophores in small fascicles, geniculate to sinuous. Conidial scars conspicuous, terminal and lateral. Conidia acicular, tip acute, base truncate.
47. *Cercospora ricinella* Sacc. & Berl.
Host: *Ricinus communis* L. (*Euphorbiceae*).
Locations: Bandar Abbas, Minab (Hormozgan Prov.).
References: Petrak 1956, Khabiri 1958, Scharif & Ershad 1966.
Note: Conidiophores short (less than 100 µm in length), in dense fascicles, 1-2 times geniculate. Longer conidia acicular, shorter ones obclavate-cylindrical.
- 48.***Cercospora rumicis* Pavgi & U.P. Singh
Hosts: *Rumex* sp., *R. obtusifolius* L., *R. crispus* (*Polygonaceae*).
Locations: Rasht, Roudsar, Shaft, Langroud, Talesh (Gilan Prov.), Basht, Cheram (Kohgiluyeh & Boyer-Ahmad Prov.).
References: Hesami et al. 2011, Bakhshi et al. 2015a, Behrooz et al. 2017a.
Note: Conidiophores in dense fascicles, once geniculate, some fascicles have long and some of them have uniformly short conidiophores. Conidia acicular. *C. rumicis* on *Rumex* spp. differs from *C. peckiana* by having long, pluriseptate conidiophores and long multiseptate acicular conidia.
49. *Cercospora scharifii* Petr.
Host: *Rosa* sp. (*Rosaceae*).
Location: Minab (Hormozgan Prov.).
Reference: Petrak 1956.
Note: Conidiophores not in dense fascicles, pale brown, paler and geniculate towards the tip. Conidia obclavate, tip subacute, base truncate.
- 50.**Cercospora solani* Thum.
Host: *Solanum nigrum* (*Solanaceae*).
Location: Khoy (West Azarbaijan Prov.).
Reference: Bakhshi et al. 2015a.

Note: Conidiophores in moderately dense fascicles, pale brown to brown, geniculate-sinuous. Conidia cylindrical to subacicular, somewhat narrowed towards apex, tip subobtuse, base truncate.

51.*Cercospora sonchi* Chupp**

Hosts: *Taraxacum officinale* Web ex Wigg., **Sonchus arvensis* L. (*Asteraceae*).

Locations: Rasht (Gilan Prov.), Sari (Mazandaran Prov.).

References: Hesami et al. 2012, Bicharanlou et al. 2013a as *C. apii* s. lat., Pirnia 2014.

Note: Conidiophores in moderately dense fascicles, septate, pale to medium brown, paler and narrower towards the tip. Conidia acicular, tip acute, base truncate.

52. *Cercospora sorghi* Ellis & Everh.

Hosts: *Sorghum bicolor* (L.) Moench, *S. halepense* (L.) Pers. (*Poaceae*).

Locations: Karaj (Alborz Prov.), *Astaneh-Ashrafieh (Gilan Prov.), Mazandaran Prov.

References: Mehrian & Rajoo 2004, Mehrian 2006, Pirnia et al. 2010.

Note: Stromata dark brown. Conidiophores in dense fascicles, uniform in length (less than 50 µm), some fascicles have both long and short conidiophores. Shorter conidia obclavate-cylindrical, longer ones acicular, tip subacute, base obconically truncate.

53.Cercospora sorghicola* M. Bakhshi, Arzanlou, Babai-Ahari, Crous & U. Braun**

Host: *Sorghum halepense* (L.) Pers. (*Poaceae*).

Location: Kiashahr (Gilan Prov.).

Reference: Bakhshi et al. 2015a.

Note: *Cercospora sorghicola* is morphologically different from *C. sorghi* by its long, wider and multiseptate conidia.

54. *Cercospora taurica* Tranzsch.

Host: *Heliotropium* sp. (*Boraginaceae*).

Locations: Babolsar, Nowshahr (Mazandaran Prov.).

Reference: Petrak 1939.

Note: Fascicles not dense. Conidiophores light brown, paler and narrower towards the tip. Conidia obclavate-cylindrical, tip obtuse, base truncate to obconically truncate, less than 100 µm in length.

55.Cercospora texensis* Ellis & B.T. Galloway**

Host: *Fraxinus rotundifolia* Miller (*Oleaceae*).

Location: Rasht (Gilan Prov.).

Reference: Hesami et al. 2011.

Note: Conidiophores in moderately dense fascicles, short, septate, straight to geniculate in the upper part, Conidia acicular, multiseptate, tip subacute, base truncate.

56. *Cercospora traversiana* Sacc.

Host: *Trigonella foenum-graceum* L. (*Fabaceae*).

Locations: Bandar-Anzali, Lashtenesha (Gilan Prov.), Tonekabon (Mazandaran Prov.) *Dehdasht, Behbahan (Khuzestan Prov.).

References: Scharif & Ershad 1966 as *Cercospora* sp., Viennot- Bourgin et al. 1970, Ershad 1995, Behrooz et al. 2017a.

Note: Conidiophores short, 0-septate, sinuous to once geniculate. Conidial scars conspicuous. Conidia short, obclavate-cylindrical, tip obtuse to subacute, base truncate.

57. *Cercospora violae* Sacc.

Hosts: *Viola* sp., *V. odorata* L., *V. sintenisii* Becker, *V. sylvestris* Lam. (*Violaceae*).

Locations: Minoudasht, Gorgan, Shirgah, Bandargaz, Kaboudval, *Golestan National Park (Golestan Prov.), Nowshahr (Mazandaran Prov.).

References: Esfandiari 1948, Khabiri 1952, 1958, Scharif & Ershad 1966, Vinnot-Bourgin et al. 1970, Ershad 1995, Bakhshi et al. 2015a, Heydari et al. 2017.

Note: Conidiophores in moderately dense fascicles, Short, 0-2 septate, geniculate in the upper part. Shorter conidia obclavet-cylindrical, longer ones acicular. Heydari et al. (2017)

found the species on *V. odorata* from Golestan province. The previous report of the species on *V. odorata*, date back to 61 years ago from Mazandaran province (Khabiri 1958).

58. *Cercospora xanthicola Heald & F.A. Wolf.

Host: *Xantium strumarium* L. (Asteraceae).

Locations: Rasht, Roudsar (Gilan Prov.).

Reference: Hesami et al. 2011.

Note: Conidiophores olivaceous brown, paler towards apex, once geniculate. Conidia acicular.

59. Cercospora zebrina Pass.

Hosts: *Medicago* sp., *M. sativa* L., **Trifolium resupinatum* L., *Vicia* sp., *Alhagi camelorum* (Fabaceae); *Vitis vinifera* (Vitaceae).

Locations: Ahoudasht (Mazandaran Prov.), Ramhormoz, Ramin, *Behbahan (Khuzestan Prov.) *Yasuj, *Gachsaran, *Cheram (Kohgiluyeh & Boyer-Ahmad Prov.), *Khorramabad (Luristan Prov.) *Talesh (Gilan Prov.) *Tarom (Zanjan Prov.), *Khoy (West Azarbaijan Prov.), *Marand, *Kalibar (East Azarbaijan Prov.).

References: Ebrahimi & Minassian 1973, Bakhshi et al. 2012b, Pirnia 2014, Behrooz et al. 2017a.

Note: Conidiophores pale to medium dark olivaceous brown. Conidia cylindro-obclavate. *C. zebrina* is a common species on *Trifolium* spp. and has been found on *Medicago* spp. *Cercospora zebrina* differ from *C. medicaginis* by short conidiophores and short cylindro-obclavate conidia.

60. *Cercospora zinniae Ellis & G. Martin

Host: *Zinnia elegans* Jacq. (Asteraceae).

Locations: Rasht, Sowme'eh Sara, Talesh (Gilan Prov.).

References: Hesami et al. 2011, Bakhshi et al. 2015a.

Note: Conidiophores in divergent fascicles, medium dark olivaceous brown, paler and narrower towards the tip. Conidia acicular to obclavate, tip subacute, base obconically truncate.

61. Cercospora zonata G. Winter

Synonym: *Cercospora fabae* Fautr.

Host: *Vicia faba* L. (Fabaceae).

Locations: Ahvaz (Khuzestan Prov.), Babol (Mazandaran Prov.), Gorgan (Golestan Prov.), *Basht, Khan Ahmad (Kohgiluyeh & Boyer-Ahmad Prov.).

References: Esfandiari 1948, Scharif & Ershad 1966, Ebrahimi & Minnasion 1973, Hedjaroude 1976 all as *C. fabae*, Pirnia et al. 2010, Pirnia 2014, Behrooz et al. 2017a.

Note: The species is characterized by having moderately short conidiophores with wide obclavate to cylindrical conidia. Collections already examined in Iran published as *C. fabae*.

62. Cercospora spp.

Hosts: **Amaranthus* sp., **A. retroflexus* (Amaranthaceae), **Bidens tripartita*, **Cichorium intybus*, **Coreopsis* sp., *Lactuca sativa* L. (Asteraceae), **Eruca* sp. (Brassicaceae), *Capparis spinosa* L., (Capparidaceae), **Cucurbita maxima* (Cucurbitaceae), *Arachis hypogaea* L., *Glycine max* (L.) Merr., (Fabaceae), *Hydrangea hortensia* Siebold. (Hydrangeaceae), *Gladiolus segetum* Ker-Gawl. (Iridaceae), *Punica granatum* L. (Lythraceae), **Abutilon theophrasti* Medik., *Hibiscus cannabinus* L. (Malvaceae), *Ficus carica* L. (Moraceae), **Olea europaea* L. (Oleaceae), **Plantago major* L. (Plantaginaceae), **Sorghum halepense* (L.) Pers. (Poaceae), *Malus pumila* Mill. (Rosaceae), *Citrus* sp., *C. aurantium* L., *C. sinensis* (L.) Ossenbeck., (Rutaceae).

Locations: Dezful, Ramin, Ahvaz (Khuzestan Prov.), Nowshahr, Tonekabon, Chalous, Amol (Mazandaran Prov.), Esfahan (Esfahan Prov.), Tehran (Tehran Prov.), Lahijan, Roudbar, *Talesh, *Masal, *Rasht, *Sowme'eh Sara (Gilan Prov.), *Tarom (Zanjan Prov.), *Moghan (Ardabil Prov.)

References: Scharif 1953, Ebrahimi 1964, Scharif & Ershad 1966, Scharif & Akhavizadegan 1967, Daftari & Behdad 1968, Vaziri 1973, Ebrahimi & Minassian 1973, Roohibakhsh & Ershad 1997, Afzali et al. 2010, Hesami et al. 2012, Bakhshi et al. 2015a, Heydari et al. 2017.

Note: Numerous morphologically distinguishable *Cercospora* species have been described on various host plant genera belonging to the *Brassicaceae*, excluding the genus *Eruca* Mill. *Cercospora* sp. on *Eruca* is morphologically differs from other *Cercospora* species reported on *Brassicaceae* by following characteristics: conidiophores aggregated in not dense fascicles, conidiogenous loci mostly terminal, conidiophores very short (more than 50 µm is not observed), conidia obclavate to cylindrical (acicular conidium is not observed). Literature review showed that there is not any report of *Cercospora* species on the plant genus *Eruca* in the world.

63.*Cercosporella primulae* Allesch.**

Host: *Primula macrocalyx* Bunge (*Primulaceae*).

Location: Gorgan (Golestan Prov.).

Reference: Pirnia et al. 2012a.

Note: Conidiophores moderately short and hyaline. Conidia small, obclavate-cylindrical. Because of hyaline structures and type of scars, Braun (1995) maintained it in *Cercosporella*.

64.*Cercosporella virgaureae* (Thüm.) Allesch.**

Host: *Conyza bonariensis* (L.) Cronquist (*Asteraceae*).

Location: Lahijan (Gilan Prov.).

Reference: Pirnia et al. 2012a.

Note: Fungal structures hyaline to subhyaline. Conidiophores and conidia moderately long. Conidial scars conspicuous, widespread, has a wide host range on many genera of *Asteraceae*.

65.*Cercosporidium chaetomium* (Cooke) Deighton**

Synonyms: *Cladosporium chaetomium* Cooke

Passalora chaetomium (Cooke) Arx

Host: *Euphorbia marschalliana* Boiss. (*Euphorbiaceae*).

Location: Neour lake (Ardabil Prov.).

Reference: Pirnia et al. 2012c as *Passalora chaetomium*.

Note: Stromata developed. Conidiophores in moderately dense fascicles, geniculate-sinuous, olivaceous brown. Conidia ovoid to cylindrical, 1-3-septate. Deighton (1967) placed the older name *Cladosporium chaetomium* into *Cercosporidium* and then Braun (1995) reduced later name as a synonym of *Passalora chaetomium*. Videira et al. (2017) resurrected the genus *Cercosporidium* based on results of molecular data and morphological characters of *Passalora*-like fungi.

