|  |  |
| --- | --- |
| Logo AGES | |
| Black spot of strawberry | |
|  |  |
| 30.04.2025 08:19 Uhr | |

**Black
spot
of
strawberry**

**Colletotrichum
acutatum**

Last
change:
05.09.2024

**Profile**

Anthracnose
of
strawberry
is
caused
by
a
fungus.
It
causes
brown
spots
on
strawberries
and
thus
can
cause
significant
damage
due
to
crop
loss.

**Biology**

The
fungus
can
spread
throughout
the
plant,
but
is
found
mainly
in
the
base
of
older
petioles.
In
perennial
stands,
it
overwinters
in
living
or
dead
plant
tissues.
Disease
outbreak
is
favored
by
warm,
high-precipitation
weather
in
spring.
For
spore
germination,
*C.
acutatum*
requires
temperatures
of
at
least
15°C
and
humidity
approaching
100%.
The
fungus
finds
optimal
conditions
at
temperatures
between
22
°C
and
28
°C
and
simultaneous
wetness.
The
longer
periods
of
wetness
persist
at
favorable
temperatures,
the
greater
the
risk
of
serious
yield
losses
due
to
anthracnose.

**Damage
symptoms**



Blattsymptome
von
C.
acutatum

Fruit
symptoms
on
ripe
fruit
are
typical
and
easily
recognizable:
small
circular
brown
spots
that
grow
as
the
disease
progresses,
turning
brown-black
in
dry
weather
and
sinking
deep
into
the
tissue.

*C.
acutatum*
can
also
infect
immature
berries.

If
infection
occurs
on
flowers,
they
do
not
develop
further
but
wither
and
kink.

On
petioles
and
stolons,
elongated,
dark
spots
appear
that
sink
into
the
tissue
and
are
surrounded
by
a
red
auricle.
In
the
advanced
stage,
they
encompass
the
entire
tissue.
Since
the
pathogen
spreads
systemically
in
the
plant,
such
symptoms
on
the
stolons
should
be
watched
out
for,
especially
in
the
production
of
planting
material.

Spore
deposits:
Numerous
light
pink
(salmon-colored)
spore
deposits
form
on
the
surface
of
the
infested
areas
of
fruits,
petioles
and
stolons
under
moist
conditions.

Non-specific
symptoms:
Systemically
infected
plants
may
be
conspicuous
in
the
field
due
to
their
inhibited
growth.

Leaf
symptoms:
Another
symptom
sometimes
observed
is
small
punctate
leaf
spots
(<1mm)
occurring
mainly
along
the
leaf
veins.

**Host
plants**

The
pathogen
occurs
on
a
wide
range
of
host
plants
(at
least
91
genera
in
52
different
plant
families).

Economically,
C.
acutatum
is
most
important
on
strawberries*(Fragaria
ananassa*).
In
addition,
*C.
acutatum*
also
causes
bitter
rot
on
apples,
frequently
attacks
fruit
of
blueberries
and
elderberries,
and
flowers
and
shoots
on
citrus
plants.

**Distribution**

Anthracnose
of
strawberry
was
first
detected
in
Austria
in
1997.

**Propagation
and
transmission**

The
pathogen
is
spread
mainly
through
infected
planting
material,
as
the
fungus
survives
unnoticed
in
it.
The
infection
of
the
plants
is
usually
only
noticed
the
next
year
during
the
first
harvest.

**Economic
importance**

Because
the
fungus
sporulates
rapidly
and
the
spores
are
spread
through
the
field
by
splashing
water,
in
years
with
warm,
wet
weather
during
harvest,
the
damage
from
crop
failure
can
be
significant.

**Prevention
and
control**

* Use
  healthy
  planting
  material.
  *C.
  acutatum*
  can
  be
  relatively
  easily
  isolated
  from
  the
  base
  of
  petioles
  and
  detected
  by
  the
  shape
  and
  size
  of
  spores.
  Examination
  of
  plants
  prior
  to
  planting
  is
  recommended.
* Optimization
  of
  crop
  management:
  to
  reduce
  the
  number
  of
  infection
  periods,
  good
  aeration
  of
  the
  crop
  is
  essential
  (single
  row
  planting
  systems,
  thinning
  and
  weed
  treatment).
  Timely
  straw
  incorporation
  reduces
  the
  spread
  of
  spores
  by
  water
  droplets.
  Furthermore,
  nitrogen
  fertilization
  should
  be
  limited.
  Close
  picking
  intervals
  considerably
  reduce
  the
  risk
  of
  fruit
  infestation.
* Due
  to
  the
  biology
  of
  the
  pathogen,
  plant
  protection
  products
  have
  only
  a
  partial
  effect.
  Their
  use
  must
  be
  in
  combination
  with
  the
  specified
  cultural
  measures
  (see
  [list
  of
  plant
  protection
  products
  approved
  in
  Austria)](https://www.baes.gv.at/zulassung/pflanzenschutzmittel/pflanzenschutzmittelregister/).
* Regular
  control
  for
  symptoms
  and
  removal
  of
  diseased
  plants.
* In
  case
  of
  heavy
  infestation,
  the
  field
  should
  be
  turned
  over.
  Strawberries
  should
  not
  be
  replanted
  for
  two
  years.
* Optimization
  of
  irrigation
  strategy:
  In
  the
  warm
  and
  dry
  growing
  areas
  of
  eastern
  Austria,
  strawberry
  cultivation
  is
  only
  possible
  with
  irrigation.
  Optimal
  in
  terms
  of
  reducing
  the
  risk
  of
  infection
  is
  drip
  irrigation.
  If
  irrigation
  is
  necessary,
  it
  should
  be
  noted
  that
  this
  should
  not
  be
  done
  at
  night
  temperatures
  above
  15
  °C,
  as
  this
  would
  create
  optimal
  infection
  conditions
  for
  the
  fungus.
  In
  practice,
  it
  has
  been
  shown
  that
  by
  switching
  irrigation
  to
  the
  morning
  hours,
  the
  number
  of
  serious
  disease
  outbreaks
  could
  be
  reduced,
  as
  this
  ensures
  faster
  drying
  of
  the
  strawberry
  plants.

**Specialized
information**

**Microbiology**

The
conidia
are
formed
in
the
spore
stores
(so-called
acervuli).
These
are
unseptate,
straight
and
pointed
at
least
at
one
end
(usually
both).
Their
length
varies
between
8
and
16
µm,
the
width
between
2.5
and
4
µm.

*Glomerella
acutata*
occurs
predominantly
in
its
secondary
fruit
form*(Colletotrichum
acutatum*).
In
addition
to
*C.
acutatum*
,
C.
*fragariae*
and
*C.
gloeosporioides*
have
also
been
detected
on
strawberries,
but
these
are
of
secondary
importance
on
strawberries
in
Europe.

**Services**

[Plant
Health
Services](en/plant/plant-health/plant-health-information)