66.*Clypeosphaerella calotropidis* (Ellis & Everh.) Videira & Crous**

Synonyms: *Cercospora calotropidis* Ellis & Everh.

Cercospora patouillardii Sacc.

Passalora calotropidis (Ellis & Everh.) U. Braun

Host: *Calotropis procera* (Aiton) Dryand. (*Apocynaceae*).

Locations: Ahvaz (Khuzestan Prov.), Rask (Sistan & Baluchestan Prov.), Bandar-Abbas, Minab, Kish, Ghesm (Hormozgan Prov.).

References: Petrak 1953, 1956, Viennot-Bourgin et al. 1970, Ershad 1995 all as *C. calotropidis* or *C. patouillardii*, Ershad 2009 as *Passalora calotropidis*.

Note: Conidiophores in dense fascicles. Conidia obclavate, 1-5-septate, sometimes constricted at septa, tip obtuse, base oconically truncate. Braun (2000) transferred *Cercospora calotropidis* to the genus *Passalora*. Based on multigene analysis, strain CBS 129.30 (*Passalora calotropidis*) clusters in *Clypeosphaerella* Videira & Crous, therefore the new genus is proposed (Videira et al. 2017).

- 67. *Fulvia fulva* (Cooke) Cif.**
Synonyms: *Cladosporium fulvum* Cooke
Passalora fulva (Cooke) Braun & Crous
Host: *Lycopersicon esculentum* Mill. (*Solanaceae*).
Locations: Anzali, Rasht (Gilan Prov.), Tonekabon (Mazandaran Prov.).
References: Scharif & Ershad 1966, Ershad 1995 as *Cladosporium fulvum* or *Fulvia fulva*.
Note: Conidiophores caespitose, pale brown to olivaceous brown. Conidiogenous cells proliferating sympodially. Conidia catenate, often in branched chains, pale brown, cylindrical or ellipsoidal, ends rounded, 0-3-septate. The genus *Fulvia* is no longer considered a synonym of *Passalora* as a result of analysis of the type species *F. fulva*, epitypified by Videira et al. (2017).
- 68.***Graminopassalora graminis* (Fuckel) U. Braun, C. Nakash., Videira & Crous**
Synonym: *Passalora graminis* (Fuckel) Hohn
Hosts: *Glyceria fluitans* R.Br., *Agropyron* sp., *Poa annua* L., *Stipa* sp. (*Poaceae*).
Locations: Hezarjarib (Mazandaran Prov.), Sarab Neer, Kharvana, Meshkinshahr (Ardabil Prov.).
References: Esfandiari 1948, Ershad 2009, Pirnia et al. 2012c all as *Passalora graminis*.
Note: Conidiophores fasciculate, sinuous to once geniculate in the upper part. Conidia ellipsoid-obovoid to subcylindrical with rough surface, 0-3-septate. *P. graminis* was not congeneric with the type of *Passalora* (*P. bacilligera*), therefore the new genus *Graminopassalora* U. Braun, C. Nakash., Videira & Crous is introduced to accommodate *Passalora graminis* (Videira et al. 2017).
- 69.***Microcyclosporella mali* J. Frank, Schroers & Crous**
Host: *Malus pumila* Mill. (*Rosaceae*).
Location: Sowme'eh Sara, Lahijan (Gilan Prov.).
Reference: Heidari et al. 2015.
Note: Conidiophores reduced to conidiogenous cells. Conidia solitary, subcylindrical to narrowly obclavate, narrowly fusoid, tip rounded, base obconically truncate. The genus *Microcyclosporella* J. Frank, Schroers & Crous has a *Pseudocercospora*-like morphology, but is not congeneric with the type of *Pseudocercospora*, *P. bakeri* (Videira et al. 2016).
- 70.***Neocercospora ammicola* M. Bakhshi, Arzanlou, Babai-Ahari & Crous**
Host: *Ammi majus* L. (*Apiaceae*).
Location: Khoy (West Azarbaijan Prov.).
Reference: Bakhshi et al. 2015b.
Note: Conidiophores aggregated in moderately dense fascicles, aseptate, reduced to conidiogenous cells, unilocal and multilocal, sympodial. Conidia solitary or in chains, hyaline, cylindrical, subcylindrical to obclavate-cylindrical. The genus *Neocercospora* M. Bakhshi, Arzanlou, Babai-Ahari & Crous established to accommodate a *Cercospora*-like species that is not congeneric with *Cercospora* s. str. (Bakhshi et al. 2015b).
- 71.***Neocercosporidium smilacis* (Thüm.) U. Braun, C. Nakash., Videira & Crous**
Synonyms: *Cercospora smilacis* Thüm
Cercospora smilacina Sacc.
Passalora smilacis (Thüm.) U. Braun
Host: *Smilax aspera* L., *S. excels* L. (*Smilacaceae*).
Locations: Rasht (Gilan Prov.).
References: Petrak & Esfandiari 1941, Esfandiari 1946b, Khabiri 1958 as *C. smilacis* or *C. smilacina*, Ershad 2009 as *Passalora smilacis*
Note: Conidiophores in loose to dense fascicles, septate, geniculate-sinuous. Conidiogenous loci conspicuous, resembling minute circles. Conidia cylindrical-obclavate, pigmented. By these characters, *Cercospora smilacis* was allocated to *Passalora*, (Crous & Braun 2003). *Passalora smilacis* is now reduced to synonym with *Neocercosporidium smilacis* based on

results of molecular data (Videira et al. 2017).

72. *Neoovularia nomuriana* (Sacc.) U. Braun

Synonym: *Ovularia tuberculiformis* v. Höhn.

Host: *Astragalus odoratus* Lam. (*Fabaceae*).

Location: Kandevaran (Mazandaran Prov.).

Reference: Petrak & Esfandiari 1941, Esfandiari 1946b.

Note: Conidiophores in dense, sporodochial conidiomata, subcylindric, slightly geniculate-sinuous. Conidia solitary, subglobose, broadly obovoid, aseptate, ends rounded.

73. *Neoovularia ovata* (Fuckel) U. Braun

Hosts: *Salvia* sp., *S. hypoleuca* Benth., *S. limbata* C.A. Mey., *S. nemorosa* L. (*Lamiaceae*).

Locations: Karaj (Alborz Prov.), Damavand (Tehran Prov.), Ghouchan (Razavi Khorasan Prov.).

References: Petrak 1953 as *Ovularia iranica* Petr., Ershad 1995, Hedjaroude & Abbasi 2000.

Note: Conidiophores in dense fascicles, grayish-white to very pale brown, conidiogenous loci colorless, protuberant, convex, papile-like, aggregated in the upper part of conidiophores. Conidia solitary, 0-septate, pyriform to ellipsoid-obovoid.

74.*Neopseudocercospora capsellae*** (Ellis & Everh.) Videira & Crous

Synonym: *Pseudocercospora capsellae* (Ellis & Everh.) Deighton

Hosts: *Capsella bursa-pastoris* L., *Sinapis arvensis* L. (*Brassicaceae*).

Locations: Basht, Khan Ahmad (Kohgiluyeh & Boyer-Ahmad Prov.).

Reference: Behrooz et al. 2015b.

Note: Fungal structures colorless. Conidiophores reduced to conidiogenous cells. Conidiogenous loci inconspicuous, unthickened, neither darkened nor refractive. Conidia subcylindrical to obclavate, tip obtuse to subacute, base truncate. The genus *Neopseudocercospora* Videira & Crous established to accommodate two species of *Pseudocercospora* that were not congeneric with the type species *P. bakeri* Syd. & P. Syd. *Pseudocercospora capsellae* is reduced to synonym with *Neopseudocercospora capsellae* (Videira et al. 2016).

75. *Neoramularia esfandiarii* (Petr.) U. Braun

Synonym: *Ovularia esfandiarii* Petr.

Host: *Scrophularia* sp. (*Scrophulariaceae*).

Location: Kandevaran (Mazandaran Prov.).

References: Petrak & Esfandiari 1941, Esfandiari 1946b as *Ovularia esfandiarii* Petr.

Note: Conidiophores in dense fascicles, subcylindrical to geniculate-sinuous. Conidia mostly solitary, occasionally catenate, ellipsoid-ovoid, 0-septate, ends rounded to truncate.

76.*Neoramularia rubi*** (Bubak) U. Braun

Host: *Rubus caesius* L. (*Rosaceae*).

Location: Gorgan (Golestan Prov.).

Reference: Ershad 2000 as *Ramularia rubicola* (nom. illeg.).

Note: Conidiophores in dense fascicles. Conidial scars inconspicuous. Conidia solitary, ellipsoid-ovoid, subcylindric, 0-1-septate, Braun introduced *R. rubicola* in 1988 and then reduced it as synonym with *Neoramularia rubi* (Bubak) U. Braun (1993). Therefore *R. rubicola* Ershad is an illegitimate name.

77.*Nothopassalora personata*** (Berk. & M.A. Curtis) U. Braun, C. Nakash., Videira & Crous

Synonyms: *Cercospora personata* (Berk. & M.A. Curt.) Ellis & Everh.

Cercosporidium personatum (Berk. & M.A. Curt.) Deighton

Passalora personata (Berk. & M.A. Curt.) S.A. Khan & M. Kamal

Host: *Arachis hypogaea* L. (*Fabaceae*).

Locations: Rasht, Lashtenesha, Astaneh Ashrafieh (Gilan Prov.), Aliabad (Golestan Prov.),

*Tehran (Tehran Prov.).

References: Scharif & Ershad 1966 as *Cercospora* sp., Viennot-Bourgin et al. 1970, Viennot-Bourgin 1976 as *Cercosporidium personatum* or *Cercospora personata*, Behrooz et al. 2015b as *Passalora personata*.

Note: Stromata well developed. Conidiophores in dense fascicles, 1-3-geniculate in the upper part. conidiogenous loci darkened, thickened and refractive. Conidia pale brown, cylindrical to long-obclavate, 1-8-septate. Two specimens examined by Videira et al. (2017) closely related with *Asperisporium*, despite their morphological differences, so the new genus *Nothopassalora* U. Braun, C. Nakash., Videira & Crous introduced to accommodate *Passalora*-like fungus on Peanut.

78.*Paracercosporidium microsorum* (Sacc.) U. Braun, C. Nakash., Videira & Crous**

Synonyms: *Cercospora microsora* Sacc.

Passalora microsora (Sacc.) U. Braun

Hosts: *Tilia begonifolia* Stev., *Tilia* sp. (*Tiliaceae*).

Locations: Nowshahr (Mazandaran Prov.), Asalem Forest, Safrabasteh (Gilan Prov.).

References: Petrak 1941, Esfandiari 1946b, Khabiri 1958, Scharif & Ershad 1966, Ershad 1995 as *Cercospora microsora*, Ershad 2009 as *Passalora microsora*.

Note: Conidiophores in loose to moderately dense fascicles, once geniculate due to sympodial proliferation. Conidiogenous loci conspicuous, located at the shoulders and apex. Conidia pale olivaceous brown, cylindrical to obclavate, tip rounded, base obconically truncate, 2-4-septate. *Cercospora*-like fungus on *Tilia* spp. placed into *Passalora* due to obclavate conidia, but cluster apart from the type species *P. bacilligera* (Mont. & Fr.) Mont. & Fr., therefore the new genus *Paracercosporidium* U. Braun, C. Nakash., Videira & Crous is introduced and *Passalora microsora* is reduced to synonym with *Paracercosporidium microsorum* (Videira et al. 2017).

79.*Passalora* cf. *bacilligera***

Host: *Alnus glutinosa* (L.) Gaertn. (*Betulaceae*).

Location: Alang Dareh (Golestan Prov.).

Reference: Heydari et al. 2017.

Note: Conidiophores in dense fascicles, medium brown, geniculate at the apex. Conidia obclavate, olivaceous brown, basal cell wider than apical cell. Conidiophores and conidial characters identical to *P. bacilligera* redescribed by Videira et al. (2017), but conidia are narrower in our specimen.

80. *Passalora bolleana* (Thum.) U. Braun

Synonym: *Cercospora bolleana* (Thum.) Speg.

Host: *Ficus carica* L. (*Moraceae*).

Locations: Ghasreshirin (Kermanshah Prov.), Ahvaz (Khuzestan Prov.), Shahsavari (Mazandaran Prov.), Ghasrghand (Sistan & Baluchestan Prov.) *Gachsaran (Kohgiluyeh & Boyer-Ahmad Prov.)

References: Petrak 1956, Scharif & Ershad 1966, Viennot-Bourgin et al. 1970, Ershad 1995 all as *C. bolleana*, Behrooz et al. 2015b.

Note: Conidiophores short, 0-septate, mostly reduced to conidiogenous cells. Conidia obclavate-subcylindrical, mostly 1-septate, in some specimens 2-3-septate.

81.*Passalora bondartsevii* Braun & Melnik**

Host: *Medicago* sp. (*Fabaceae*).

Location: Babolsar (Mazandaran Prov.).

Reference: Pirnia et al. 2012a.

Note: Conidiophores in small to dense fascicles, geniculate-sinuous. Conidial scars conspicuous, at rounded to subtruncate tip. Conidia ellipsoid-obovoid (In type specimen conidia ellipsoid-obovoid to obclavate-subcylindrical), 0-3-septate, tip rounded, base truncate or obconically truncate.

82.*Passalora brandenburgeri* U. Braun & Crous**

Host: *Salix alba* L. (*Salicaceae*).

- Location:** Mahmoudabad (Mazandaran Prov.).
Reference: Bicharanlou et al. 2013b.
Note: Conidiophores pale brown, short (Less than 50 µm). Conidiogenous cells geniculate, proliferating sympodially. Conidia obclavate, shortest ones subcylindrical.
- 83. *Passalora calystegiae*** (Speg.) U. Braun
Synonym: *Cercospora calystegiae* Speg.
Host: *Calystegia* sp. (*Convolvulaceae*).
Location: Moghan (Ardabil Prov.).
Reference: Hedjaroude 1983 as *C. calystegiae*.
Note: Stromata developed. Conidiophores in dense fascicles, olivaceous brown, paler and narrower towards apex. Conidia obclavate-cylindrical, pale olivaceous, tip obtuse, base obconically truncate.
- 84. *Passalora carlinae*** (Sacc.) U. Braun
Synonym: *Cercospora carlinae* Sacc.
Host: *Carlina* sp. (*Asteraceae*).
Location: Kojur (Mazandaran Prov.).
Reference: Petrak 1941 as *Cercospora carlinae*.
Note: Conidiophores in moderately dense fascicles, medium dark brown. Small conidial scar at rounded tip. Conidia cylindro-obclavate, tip obtuse, base obconically truncate.
- 85. *Passalora circumscissa*** (Sacc.) U. Braun
Synonym: *Cercospora circumscissa* Sacc.
Hosts: *Amygdalus communis* L., *Cerasus avium* (L.) Moench, *C. vulgaris* Mill., *Prunus domestica* L. (*Rosaceae*).
Locations: Nowshahr, Amol, *Behshahr (Mazandaran Prov.), Aliabad, *Daland (Golestan Prov.), Rasht, *Sowme'eh Sara (Gilan Prov.).
References: Petrak & Esfandiari 1941, Esfandiari 1946a, Khabiri 1958, Viennot-Bourgin 1958, Scharif & Ershad 1966 all as *C. circumscissa*, Hesami et al. 2011, Pirnia et al. 2012c.
Note: On *Cerasus vulgaris*: Conidiophores short, 1-septate conidia frequent. On *Prunus domestica*: Conidiophores long, 2-6-septate conidia frequent.
- 86. *Passalora condensata*** (Ellis & Kellerm.) U. Braun
Synonyms: *Cercospora condensata* Ellis & Kellerm.
Prathigada condensata (Ellis & Kellerm.) U. Braun
Host: *Gleditsia caspica* (*Fabaceae*).
Locations: Asalem Forest (Gilan Prov.).
Reference: Khodaparast et al. 2012b as *Prathigada condensata*.
Note: Chupp (1954) re-described *Cercospora condensata* in his monograph, then Braun (1999) replaced the name in the genus *Prathigada* Subram. According to new concept of the genus *Passalora*, *Prathigada condensata* reduced to synonym with *Passalora* (Crous & Braun 2003).
- 87. *Passalora cousiniae*** Petr.
Host: *Cousinia* sp., *C. nekarmanica* Rech. (*Asteraceae*).
Locations: Arak (Markazi Prov.), Bashm (Mazandaran Prov.), Hezarmasjed (Razavi Khorasan Prov.), Shahvar (Khuzestan Prov.), Shiraz (Fars Prov.).
References: Petrak 1949, Esfandiari 1951, Jorstad 1960, Ershad 1995, Pirnia et al. 2012c.
Note: Conidiophores pale brown, in dense fascicles with one large spore scar on subtruncate tip. Conidia 1-septate, apical cell wider than basal cell.
- 88. *Passalora cucurbiticola*** (Henn.) Braun & Crous
Host: *Cucurbita* sp. (*Cucurbitaceae*).
Location: Gachsaran (Kohgiluyeh & Boyer-Ahmad Prov.).
Reference: Behrooz et al. 2015b.

Note: Conidiophores short, in moderately dense fascicles. Conidiogenous loci conspicuous, Conidia scar at rounded to truncate tip. Conidia fusiform-cylindrical, sub-hyaline to pale-olivaceous, 1-3-septate, tip obtuse, base rounded to subtruncate.

89. *Passalora dubia* (Riess) Braun

Synonym: *Cercospora dubia* (Riess) Wint.

Hosts: *Chenopodium brumale* L., *C. album* L. (*Chenopodiaceae*).

Locations: Alamdeh, *Ramsar (Mazandaran Prov.).

References: Hedjaroude 1976 as *C. dubia*, Pirnia et al. 2012c.

Note: Conidiophores in moderately dense fascicles, septate. Conidia cylindrical, 1-5-septate, tip obtuse, base obconically truncate.

90. *Passalora fraxini* (DC.: Fr.) Arx

Host: *Fraxinus excelsior* L. (*Oleaceae*).

Location: Bandar-Torkaman (Golestan Prov.).

Reference: Kalte et al. 2008.

Note: Stromata developed. Conidiophores in dense fascicles, pale brown. Conidia obclavate-cylindrical, fusiform, 1-3-septate, tip subobtuse, base obconically truncate.

91. *Passalora fraxinicola* (Ershad) Braun & Crous

Synonym: *Cercospora fraxinicola* Ershad

Host: *Fraxinus rotundifolia* Mill. (*Oleaceae*).

Locations: Kelardasht (Mazandaran Prov.).

Reference: Ershad 2000 as *Cercospora fraxinicola*.

Note: Conidiophores aggregated in moderately dense fascicles, septate, geniculate. Conidia cylindro-obclavate, 1-3-septate, tip rounded, base obconically truncate.

92. *Passalora heterospora* (v. Höhn.) v. Höhn.

Synonym: *Fusicladium heterosporum* v. Höhn.

Host: *Epilobium hirsutum* L. (*Onagraceae*).

Location: Jajrud (Tehran Prov.).

Reference: Esfandiari 1948 as *Fusicladium heterosporum*.

Note: Morphology of conidia and structure of loci resembles to those belonging to *Passalora*, therefore *F. heterosporum* reduced to synonym with *P. heterospora* (Crous & Braun 2003).

93. *Passalora phaeopappi* Petr.

Hosts: *Phaeopappus aucheri* (DC.) Boiss; *P. kotschyi* (Boiss. & Heldr) Boiss. (*Asteraceae*).

Location: Karaj (Alborz Prov.).

References: Petrak 1939, Esfandiari 1948, Golato 1960.

Note: The species is morphologically close to *Passalora cousiniae*, but differs in having shorter conidiophores. Furthermore, length and width of conidia is lower than *P. cousiniae*.

94. *Passalora punctum* (Delacr.) Petzoldt

Synonyms: *Cercospora petroselini* Sacc.

Passalora kirchneri (Hegy) Petr.

Hosts: on *Anethum graveolens* L. and *Foeniculum vulgare* Mill. (*Apiaceae*) as *Cercospora petroselini*; on *Petroselinum sativum* Hoffm. (*Apiaceae*) as *Passalora kirchneri*.

Locations: Tehran (Tehran Prov.), Ahvaz (Khuzestan Prov.) Babol, Shahsavari, Tonekabon (Mazandaran Prov.), Gilan Prov.

References: Esfandiari & Petrak 1950, Esfandiari 1951, Petrak 1956, Scharif & Ershad 1966, Ebrahimi & Minassian 1973, Ershad 1995.

Note: Conidiophores in dense fascicles, sinuous to geniculate, Small conidia fusiform, cylindrical, long ones obclavate, pale olivaceous green. *Passalora kirchneri* is reduced to synonym with *Passalora punctum* (Crous & Braun 2003).

95. *Passalora rhamni* (Fuckel) U. Braun

Synonym: *Cercospora rhamni* Fuckel

Host: *Rhamnus frangula* L. (*Rhamnaceae*).

- Location:** Lahijan (Gilan Prov.).
Reference: Viennot-Bourgin 1958 as *Cercospora rhamni*.
Note: Conidiophores in loose to moderately dense fascicles, medium dark brown, geniculate-sinuuous, Conidia obclavate, subhyaline to pale olivaceous, tip obtuse, base obconically truncate.
- 96. *Passalora rosae*** (Fuckel) v. Höhn.
Synonym: *Cercospora rosae* Fuckel
Hosts: *Rosa* sp., **R. persica* J.F. Gmel. (*Rosaceae*).
Locations: Bandargaz, *Galougah (Golestan Prov.).
References: Esfandiari 1948 as *C. rosae*, Pirnia et al. 2012c.
Note: Conidiophores in dense fascicles, septate. Conidia obclavate-cylindrical, 1-3-septate, but conidia with one septum are frequent.
- 97. *Passalora scandicearum*** (Magnus) Braun
Synonym: *Cercospora scandicearum* Magnus
Host: *Anthriscus sylvestris* Hoffm. (*Apiaceae*)
Location: Damavand (Tehran Prov.).
Reference: Viennot-Bourgin et al. 1970.
Note: Conidiophores aggregated in divergent fascicles, pale brown, paler and narrower towards the tip. Conidia cylindro-obclavate, tip obtuse, base subtruncate to obconically truncate.
- 98. *Passalora scariolae*** Syd.
Host: *Scariola orientalis* (Boiss) Sojak (*Asteraceae*).
Location: Karaj (Alborz Prov.).
References: Petrak 1949a, Esfandiari 1951.
Note: Conidiophores short, in dense fascicles, dark olivaceous brown, geniculate. Conidia short, obclavate, broadly ellipsoid, subcylindrical.
- 99.***Passalora ziziphi*** (S.S. Prasad & R.P. Verma) U. Braun & Crous
Host: *Zizyphus spina-christi* (L.) Willd. (*Rhamnaceae*).
Location: Kahir (Sistan & Balouchestan Prov.).
Reference: Pirnia et al. 2012c.
Note: Conidiophores synnematos, multiseptate, sinuous to geniculate in the upper part. Conidia catenate, fusiform, cylindrical, rarely obclavate, 1-4-septate.
- 100.***Pseudocercospora abeliae*** (Katsuki) Nishij.
Host: *Abelia grandiflora* (André) Rehder. (*Caprifoliaceae*).
Location: Nowshahr (Mazandaran Prov.).
Reference: Bicharanlou et al. 2013c.
Note: Conidiophores short, reduced to conidiogenous cell. Conidia cylindro-obclavate, 2-7-septate, tip subacute, base truncate.
- 101. *Pseudocercospora abelmoschi*** (Ellis & Everh.) Deighton
Synonym: *Cercospora abelmoschi* Ellis & Everh.
Cercospora hibisci Tracy & Earle
Host: *Hibiscus cannabinus* L. (*Malvaceae*).
Locations: Babol (Mazandaran Prov.), Bandar-Anzali (Gilan Prov.).
References: Esfandiari 1947, 1948, Scharif & Ershad 1966, Scharif & Akhavizadegan 1967 as *Cercospora* sp., Viennot-Bourgin et al. 1970 as *C. abelmoschi* or *C. hibisci* Pirnia et al. 2012b.
Note: Conidiophores geniculate-sinuuous. Conidiogenous loci inconspicuous. Conidia acicular, tip acute, base obconically truncate.
- 102. *Pseudocercospora atromarginalis*** (Atk.) Deighton
Synonym: *Cercospora atromarginalis* Atk.
Host: *Solanum nigrum* L. (*Solanaceae*).

- Locations:** Bandar-Anzali, Rasht, Lashtenesha, *Lahijan (Gilan Prov.), Moghan (Ardabil Prov.), Ramsar (Mazandaran Prov.).
- References:** Viennot-Bourgin et al. 1970, Ershad 1995 as *Cercospora atromarginalis*, Pirnia et al. 2012b, Bakhshi et al. 2014.
- Note:** Conidiophores in dense fascicles, arising from stromata. Conidia obclavate to subcylindrical, tip obtuse to subacute, base obconically truncate.
- 103. *Pseudocercospora cavarae*** (Sacc. & D. Sacc.) Deighton
Synonym: *Cercospora cavarae* Sacc. & D. Sacc.
Host: *Glycerrhiza glabra* L. (*Fabaceae*).
Location: Roudbar (Gilan Prov.).
Reference: Hedjaroude 1983 as *Cercospora cavarae*.
Note: Conidiophores in dense fascicles, straight, not geniculate. Conidia subhyaline to pale olivaceous, cylindrical, 1-6-septate, tip obtuse, base obconically truncate.
- 104. *Pseudocercospora cruenta*** (Sacc.) Deighton
Synonym: *Cercospora cruenta* Sacc.
Host: *Vigna sinensis* (L.) Endl. (*Fabaceae*).
Locations: Dezfoul (Khuzestan Prov.), *Astaneh-Ashrafieh, *Sowme'eh Sara (Gilan Prov.).
References: Kaiser et al. 1968 as *Cercospora* sp., Vaziri 1973 as *Cercospora cruenta*, Pirnia et al. 2012b.
Note: Conidiophores in loose to dense fascicles. Long conidia acicular, small conidia cylindro-obclavate, tip rounded to subacute, base obconically truncate.
- 105.***Pseudocercospora cydoniae*** (Ellis & Everh.) Y.L. Guo & X.J. Liu
Host: *Chaenomeles japonica* (Thunb.) Lindl. (*Rosaceae*).
Location: Nowshahr (Mazandaran Prov.).
Reference: Bicharanlou et al. 2013a.
Note: Conidiophores in moderately dense fascicles, very short, up to 20 µm in length, reduced to conidiogenous cells. Conidia cylindrical, obclavate-cylindric, tip obtuse, base obconically truncate.
- 106.***Pseudocercospora danaicola*** (Vienn. -Bourg.) Pirnia & Zare
Host: *Danae racemosa* Moench (*Asparagaceae*).
Locations: Khan-bebin, Shirabad Forest (Golestan Prov.), Nowshahr (Mazandaran Prov.)
Reference: Viennot-Bourgin et al. 1970 as *Cercosporina danaecola*, Pirnia et al. 2012a.
Note: *Cercosporina danaecola* was originally published based on material from Iran (Viennot-Bourgin et al. 1970). Because of inconspicuous, unthickened, and not darkened conidiogenous loci and hila, the fungus is placed into *Pseudocercospora* (Pirnia et al. 2012a). Conidiophores sinuous to once geniculate, arising from globular stromata. Conidia acicular, tip acute, base truncate.
- 107.***Pseudocercospora daturina*** (J.M. Yen) Deighton
Host: *Datura stramonium* (*Solanaceae*).
Locations: Roudsar (Gilan Prov.).
Reference: Hesami et al. 2011.
Note: Conidiophores in moderately dense fascicles, medium dark brown, septate. Conidia obclavate, 3-12-septate, tip obtuse to subacute, base obconically truncate.
- 108.***Pseudocercospora eucalyptorum*** Crous, M. J. Wingf.
Host: *Eucalyptus* sp. (*Myrtaceae*).
Location: Shanderman (Gilan Prov.).
Reference: Khodaparast et al. 2012a.
Note: Conidiophores subhyaline to pale olivaceous, proliferating sympodially, Conidia cylindrical, subhyaline to pale olivaceous, tip rounded, base truncate.
- 109. *Pseudocercospora fici*** (Heald & Wolf) Liu & Guo
Synonym: *Cercospora fici* Heald & Wolf.

- Host:** *Ficus carica* L. (*Moraceae*).
Locations: Kish (Hormozgan Prov.), Mazandaran Prov.
Reference: Scharif & Ershad 1966 as *Cercospora fici*.
Note: Conidiophores in dense fascicles, pale olivaceous brown, aseptate, not geniculate. Conidial scars inconspicuous. Conidia obclavate, cylindro-obclavate, tip subacute, base obconically truncate.
- 110. *Pseudocercospora fuligena*** (Roldan) Deighton
Hosts: *Physalis minima*, *Solanum nigrum* L. (*Solanaceae*).
Location: Gorgan (Golestan Prov.).
Reference: Aghajani & Ahmadi 2010.
Note: Conidiophores in divergent fascicles. Conidia subhyaline to pale brown, obclavate to cylindro-obclavate, 3-14-septate, tip obtuse base rounded to obconically truncate.
- 111. *Pseudocercospora gomphrenae*** Sawada ex Goh & Hsieh
Synonym: *Cercospora gomphrenae* Sawada
Host: *Gomphrena globosa* L. (*Amaranthaceae*).
Location: Babolsar (Mazandaran Prov.).
Reference: Hedjaroude 1983 as *Cercospora gomphrenae*.
Note: Conidiophores in divergent fascicles, in mass dark, paler and narrower towards the tip. Conidia acicular, tip acute, base truncate.
- 112.***Pseudocercospora griseola*** (Sacc.) Crous & U. Braun
Synonyms: *Isariopsis griseola* Sacc.
Phaeoisariopsis griseola (Sacc.) Ferr.
Host: *Phaseolus vulgaris* (L.) Endl. (*Fabaceae*).
Locations: Mazandaran Prov., Sowme'eh Sara (Gilan Prov.).
References: Eskandari 1964, Scharif & Ershad 1966, Kaiser et al. 1968 as *Phaeoisariopsis griseola* or *Isariopsis griseola*, Pirnia et al. 2012b.
Note: According to Crous et al. (2006), type specimen of *Pseudocercospora* (*P. vitis*) clustered with type of *Phaeoisariopsis* (*P. griseola*) and *Stigmia* (*S. platani*), therefore they proposed to conserve the generic name *Pseudocercospora* against *Phaeoisariopsis* and *Stigmia*. *Pseudocercospora griseola* is characterized by having inconspicuous, circle-like and slightly darkened conidiogenous loci as well as short obclavate to fusiform conidia.
- 113.***Pseudocercospora heteromalla*** (Syd.) Deighton
Host: *Rubus* sp. (*Rosaceae*).
Location: Shastkola Forest (Golestan Prov.).
Reference: Pirnia et al. 2012b.
Note: Stromata composed of a few brown cells. Conidiophores pale to medium brown, multiseptated, sinuous to once geniculate in the upper part. Conidia pale olivaceous, cylindric to cylindro-obclavate, tip obtuse, base truncate to obconically truncate. The species is distinguished from *Pseudocercospora rubi* by having moderately long, septate conidiophores.
- 114. *Pseudocercospora jujubae*** (S. Chowdhury) N. Khan & Shamsi
Synonym: *Cercospora jujubae* Chowdhury
Host: *Ziziphus spina-christi* (L.) Willd. (*Rhamnaceae*).
Location: Kahir (Sistan & Baluchestan Prov.).
Reference: Ershad & Khosravi 1996 as *Cercospora jujubae*.
Note: Conidiophores nonfasciculate, septate, Conidia broadly obclavate to fusiform, 1-4-septate.
- 115. *Pseudocercospora kaki*** Goh & Hsieh
Synonym: *Cercospora kaki* Ellis & Everh.
Hosts: *Diospyros kaki* L., *D. lotus* L. (*Ebenaceae*).

Locations: Rasht, *Sowme'eh Sara, *Siben (Gilan Prov.), Nowshahr, *Sari, *Behshahr, *Royan (Mazandaran Prov.), *Daland, *Alangdareh, *Naharkhoran, *Kordkuy (Golestan Prov.).

References: Petrak & Esfandiari 1941, Esfandiari 1946b, Khabiri 1958, Golato 1960, Scharif & Ershad 1966, Viennot-Bourgin et al. 1970 all as *Cercospora kaki*, Pirnia et al. 2012b.

Note: Conidiophores reduced to conidiogenous cells, not geniculate, sinuous. Conidia acicular to narrowly obclavate, tip obtuse to subacute, base obconically truncate.

116.Pseudocercospora mazandaranensis*** M. Bakhshi, Arzanlou, Babai-Ahari & Crous

Host: *Nerium oleander* (Apocynaceae).

Location: Tonekabon (Mazandaran Prov.).

Reference: Bakhshi et al. 2014.

Note: Stromata well developed, conidiophores in dense fascicles. Conidiogenous cells proliferating sympodially. Conidia subcylindrical to obclavate, tip subobtuse.

117. *Pseudocercospora mississippiensis* (Tracy & Earle) R.F. Castaneda & U. Braun

Synonym: *Cercospora mississippiensis* Tracy & Earle

Host: *Smilax* sp. (Smilacaceae).

Location: Sowme'eh Sara (Gilan Prov.).

Reference: Hedjaroude 1976 as *Cercospora mississippiensis*.

Note: Conidiophores olivaceous brown, septate, geniculate. Conidia pale olivaceous brown, obclavate, tip subacute, base obconically truncate.

118.Pseudocercospora mori*** (Hara) Deighton

Hosts: *Morus alba* L., **M. nigra* L. (Moraceae).

Locations: Gilan Prov., Nowshahr (Mazandaran Prov.).

References: Hesami et al. 2012, Bicharanlou et al. 2013c.

Note: Conidiophores pale brown, septate, 1-2 times geniculate, Conidia pale olivaceous brown, obclavate, tapered towards the tip, smaller ones cylindrical, 3-8-septate.

119.Pseudocercospora musae*** (Zimm.) Deighton

Synonym: *Cercospora musae* Zimm

Host: *Musa sapientum* (Musaceae).

Locations: Iranshahr, Chabahar (Sistan & Baluchestan Prov.).

Reference: Amani et al. 2010 as *Cercospora musae* Zimm.

Note: Conidiophores pale olivaceous to olivaceous brown, paler and narrower towards the tip. Conidia obclavate-cylindrical, tip obtuse to subacute, base truncate.

120.*Pseudocercospora neriella*** (Sacc.) Deighton

Host: *Nerium oleander* L. (Apocynaceae).

Location: Freidounkenar (Mazandaran Prov.).

Reference: Pirnia et al. 2012a.

Note: Stromata well developed, globular. Conidiophores very short, aggregated in dense fascicles. Conidia obclavate-subcylindrical, subhyaline to pale olivaceous brown, 1-4-septate, tip subobtuse, base subtruncate to obconically truncate. Based on specimen collected in 1999 (IRAN 11602 F), Ershad (2002) described *Cercospora neriicola*. Pirnia et al. (2012a) examined another specimen collected by Ershad in 2003 (IRAN 11659 F, deposited as *Cercospora neriicola*). Morphological characters of later specimen were very close to *Pseudocercospora neriella* as mentioned above.

121. **Pseudocercospora norchiensis* Crous

Host: *Rubus* sp. (Rosaceae).

Locations: Talesh, Rezvanshahr (Gilan Prov.).

Reference: Bakhshi et al. 2014.

Note: Conidiophores in moderately dense fascicles, septate, loci neither thickened nor darkened. Conidia pale brown, subcylindrical-obclavate, tip subobtuse to subacute, base obconically truncate.

- 122.***Pseudocercospora paraguayensis* (Tak. Kobay.) Crous
Host: *Eucalyptus camaldulensis* Dehnh. (*Myrtaceae*).
Location: Shastkola Forest (Golestan Prov.).
Reference: Pirnia et al. 2012a.
Note: Stromata well developed. Conidiophores in dense fascicles, cylindrical, straight or curved. Conidiogenous loci and hila inconspicuous, unthickened, not darkened. Conidia subcylindrical, mildly or abruptly curved, very pale olivaceous, tip subobtuse to subacute, base truncate.
123. *Pseudocercospora phyllitidis* (H.H. Hume) U. Braun & Crous
Host: *Petunia var.* Hort. (*Solanaceae*).
Location: Bandar-Anzali (Gilan Prov.).
Reference: Ershad 1995 as *Cercospora petunia* (Saito) Muller & Chupp
Note: Stromata developed, globular. Conidiophores in dense fascicles, pale olivaceous brown, slightly sinuous. Conidia subhyaline, narrowly obclavate, tip subacute, base obconically truncate.
- 124.**Pseudocercospora pistaciae* (Chupp) Crous & U. Braun
Synonym: *Cercospora pistaciae* Chupp
Hosts: *Pistacia vera* L., *P. mutica* Fisch. & Mey. (*Anacardiaceae*).
Locations: Ghazvin (Ghazvin Prov.), Darab (Fars Prov.).
Reference: Banihashemi et al. 2016 as *Pseudocercospora pistacina*.
Note: Conidiophores in moderately dense fascicles, reduced to conidiogenous cells, not geniculate. Conidia narrowly obclavate, subhyaline, indistinctly septate, tip obtuse, base obconically truncate. This taxon is wrongly reported as *P. pistacina*.
- 125.***Pseudocercospora platanigena* Videira & Crous
Synonyms: *Stigmella platani* Fuckel
Stigmia platani (Fuckel) Sacc.
Host: *Platanus orientalis* L. (*Platanaceae*).
Locations: Caspian Sea Area (Gilan, Golestan & Mazandaran Provinces), Mashhad (Razavi Khorasan Prov.), *Astaneh-Ashrafieh (Gilan Prov. Coll.: M. Pirnia).
References: Esfandiari 1946, Steyaert 1953, Petrak 1956, Khabiri 1958, Eskandari 1964, Scharif & Ershad 1966. Esfandiari & Petrak 1950, Esfandiari 1951 all as *Stigmia platani*.
Note: Conidiogenous cell monoblastic, percurrent. Conidia ellipsoid or cylindrical, dark brown, 1-3-septate, smooth to verrucose, tip rounded, base truncate. The genus *Pseudocercospora* conserved against *Stigmia* and later name is a synonym of *Pseudocercospora* (Braun & Crous 2006).
126. *Pseudocercospora punicae* (Henn.) Deighton
Synonym: *Cercospora punicae* Henn.
Host: *Punica granatum* L. (*Lythraceae*).
Locations: Shahsavari, Nowshahr, Salmanshahr, *Noor (Mazandaran Prov.), Bandar-Anzali, *Talesh, *Shanderman, *Sowme'eh Sara (Gilan Prov.), *Kordkuy (Golestan Prov.).
References: Petrak & Esfandiari 1941, Esfandiari 1946b, Golato 1960, Ershad 1995 all as *Cercospora punicae*, Pirnia et al. 2012b, Bakhshi et al. 2014.
Note: Old collections from Iran have been previously reported as *Cercospora punicae*. Stromata small, in some material developed. Conidiophores reduced to conidiogenous cells, proliferating sympodially. Loci inconspicuous. Conidia subcylindrical to obclavate, tip subobtuse, base truncate.
- 127.***Pseudocercospora rhamnaceicola* Goh & W.H. Hsieh
Host: *Paliurus spina-christii* Mill. (*Rhamnaceae*).
Location: Siahkola Forest (Mazandaran Prov.).
Reference: Bicharanlou et al. 2013c.
Note: Conidiophores pale brown, septate. Conidiogenous cells terminal, proliferating sympodially. Conidia obclavate-subcylindrical, tip obtuse, base truncate.

- 128. *Pseudocercospora rubi* (Sacc.) Deighton**
Synonym: *Cercospora rubi* Sacc.
Hosts: *Rubus* sp., **R. leucodermis* (*Rosaceae*).
Locations: Sowme'eh Sara, Rasht (Gilan Prov.).
References: Hedjaroude 1976 as *Cercospora rubi*, Hesami et al. 2012.
Note: Conidiophores in dense fascicles, septate, pale brown. Loci inconspicuous. Small conidia obclavate to subcylindrical, longer ones acicular, tip subobtuse to acute, base obconically truncate.
- 129.***Pseudocercospora salicina* (Ellis & Everh.) Deighton**
Host: *Salix alba* L. (*Salicaceae*).
Location: Kiashahr (Gilan Prov.).
Reference: Pirnia et al. 2012b.
Note: Conidiophores short, in loose to divergent fascicles, 0-1-septate, mostly reduced to conidiogenous cells. Conidia obclavate-subcylindrical, tip obtuse, base obconically truncate.
- 130. *Pseudocercospora salvadorae* (Maire) Deighton**
Synonym: *Cercospora salvadorae* Maire
Host: *Salvadora persica* L. (*Salvadoraceae*).
Locations: Jask, Chabahar (Sistan & Baluchestan Prov.), Minab (Hormozgan Prov.).
Reference: Ershad 1990 as *Cercospora salvadorae*.
Note: Conidiophores in dense fascicles, 0-1-septate, once geniculate. Conidia obclavate-subcylindrical, 3-8-septate, sometimes constricted at septa, tip rounded, base truncate.
- 131.**Pseudocercospora sophoricola* M. Bakhshi, Arzanlou, Babai-Ahari & Crous**
Host: *Sophora alopecuroides* L. (*Fabaceae*).
Location: Tarom (Zanjan Prov.).
Reference: Bakhshi et al. 2014.
Note: Conidiophores in moderately dense fascicles, very short, proliferating sympodially, reduced to conidiogenous cells. Loci unthickened to slightly thickened. Conidia subcylindrical to obclavate, 3-8-septate, tip obtuse to subobtuse, base obconically truncate.
- 132.***Pseudocercospora sordida* (Sacc.) Deighton**
Host: *Campsis grandiflora* Thunb. (*Bignoniaceae*).
Location: Nowshahr (Mazandaran Prov.).
Reference: Bicharanlou et al. 2013c.
Note: Stromata lacking or composed of a few swelling cells. Conidiophores aggregated in moderately dense fascicles, pale brown, septate, 1-2-geniculate. Conidia obclavate to subcylindrical, tip obtuse, base truncate.
- 133. *Pseudocercospora sphaerellae-eugeniae* (Sacc.) Crous, Alfenas & Barreto**
Synonym: *Cercospora eugeniae* (Rangel) Chupp
Host: *Eugenia jambos* L. (*Myrtaceae*).
Location: Chabahar (Sistan & Baluchestan Prov.).
Reference: Ershad 1990 as *Cercospora eugeniae*.
Note: Conidiophores in dense fascicles, reduced to conidiogenous cells. Conidia acicular to subcylindrical, olivaceous brown, 1-4-septate, tip subobtuse, base obconically truncate.
- 134. *Pseudocercospora vitis* (Lev.) Spig.**
Synonym: *Cercospora vitis* (Lév.) Sacc.
Hosts: *Vitis* sp., *V. sylvestris* Gmel, *V. vinifera* L. (*Vitaceae*).
Locations: Chalous, Khorramabad, Nowshahr, *Babol (Mazandaran Prov.), Rasht, *Sowme'eh Sara (Gilan Prov.).
References: Esfandiari 1947, Viennot-Bourgin et al. 1970, Hedjaroude 1976, Ershad 1990, Pirnia et al. 2012b, Bakhshi et al. 2014.
Note: Conidiophores synnematosus, Conidia pale brown to olivaceous, obclavate, straight to curved, 2-12-septate, sometimes constricted at septa, tip obtuse, base obconically truncate.

135. *Pseudocercospora* spp.

Hosts: *Eucalyptus* sp. (*Myrtaceae*), *Phaseolus vulgaris* (*Fabaceae*), *Diospyrus lotus* (*Ebenaceae*).

Locations: Rasht, *Sowme'eh Sara, *Talesh (Gilan Prov.), *Ramsar (Mazandaran Prov.).

References: Khodaparast et al. 2012a, Bakhshi et al. 2014.

136. *Ramularia alpina* (Massal.) Nannf.

Synonym: *Ovularia alpina* Massal.

Host: *Alchemilla* sp. (*Rosaceae*).

Location: Polezangouleh (Mazandaran Prov.).

References: Petrak 1949, Esfandiari 1951 as *Ovularia alpina*.

Note: Conidiophores in small to moderately dense fascicles, geniculate-sinuous. Conidia catenate, ellipsoid-ovoid, subcylindric-fusiform, ends rounded or attenuated.

137. *Ramularia anchusae* C. Massal.

Hosts: *Anchusa italica* Retz., *A. ovata* Lehm. (*Boraginaceae*)

Locations: Esfahan (Esfahan Prov.), Hamedan (Hamedan Prov.), *Yasuj, *Kakan, *Sisakht (Kohgiluyeh & Boyer-Ahmad Prov.).

References: Petrak 1953, Khabiri 1958, Vinnot-Bourgin et al. 1970, Moaven et al. 2003, Pirnia et al. 2012d, Behrooz et al. 2017b.

Note: Stromata well-developed. Conidiophores in dense fascicles, reduced to conidiogenous cells. Conidia fusiform to subcylindric, 0–3-septate.

138.*Ramularia armoraciae* Fuckel**

Hosts: *Barbarea plantaginea* DC. (*Brassicaceae*).

Locations: Sisakht, Kohkhedan, (Kohgiluyeh & Boyer-Ahmad Prov.).

References: Behrooz et al. 2017b.

Note: Conidiophores in divergent fascicles. 0-1-septate. Conidial scars slightly thickened and darkened. Conidia catenate, ellipsoid-ovoid, subcylindric-fusiform, ends rounded.

139. *Ramularia beccabungae* Fautr.

Hosts: *Veronica beccabunga* L., **V. anagalis-aquatica* L. (*Plantaginaceae*).

Locations: Gachsaran, *Cheram, Cheshmeh Belgheis, (Kohgiluyeh & Boyer-Ahmad Prov.).

References: Petrak & Esfandiari 1941, Behrooz et al. 2015a.

Note: Conidiophores up to 100 (-150) µm in length, in small to large fascicles. Conidia catenate, ellipsoid-ovoid, subcylindric-fusiform. The species is distinguished from *R. veronicae* by having long conidiophores and subcylindric-fusiform, 0-3-septate conidia.

140. *Ramularia bornmülleriana* (Magnus) Braun

Synonym: *Ovularia bornmulleriana* Magnus

Host: *Onobrychis sintenisii* Bornm. (*Fabaceae*).

Locations: Bojnord (North Khorasan Prov.), Maravehtappeh (Golestan Prov.).

Reference: Petrak 1939.

Note: Conidiophores in moderately dense fascicles, subcylindric, geniculate-sinuous. Conidia solitary, ellipsoid-ovoid, subcylindric, 0-septate, tip rounded, base rounded or attenuated.

141. *Ramularia brunnea* Peck.

Host: *Tusilago farfara* L. (*Asteraceae*).

Locations: Nava (Mazandaran Prov.), Damavand, (Tehran Prov.).

Reference: Ershad 1995.

Note: Conidiophores short, 0-septate. Loci conspicuous, darkened. Conidia catenate, Longer conidia cylindrical, shorter ones fusiform to narrowly ellipsoid.

142.*Ramularia carletonii* (Ellis & Kellerm.) U. Braun**

Host: *Lactuca tuberosa* Jacq. (*Asteraceae*).

Location: Noorabad (Fars Prov.).

Reference: Pirnia & Braun 2018.

Note: Stromata developed. Conidiophores in dense fascicles, geniculate-sinuous. Conidial scars conspicuous. Conidia solitary, ellipsoid-ovoid, subcylindrical to subglobose.

143.*Ramularia cupulariae* Pass.**

Host: *Inula* sp. (*Asteraceae*).

Locations: Yasuj, Dashte Rum, (Kohgiluyeh & Boyer-Ahmad Prov.).

Reference: Behrooz et al. 2017b.

Note: Conidiophores in moderately dense fascicles. Conidia catenate, occasionally in branched chains, ellipsoid-obovoid, subcylindric, ends rounded to obconically truncate, 0-1 septate.

144. *Ramularia cynarae* Sacc.

Synonym: *Ramularia carthami* Zaprom.

Hosts: *Carthamus oxyacantha* M. Bieb., *C. tinctorius* L., *Cirsium arvense* (L.) Scop. (*Asteraceae*).

Locations: Moghan (Ardabil Prov.), Ahvaz, Dezfoul (Khuzestan Prov.) Sari (Mazandaran Prov.), *Gorgan (Golestan Prov.), *Gachsaran (Kohgiluyeh & Boyer-Ahmad Prov.), *Marand, *Kaleibar (East Azarbaijan Prov.).

References: Viennot-Bourgin et al. 1969 as *Cercospora carthami* Sundar. & Ramakr., Minassian 1971, Altman et al. 1972, Ebrahimi & Minassian 1973 as *Ramularia carthami* Zaprom., Pirnia et al. 2012b, Behrooz et al. 2017b, Bakhshi 2018.

Note: Conidiophores in moderately dense fascicles. Conidia subcylindrical, fusiform to obovoid, apical part of conidia wider than basal part. Old collections from Iran reported as *Cercospora carthami* or *Ramularia carthami* (Ershad 2009). Braun (1998) reduced the later name as synonym with *R. cynarae*.

145.*Ramularia epilobiana* (Sacc. & Fautr.) B. Sutton & Piroz.**

Hosts: *Epilobium hirsutum* L. (*Onagraceae*).

Locations: Sisakht, Kohkhedan, (Kohgiluyeh & Boyer-Ahmad Prov.).

Reference: Behrooz et al. 2017b.

Note: Conidiophores in small fascicles, subcylindric, geniculate-sinuous. Conidia solitary, obovoid, subglobose, ellipsoid.

146. *Ramularia geranii* Fuckel var. *geranii*

Host: *Geranium pyrenaicum* L. (*Geraniaceae*).

Location: Karaj (Alborz Prov.).

Reference: Hedjaroude & Abbasi 2000.

Note: Type variety is distinguished from var. *erodii* by having shorter, 0-1-septate conidia (versus long, 4-septate conidia in var. *erodii*). Stromata developed. Conidiophores in dense fascicles, Loci conspicuous. Conidia catenate, cylindric, ellipsoid to obovoid.

147.Ramularia glennii* Videira & Crous**

Hosts: *Acalypha australis* L. (*Euphorbiaceae*), *Ficus carica* L. (*Moraceae*), *Platanus* sp. (*Platanaceae*).

Locations: Talesh (Gilan Prov.), Kaleibar (East Azarbaijan Prov.).

Reference: Bakhshi & Arzanlou 2017.

Note: Conidiophores reduced to conidiogenous cells, proliferating sympodially. Conidia aseptate, fusiform or oval. Fungus found on wide range of substrates (Videira et al. 2015).

148. *Ramularia grevilleana* (L.R. Tul. & C. Tul.) Jørst., var. *grevilleana* U. Braun

Synonym: *Ramularia arvensis* Sacc.

Hosts: *Fragaria* sp., *F. ananassa* Duchesne, *Potentilla reptans* L. (*Rosaceae*).

Locations: Orumieh (West Azarbaijan Prov.), Lahijan, Astara (Gilan Prov.), Chalous, *Sari (Mazandaran Prov.), *Yasuj *Sisakht (Kohgiluyeh & Boyer-Ahmad Prov.) Gorgan, *Golestan National Park (Golestan Prov.).

References: Eskandari 1964, Scharif & Ershad 1966, Ershad 1995, Pirnia et al. 2012d, Behrooz et al. 2017b, Heydari et al. 2017.

Note: Old collections from Iran reported as *R. tulasnei* Sacc. or *R. arvensis* Sacc. on *Fragaria* L. and *Potentilla* L. respectively. Braun (1998) reduced two later names as synonym with *R. grevilleana*. The species has a wide host range on the genera of *Rosaceae*.

149. *Ramularia heraclei* (Oudem.) Sacc.

Host: *Heracleum* sp., *H. persicum* Desf. ex Fischer (*Apiaceae*).

Locations: Mashhad (Razavi Khorasan Prov.), Asalem (Gilan Prov.), Tehran (Tehran Prov.), *Kaleibar (East Azarbaijan Prov.).

References: Esfandiari 1948, Ershad 1995.

Note: Conidiophores long (up to 110 µm), septate. Conidiogenous loci conspicuous. Conidia cylindrical, fusiform, obovoid, 0-3-septate.

150.*Ramularia hydrangeae-macrophyllae*** U. Braun & C.F. Hill

Host: *Vitis vinifera* L. (*Vitaceae*).

Location: Kaleibar (East Azarbaijan Prov.).

Reference: Bakhshi 2018.

Note: Conidiophores reduced to conidiogenous cells, straight or geniculate-sinuous. Conidia catenate, ellipsoid, obovoid, subcylindrical. The species is plurivorous.

151.*Ramularia inaequalis*** (Preuss) U. Braun

Host: *Calendula persica* C.A Mey., *Taraxacum campylodes* G.E. Haglund. (*Asteraceae*).

Location: Babolsar (Mazandaran Prov.), Marand, Mianeh (East Azarbaijan Prov.), Khoy (West Azarbaijan Prov.).

Reference: Pirnia et al. 2012d, Bakhshi 2018.

Note: Several *Ramularia* species have been described on various host plants belonging to the composite sub-family *Cichorioideae*. Braun (1998) reduced numerous names to synonym with *R. inaequalis*. Morphology of specimen on *Calendula persica* (sub-family *Asteroideae*) agrees with description of *R. inaequalis* provided by Braun (1988).

152. *Ramularia iranica* Petr.

Host: *Acantholimon* sp. (*Plumbaginaceae*).

Location: Shahsavari (Mazandaran Prov.).

References: Petrak 1949, Esfandiari 1951.

Note: The specimen did not examine. Braun (1993) cited that fungus is belonged to *Coelomyces* with pycnidial conidiomata.

153. *Ramularia lamii* Fuckel **var. *lamii*** U. Braun

Synonyms: *Ramularia leonuri* Sacc. & Penz.

Ramularia menthae Sacc.

Ramularia menthicola Sacc.

Hosts: **Mentha* sp., *M. arvensis* L. **M. piperita* L., **M. longifolia* (*Lamiaceae*).

Locations: Gorgan (Golestan Prov.), *Divandareh (Kurdistan Prov.), *Ganjnameh (Hamedan Prov.), *Gachsaran *Basht, Khan-Ahmad, (Kohgiluyeh & Boyer-Ahmad Prov.).

References: Viennot-Bourgin et al. 1969 as *R. menthicola*, Hedjaroude 1983, Anonymous 2005 as *R. menthicola*, Ershad 1995, Pirnia et al. 2012d, Behrooz et al. 2017b.

Note: The species has a wide host range on *Lamiaceae*, subfamily *Lamioideae* (Braun 1998). Type variety is distinguished from var. *minor* by having moderately longer conidiophores and conidia.

154. *Ramularia macrospora* Fres.

Host: *Campanula rapunculus* L. (*Campanulaceae*)

Location: Siabshih (Mazandaran Prov.).

References: Petrak & Esfandiari 1941, Esfandiari 1946b, Scharif & Ershad 1966.

Note: Conidiophores in small to dense fascicles, geniculate-sinuous. Conidial scars thickened and darkened. Conidia solitary, broadly ellipsoid-ovoid, cylindrical, 0-3-septate.

155.*Ramularia macularis*** (J. Schröt.) Sacc. & Syd.

Host: *Chenopodium album* L. (*Chenopodiaceae*).

Location: Gonbad (Razavi Khorasan Prov.).

Reference: Pirnia et al. 2012d.

Note: Conidiophores aggregated in moderately dense fascicles, once geniculate. Conidia subcylindrical to fusiform, catenate, hila thickened and darkened.

156.Ramularia mali*** Videira & Crous

Hosts: *Prunus cerasus* L. (Rosaceae), *Vitis vinifera* (Vitaceae).

Locations: Khoy, Kaleibar (East Azarbaijan Prov.).

Reference: Bakhshi & Arzanlou 2017.

Note: Conidiophores reduced to conidiogenous cells, conidiogenous cells proliferating sympodially. Conidia catenate, fusoid, ovoid, obovoid. The species assumed to be host specific on *Malus domestica* Borkh. Molecular data proved wider host range of the species.

157.*Ramularia marrubii*** C. Massal.

Synonym: *Ramularia sideritis* Hollos.

Hosts: *Sideritis* sp., **S. montana* L. (Lamiaceae).

Locations: Bojnord (North Khorasan Prov.), Maravehtappeh (Golestan Prov.), *Yasuj (Kohgiluyeh & Boyer-Ahmad Prov.).

Reference: Petrak 1939, Behrooz et al. 2015a.

Note: Stromata developed, globular. Conidiophores in small to large fascicles, geniculate-sinuus. Conidia suncylindric, fusiform, 0-1-septate. The first report of the species in Iran date back to 80 years ago (Petrak 1939).

158.*Ramularia nagorny*** Karak.

Host: *Centaurea solstitialis* L. (Asteraceae).

Location: Basht (Kohgiluyeh & Boyer-Ahmad Prov.).

Reference: Pirnia & Braun 2018.

Note: Several species of the genus *Ramularia* were described from various genera of the Asteraceae. *R. nagorny* is distinguished by having 0-3-septate conidia. Width of conidia mostly decreasing from tip to base.

159.*Ramularia picridis*** Fautrey & Roum. (= *R. inaequalis* (Preus.) U. Braun s. lat.)

Host: *Picris strigosa* M. Bieb. (Asteraceae).

Location: Noorabad (Fars Prov.).

Reference: Pirnia & Braun 2018.

Note: Braun (1998) reduced numerous names including *R. picridis* to synonymy with *R. inaequalis*. According to Videira et al. (2016) *R. inaequalis* turned out to be a complex of genetically well-differentiated species. Therefore, *R. inaequalis* as compound species with wide host range has been refuted.

160.*Ramularia pratensis*** Sacc. **var. *pratensis***

Hosts: *Rumex* sp., *R. crispus* L. (Polygonaceae).

Locations: Damghan (Semnan Prov.), Galougah (Mazandaran Prov.), Gorgan (Golestan Prov.), Yasuj, Kakan, Basht (Kohgiluyeh & B Boyer-Ahmad Prov.).

Reference: Pirnia et al. 2012d, Behrooz et al. 2015a.

Note: Conidiophores aggregated in moderately dense fascicles, reduced to conidiogenous cells. Loci conspicuous, frequent in the upper part. Conidia variable in shape, longer ones slender, subcylindrical and narrow.

161. *Ramularia primulae* Thüm.

Host: *Primula aqualis* L. (Primulaceae).

Location: Hashtgerd (Tehran Prov.).

Reference: Aghapour et al. 2010.

Note: Conidiophores in small fascicles. geniculate-sinuus. Conidia catenate, cylindrical, fusiform, ends obtuse to subtruncate.

162.*Ramularia ranunculicola*** Pirnia & U. Braun

Host: *Ranunculus muricatus* L. (Ranunculaceae).

Location: Noorabad (Fars Prov.).

Reference: Pirnia & Braun 2018.

Note: Stromata developed. Conidiophores in rich, dense fascicles, often reduced to conidiogenous cells. Conidia catenate, ellipsoid-ovoid, subcylindrical-fusoid, aseptate, occasionally 1-septate.

163. *Ramularia rhabdospora* (Berk. & Broome) Nannf.

Synonym: *R. plantaginea* Sacc.

Host: *Plantago lanceolata* L. (*Plantaginaceae*).

Locations: Pasghalleh, Tehran (Tehran Prov.), Kerman (Kerman Prov.) *Damghan (Semnan Prov.), *Gachsaran, *Sisakht (Kohgiluyeh & Boyer-Ahmad Prov.).

References: Esfandiari 1948 as *R. plantaginea*, Pirnia et al. 2012d, Behrooz et al. 2015a.

Note: Conidiophores reduced to conidiogenous cells. Conidia catenate, surface echinulate.

164. *Ramularia rubella* (Bonord.) Nannf.

Synonym: *Ovularia obliqua* (Cooke) Oud.

Hosts: *Rumex* sp., *R. crispus* L., **R. conglomeratus* Murr. **R. acetosa* L. (*Polygonaceae*).

Locations: Asalem, Lahijan (Gilan Prov.), Amol, Zialet, Kelardasht (Mazandaran Prov.), Ghasre shirin (Kermanshah Prov.) *Kurdistan (Kurdistan Prov.), *Behshahr (Mazandaran Prov.), *Gorgan (Golestan Prov.).

Reference: Esfandiari 1948, Viennot-Bourgin et al. 1969, Ershad 1995 all as *Ovularia obliqua*, Pirnia et al. 2012d, Bicharanlou et al. 2013, Behrooz et al. 2015a, Heydari et al. 2017.

Note: The species is characterized by having solitary, obovoid-ellipsoid conidia.

165. *Ramularia rufomaculans* Peck.

Host: *Polygonum* sp. (*Polygonaceae*).

Location: unknown.

Reference: Khabiri 1958.

Note: Conidiophores in small fascicles, geniculate-sinuuous. Conidia catenate, 0-1-septate, ellipsoid, ovoid, subcylindric, fusiform.

166. *Ramularia rumicis* Kalchbr. & Cooke

Synonym: *Ramularia decipiens* Ellis & Everh.

Hosts: *Rumex* sp., *R. crispus* L. (*Polygonaceae*).

Locations: Chalous (Mazandaran Prov.), Kermanshah (Kermanshah Prov.) (Mazandaran Prov.), Maravehtappeh (Golestan Prov.), Shiraz, Dashte-Arzhan (Fars Prov.) *Sari (Mazandaran Prov.), *Yasuj (Kohgiluyeh & Boyer-Ahmad Prov.).

References: Viennot-Bourgin et al. 1970, Ershad 1995, Fotouhifar et al. 2003 all as *R. decipiens*, Pirnia et al. 2012d, Behrooz et al. 2015a.

Note: Conidiophores 0-1-septate. Conidia subcylindrical, catenate, 0-3-septate.

167. *Ramularia rumicis-scutati* Allesch.

Host: *Rumex scutatus* L. (*Polygonaceae*).

Location: Fasham (Tehran Prov.).

Reference: Petrak & Esfandiari 1941, Esfandiari 1946a, b.

Note: Caespituli amphigenous, mostly hypophyllous. Conidiophores in moderately dense fascicles. Conidia catenate, oblong, cylindrical, 1-septate.

168. *Ramularia sambucina* Sacc.

Hosts: *Sambucus ebulus* L., **S. nigra* L. (*Adoxaceae*).

Locations: Shastkola Forest (Golestan Prov.), Rasht (Gilan Prov.), *Golestan National Park (Golestan Prov.).

References: Petrak & Esfandiari 1941, Esfandiari 1946b, Heydari et al. 2017.

Note: Conidiophores aggregated in moderately dense fascicles. Conidia mostly subcylindrical to fusiform. The first report of the species date back to 78 years ago (Petrak & Esfandiari 1941).

169. *Ramularia simplex* Pass.

Hosts: *Ranunculus oxyspermus* Willd., **R. sahendicus* Murr. **R. acris* L. (*Ranunculaceae*).

- Locations:** Ganjnameh (Hamedan Prov.) *Yasuj, Dashterum (Kohgiluyeh & Boyer-Ahmad Prov.).
- References:** Moaven et al. 2003, Pirnia et al. 2012d, Behrooz et al. 2017b.
- Note:** Conidiophores 0-septate, moderately long. Loci conspicuous, terminal and lateral. Conidia solitary, broadly obovoid to ellipsoid.
- 170.**Ramularia taleshina*** M. Bakhshi & Arzanlou
Host: *Alnus subcordata* (*Betulaceae*).
Location: Talesh (Gilan Prov.).
Reference: Bakhshi & Arzanlou 2017.
Note: Conidiophores reduced to conidiogenous cells, proliferating sympodially. Conidia catenate, intercalary conidia oval or ellipsoid. Ramoconidia subcylindrical, oval or ellipsoid.
- 171. *Ramularia uredinicola*** Khodap. & U. Braun
Host: Hyperparasite of uredia of *Melampsora* sp. on *Salix babylonica* L.
Location: Rasht (Gilan Prov.).
Reference: Khodaparast & Braun 2005.
Note: Conidiophores moderately long, solitary or aggregated in uredia of *Melampsora* sp. Conidia catenate, variable in shape.
- 172. *Ramularia urticae*** Ces.
Hosts: *Urtica dioica* L., *U. urens* L. (*Urticaceae*).
Locations: Kojur (Mazandaran Prov.), Hamedan (Hamedan Prov.), Shastkola Forest (Golestan Prov.), *Marivan (Kurdistan Prov.).
References: Esfandiari 1948, Viennot-Bourgin 1958, Pirnia et al. 2012d.
Note: Conidiophores aggregated in dense fascicles, very short, up to 25 µm in length. Conidia obovoid-ellipsoid.
- 173. *Ramularia valerianae*** (Speg.) Sacc.
Host: *Valeriana sisymbriifolia* Vahl. (*Valerianaceae*).
Location: Mazandaran Prov.
Reference: Petrak 1939.
Note: Conidiophores in small to dense fascicles, flexuous to geniculate-sinuous. Conidia catenate, ellipsoid, subcylindrical.
- 174.***Ramularia variabilis*** Fuckel
Hosts: *Verbascum blattaria* L., *V. sinuatum* L. (*Scrophulariaceae*).
Locations: Galougah, Hezarjarib Forest (Mazandaran Prov.), Yasuj, Gachsaran (Kohgiluyeh & Boyer-Ahmad Prov.).
References: Bicharanlou et al. 2013, Behrooz et al. 2015a.
Note: Conidiophores short. Conidia caenate, in simple to branched chains.
- 175.***Ramularia veronicae*** Fuckel
Host: *Veronica anagalis-aquatica* L. (*Plantaginaceae*).
Location: Yasuj (Kohgiluyeh & Boyer-Ahmad Prov.).
Reference: Behrooz et al. 2015a.
Note: Conidiophores aggregated in dense fascicles. Loci conspicuous, terminal and lateral, Conidia subcylindrical, fusiform or ellipsoid, 0-1-septate.
- 176.***Ramularia winteri*** Thüm.
Host: *Ononis spinosa* L. (*Fabaceae*).
Locations: Sisakht, Kohkhedan (Kohgiluyeh & Boyer-Ahmad Prov.).
Reference: Behrooz et al. 2015a.
Note: Stromata well developed. Conidiophores in dense fascicles, reduced to conidiogenous cells. Conidia catenate, varied in morphology, subcylindrical, fusiform, ellipsoid, obovoi, 0-5-septate, sometimes constricted at septa.
- 177. *Ramularia* spp.**
Hosts: *Foeniculum vulgare* Mill. (*Apiaceae*), *Potentilla* sp. (*Rosaceae*), *Rumex* sp. (*Polygonaceae*).

- Locations:** Ghaemshahr (Mazandaran Prov.), Astara (Gilan Prov.), Dezfoul (Khuzestan Prov.).
- Reference:** Khabiri 1952, Vaziri 1973, Hedjaroude 1976.
- 178. *Ramulariopsis gossypii* (Speg.) U. Braun**
Synonym: *Cercospora gossypii* Speg.
Ramularia areola Atk.
Hosts: *Gossypium* sp., *G. hirsutum* Cav. (*Malvaceae*).
Locations: Babol, Ghaemshahr (Mazandaran Prov.), Gorgan (Golestan Prov.).
References: Esfandiari 1948, Khabiri 1952 as *Cercospora gossypii*, Golato 1960, Scharif & Ershad 1966 as *Cercospora gossypii*, Ershad 1995.
Note: Esfandiari (1948) introduced *Ramularia areolata* Atk. as causal agent of *Gossypium* leaf spot. Braun (1998) cited *R. areola* as synonym of *Ramulariopsis gossypii*. The genus *Ramulariopsis* differ from *Ramularia* by its short branches on the conidiophores as well as terminal and intercalary conidiogenous cells.
- 179.***Ramulispora herpotrichoides* (Fron.) Arx**
Synonym: *Pseudocercospora herpotrichoides* (Fron) Deighton
Hosts: *Triticum aestivum* L. (*Poaceae*).
Location: Hamedan (Hamedan Prov.).
Reference: Soleimany 2000.
Note: Conidiophores solitary or fasciculate, often reduced to conidiogenous cell. Conidia acicular, subcylindrical, filiform, narrowly obclavate. *Pseudocercospora herpotrichoides* is reduced to synonym with *Ramulispora herpotrichoides* (Videira et al. 2017).
- 180.***Rosisphaerella rosicola* (Pass.) U. Braun, C. Nakash., Videira & Crous**
Synonyms: *Cercospora rosicola* Pass.
Passalora rosicola (Pass.) U. Braun
Hosts: *Rosa* sp., **R. hybrida* Tea. (*Rosaceae*).
Locations: Ardabil (Ardabil Prov.), Garmsar (Semnan Prov.), Khoy (West Azarbaijan Prov.), Shiraz (Fars Prov.), Karaj (Alborz Prov.), Tabriz (East Azarbaijan Prov.), Kashan (Esfahan Prov.), Tehran Prov., Shahsavari, Tonekabon, *Nowshahr (Mazandaran Prov.).
References: Viennot-Bourgin et al. 1958, Scharif & Ershad 1966, Viennot-Bourgin et al. 1970, Bicharanlou et al. 2013b.
Note: *Passalora rosicola* is reduced to synonym with *Rosisphaerella rosicola* (Videira et al. 2017). The species is morphologically close to *P. rosae*, but distinguished by having moderately long, sparingly septate conidiophores and long, obclavate, 1-6-septate conidia.
- 181.***Scolecostigmia confluens* (Lieneman) U. Braun**
Hosts: *Crataegus pseudomelanocarpa* Popov ex Lincz. *C. melanocarpa* M. Bieb. (*Rosaceae*).
Locations: Ghorogh Forest Park (Golestan Prov.), Rasht, Saravan Forest (Gilan Prov.).
References: Pirnia et al. 2012a.
Note: The species is characterized by having conspicuous annellations on conidiophores and subcylindrical-obclavate, smooth to verruculose, transversely multiseptate conidia.
- 182.***Scolecostigmia palmivora* (Sacc.) Kamal**
Synonym: *Stigmia palmivora* (Sacc.) S. Hughes
Hosts: *Phoenix canariensis* L., *P. dactylifera* L., *Washingtonia robusta* (André) H. Wendl. (*Arecaceae*).
Location: Nowshahr (Mazandaran Prov.).
Reference: Bicharanlou et al. 2013a.
Note: Conidiogenous cells proliferating annelidic. Conidia cylindrical to broadly obclavate.
- 183. *Sirosporium celtidis* (Biv.) M.B. Ellis**
Synonym: *Gyrocera celtidis* Mont. & Ces.
Hosts: *Celtis* sp., *C. australis* L., *C. caucasica* Willd. (*Cannabaceae*).

Locations: Aliabad, Gorgan, *Shastkola Forest, *Touskestan (Golestan Prov.), Roudbar (Gilan Prov.), Nowshahr, *Behshahr (Mazandaran Prov.).

References: Petrak & Esfandiari 1941, Esfandiari 1946 as *Gyroceras celtidis*, Scharif & Ershad 1966, Viennot-Bourgin et al. 1970, Khodaparast et al. 2008, Pirnia et al. 2012a, Heydari et al. 2017.

Note: Conidiophore solitary, swollen, sinuous to once geniculate, Conidiogenous loci crowded at the apex. Conidia solitary, dark brown with transverse and oblique septa.

184. *Sirosporium mori* (Syd. & P. Syd.) M.B. Ellis

Host: *Morus* sp. (*Moraceae*).

Location: Amlash (Guilan Prov.).

Reference: Khodaparast et al. 2008.

Note: Conidiophores rugose or verrucose near the apex. Conidia pale to medium brown, obclavate, cylindrical, straight or curved, with 3-11 transverse septa.

185.*Sultanimyces vitiphyllus*** (Speschnew) Videira & Crous

Synonym: *Asperisporium vitiphyllum* (Speschnew) Deighton

Host: *Vitis vinifera* L. (*Vitaceae*).

Locations: Ahvaz, Dezfoul (Khuzestan Prov.), Luristan (Luristan Prov.), Mashhad (Razavi Khorasan Prov.), Ghasreshirin (Kermanshah Prov.), Azarbaijan (East and West Azarbaijan Prov.).

References: (Esfandiari & Petrak 1950, Esfandiari 1951, Steyaert 1953, Petrak 1956, Boubals & Nazemille 1966, Scharif & Ershad 1966, Altman et al. 1972, Ebrahimi & Minnasian 1973, Vaziri 1973) all as *Asperisporium vitiphyllum*.

Note: Conidiophores in dense fascicles. Conidiogenous loci conspicuous. Conidia ellipsoid, fusiform, subcylindrical, obclavate, smooth to verruculose. *Asperisporium vitiphyllum* is reduced to synonym with *Sultanimyces vitiphyllus* (Videira et al. 2017).

186. *Zasmidium* sp.

Hosts: *Malus pumila* Mill., *Pyrus communis* L. (*Rosaceae*).

Locations: Sowme'eh Sara, Lahijan (Gilan Prov.).

Reference: Heidari et al. 2015.

Note: Conidiophores solitary, sometimes fasciculate, straight to geniculate-sinuous. Conidiogenous cells polyblastic, sympodial. Conidia pale olivaceous to brown, verruculose.

Discussion

Numerical information of cercosporoid and ramularioid genera are summarized in Table 1. Results showed that 62 species were belonged to the genus *Cercospora*, found on 169 host plants belonging to 95 genera and 43 plant families. *Asteraceae* represent the host plant families with most *Cercospora* species (12 species) and Gilan represented the province with most distribution of *Cercospora* species.

36 species were belonged to the genus *Pseudocercospora*, found on 45 host plants belonging to 31 genera and 21 families. The highest numbers of *Pseudocercospora* species are recorded on the *Fabaceae* (5 species).

21 species were belonged to the genus *Passalora*, identified on 30 host plants belonging to 24 genera and 13 families. *Asteraceae* represent the host plant family with most *Passalora* species (4 species). Other *Cercospora* like genera represent a few species, limited host range and geographical distribution (Table 1).

42 species were belonged to the genus *Ramularia*, found on 69 host plants belonging to 41 genera and 25 families. The highest numbers of *Ramularia* species were collected on representatives of the *Asteraceae* (7 species). Occurrences of other *Ramularia*-like genera were very scanty and represented the genera with a few species and narrowly host range (Table 1).

During 1939–2009 (68 years) only 24 species of each *Cercospora* and *Ramularia* reported from Iran, whilst, during 2009–2019 (10 years), 76 new or less known records of the *Cercospora*-like species and 22 new or less known records of *Ramularia*-like species are added to the

mycobiota of Iran. Furthermore, some previous names replaced with current accepted names (Table 2). Therefore, information of cercosporoids and ramularioids increased more than twice since 2009.

Table 1 Concise numerical information of cercosporoid and ramularioid genera in Iran.

Genus	Total reported species	Host plant genera	Host plant families	Provinces with most distribution of species
<i>Cercospora</i>	62	95	43	Gilan (28 species)
<i>Cercospora</i>	2	2	2	Mazandaran
<i>Cercosporidium</i>	1	1	1	Ardabil
<i>Clypeosphaerella</i>	1	1	1	Hormozgan
<i>Fulvia</i>	1	1	1	Gilan
<i>Graminopassalora</i>	1	4	1	Ardabil
<i>Microcyclosporella</i>	1	1	1	Gilan
<i>Neocercospora</i>	1	1	1	West Azarbaijan
<i>Neocercosporidium</i>	1	1	1	Gilan
<i>Neoovularia</i>	2	2	2	North Khorasan
<i>Neopseudocercospora</i>	1	2	1	Kohgiluyeh & Boyer-Ahmad
<i>Neoramularia</i>	2	2	2	Mazandaran
<i>Nothopassalora</i>	1	1	1	Gilan
<i>Paracercosporidium</i>	1	1	1	Gilan
<i>Passalora</i>	21	24	13	Mazandaran (9 species)
<i>Pseudocercospora</i>	36	31	21	Mazandaran (18 species)
<i>Ramularia</i>	42	41	25	Kohgiluyeh & Boyer-Ahmad (17 species)
<i>Ramulariopsis</i>	1	1	1	Mazandaran
<i>Ramulispora</i>	1	1	1	Hamedan
<i>Rosisphaerella</i>	1	1	1	Mazandaran
<i>Scolecostigmina</i>	2	2	2	Mazandaran
<i>Sirosporium</i>	2	2	2	Golestan
<i>Sultanimyces</i>	1	1	1	Khuzestan
<i>Zasmidium</i>	1	1	1	Gilan

Table 2 Previous and current accepted names of some cercosporoid and ramularioid species in Iran

Previous names reported from Iran	Current accepted names
<i>Asperisporium vitiphyllum</i>	<i>Sultanimyces vitiphyllum</i>
<i>Cercospora gossypii</i>	<i>Ramulariopsis gossypii</i>
<i>Cercospora danaecola</i>	<i>Pseudocercospora danaecola</i>
<i>Passalora calotropidis</i>	<i>Clypeosphaerella calotropidis</i>
<i>Passalora chaetomium</i>	<i>Cercosporidium chaetomium</i>
<i>Passalora fulva</i>	<i>Fulvia fulva</i>
<i>Passalora graminis</i>	<i>Graminopassalora graminis</i>
<i>Passalora microsora</i>	<i>Paracercosporidium microsorum</i>
<i>Passalora personata</i>	<i>Nothopassalora personata</i>
<i>Passalora rosicola</i>	<i>Rosisphaerella rosicola</i>
<i>Passalora smilacis</i>	<i>Neocercosporidium smilacis</i>
<i>Phaeoisariopsis griseola</i>	<i>Pseudocercospora griseola</i>
<i>Prathigada condensata</i>	<i>Passalora condensata</i>
<i>Pseudocercospora capsellae</i>	<i>Neopseudocercospora capsellae</i>
<i>Pseudocercospora herpotrichoides</i>	<i>Ramulispora herpotrichoides</i>
<i>Ramularia rubicola</i> (Illegitimate)	<i>Neoramularia rubi</i>
<i>Stigmina palmivora</i>	<i>Scolecostigmina palmivora</i>
<i>Stigmina platani</i>	<i>Pseudocercospora platani</i>

Species presented in current list distributed in 26 different provinces. According to Fisher (1968) Iran consists of four physiographic units (Fig. 2). Some of mountains, especially in the west

(Zagros) and north (Alborz) occupying the entire western and northern parts of the country. Many species of cercosporoids and ramularioids are distributed in Zagros and northern highlands, whilst interior desert basins and eastern highlands showed minimum distribution and diversity. Parsa (1978) divided provinces of Iran into 9 biotic provinces (Fig. 3). Caspian Sea area (including Gilan, Golestan, Mazandaran Provinces) comprises maximum distribution of *Cercospora* and *Cercospora*-like genera. Those provinces have high biodiversity of plant coverage and maximum rainfall. Kohgiluyeh & Boyerahmad Province (Zagrosian area) showed the highest distribution of *Ramularia* species. The latter province is endowed with rich floral diversity. Kavirian, Lutian and Bazmanian provinces represented the minimum distribution and diversity of both cercosporoids and ramularioids.



Fig. 2 – Iran: Physiographic units (Fisher 1968)

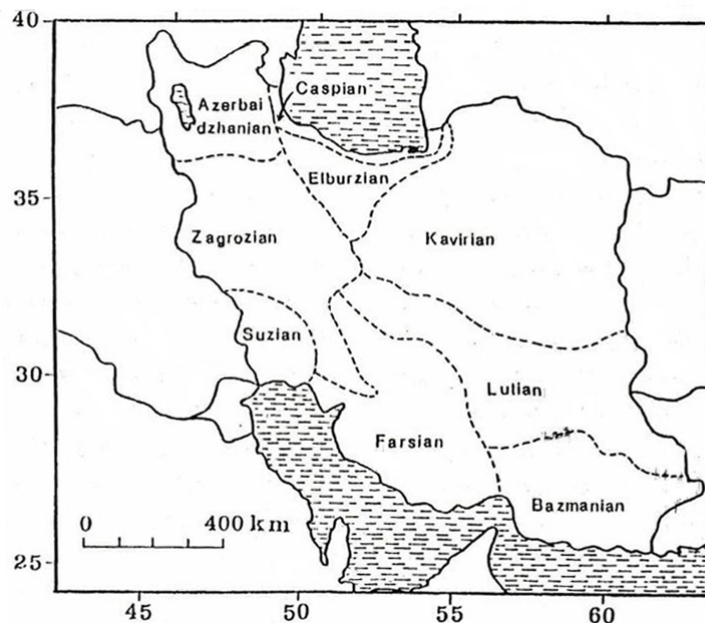


Fig. 3 – Biotic Provinces of Iran (Parsa 1978)

Host family index for cercosporoid and ramulariarioid species from Iran

Aceraceae

Cercospora flagellaris

Adoxaceae

Ramularia sambucina

Amaranthaceae

Cercospora acnidae

Cercospora brachiate

Cercospora flagellaris

Cercospora sp.

Pseudocercospora gomphrenae

Anacardiaceae

Pseudocercospora pistaciae

Apiaceae

Neocercospora ammicola

Passalora punctum

Passalora scadicearum

Ramularia heraclei

Ramularia sp.

Apocynaceae

Cercospora apii

Cercospora neriicola

Clypeosphaerella calotropidis

Pseudocercospora mazandaranensis

Pseudocercospora neriella

Araceae

Cercospora flagellaris

Cercospora richardiicola

Areaceae

Cercospora apii

Scolecostigmina palmivora

Asparagaceae

Pseudocercospora danaicola

Asteraceae

Cercospora armoraciae

Cercospora beticola

Cercospora cichorii

Cercospora conyzae-canadensis

Cercospora cylindracea

Cercospora flagellaris

Cercospora gerberae

Cercospora helianthicola

Cercospora lactuca-sativae

Cercospora richardiicola

Cercospora sonchi

Cercospora xanthicola

Cercospora zinnia

Cercospora sp.

Cercosporella virgaureae

Passalora carlinae

Passalora cousiniae

Passalora phaeopappi

Passalora scariolae

Ramularia brunnea

Ramularia carletonii

Ramularia cupulariae

Ramularia cynarae

Ramularia inaequalis

Ramularia nagorny

Ramularia picridis

Balsaminaceae

Cercospora flagellaris

Cercospora fukushiana

Berberidaceae

Cercospora apii

Betulaceae

Passalora cf. *bacilligera*

Ramularia taleshina

Bignoniaceae

Pseudocercospora sordida

Boraginaceae

Cercospora apii

Cercospora taurica

Ramularia anchusae

Brassicaceae

Cercospora armoraciae

Cercospora bizzozeriana

Cercospora cheiranthi

Cercospora cruciferarum

Cercospora flagellaris

Cercospora nasturtii

Cercospora sp.

Neopseudocercosporella capsellae

Ramularia armoraciae

Buxaceae

Cercospora flagellaris

Campanulaceae

Ramularia macrospora

Cannabaceae

Sirosporium celtidis

Capparidaceae

Cercospora armoraciae

Cercospora sp.

Caprifoliaceae

Cercospora deutziae

Pseudocercospora abeliae

Chenopodiaceae

Cercospora beticola

Cercospora chenopodii

Cercospora pseudochenopodii

Passalora dubia

Ramularia macularis

Convolvulaceae

Cercospora convolvulicola

Passalora calystegiae

Cucurbitaceae

Cercospora apii

Cercospora citrullina

Cercospora flagellaris

Cercospora sp.

Passalora cucurbiticola

Cyperaceae

Cercospora caricis

Datiscaceae

Cercospora datiscicola

Ebenaceae

Pseudocercospora kaki

Pseudocercospora sp.

Elaeagnaceae

Cercospora elaeagni

Euphorbiaceae

Cercospora mercurialis
Cercospora phlcherrimae
Cercospora ricinella
Cercosporidium chaetomium
Ramularia glennii

Fabaceae

Cercospora apii
Cercospora armoraciae
Cercospora canescens
Cercospora erythrinicola
Cercospora iranica
Cercospora kikuchii
Cercospora medicaginis
Cercospora rautensis
Cercospora traversiana
Cercospora zebrina
Cercospora zonata
Cercospora sp.
Neoovularia nomuriana
Nothopassalora personata
Passalora bondartsevii
Passalora condensate
Pseudocercospora cavarae
Pseudocercospora cruenta
Pseudocercospora griseola
Pseudocercospora sophoricola
Pseudocercospora sp.
Ramularia bornmuelleriana
Ramularia winteri

Geraniaceae

Cercospora brunkii
Cercospora flagellaris
Ramularia geranii var. *geranii*

Gynkgoaceae

Cercospora apii

Hostaceae

Cercospora hostae

Hydrangeaceae

Cercospora flagellaris
Cercospora hydrangea
Cercospora iranica
Cercospora sp.

Iridaceae

Cercospora sp.

Lamiaceae

Neoovularia ovata
Ramularia lamii var. *lamii*
Ramularia marrubii

Lythraceae

Cercospora sp.
Pseudocercospora punicae

Malvaceae

Cercospora althaeina
Cercospora avicennae
Cercospora beticola
Cercospora flagellaris
Cercospora malayensis
Cercospora sp.
Pseudocercospora abelmoschi
Ramulariopsis gossypii

Moraceae

Cercospora morina

Passalora bolleana
Pseudocercospora fici
Pseudocercospora mori
Ramularia glennii
Sirosporium mori

Musaceae

Pseudocercospora musae

Myrtaceae

Pseudocercospora eucalyptorum
Pseudocercospora paraguayensis
Pseudocercospora sphaerellae-eugeniae
Pseudocercospora sp.

Oleaceae

Cercospora flagellaris
Cercospora sp.
Cercospora texensis
Passalora fraxini
Passalora fraxinicola

Onagraceae

Passalora heterospora
Ramularia epilobiana

Pedaliaceae

Cercospora beticola

Phytolaccaceae

Cercospora flagellaris

Plantaginaceae

Cercospora beticola
Cercospora pantoleuca
Cercospora plantaginis
Cercospora sp.
Ramularia beccabungae
Ramularia rhabdospora
Ramularia veronicae

Platanaceae

Pseudocercospora platanigena
Ramularia glennii

Poaceae

Cercospora sorghi
Cercospora sorghicola
Cercospora sp.
Graminopassalora graminis
Ramulispora herpotrichoides

Plumbaginaceae

Ramularia iranica

Polygonaceae

Cercospora beticola
Cercospora peckiana
Cercospora rumicis
Ramularia pratensis var. *pratensis*
Ramularia rubella

Ramularia rufomaculans
Ramularia rumicis
Ramularia rumicis-scutati
Ramularia sp.

Primulaceae

Cercospora primulae
Ramularia primulae

Ranunculaceae

Ramularia ranunculicola
Ramularia simplex

Rhamnaceae

Passalora rhamni
Passalora ziziphi

Pseudocercospora jujubae
Pseudocercospora rhamnaceicola

Rosaceae

Cercospora apii
Cercospora scharifii
Cercospora sp.
Microcyclosporella mali
Neoramularia rubi
Passalora circumscissa
Passalora rosae
Pseudocercospora cydoniae
Pseudocercospora heteromalla
Pseudocercospora norchiensis
Pseudocercospora rubi
Ramularia alpina
Ramularia grevilleana
Ramularia mali
Ramularia sp.
Rosisphaerella rosicola
Scolecostigmina confluens
Zasmidium sp.

Rutaceae

Cercospora sp.

Salicaceae

Cercospora flagellaris
Passalora brandenburgeri
Pseudocercospora salicina

Salvadoraceae

Pseudocercospora salvadorae

Saxifragaceae

Cercospora apii

Scrophulariaceae

Neoramularia esfandiarrii

Ramularia variabilis

Smilacaceae

Neocercosporidium smilacis
Pseudocercospora mississippiensis

Solanaceae

Cercospora apii
Cercospora flagellaris
Cercospora physalidis
Cercospora solani
Fulvia fulva
Pseudocercospora atromarginalis
Pseudocercospora daturina
Pseudocercospora fuligena
Pseudocercospora phyllitidis

Tiliaceae

Paracercosporidium microsorum

Urticaceae

Cercospora flagellaris
Ramularia urticae

Valerianaceae

Ramularia valeriana

Violaceae

Cercospora violae

Vitaceae

Cercospora zebrina
Pseudocercospora vitis
Ramularia hydrangeae-macrophyllae
Ramularia mali
Sultanimyces vitiphyllus

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