PEA WILT AND PEA ROOT ROTS IN THE HOME GARDEN

Pea wilt and pea root rots are diseases which commonly plague home gardens. Both diseases may be common in the same garden, and even on the same plant. Many times the affected plants die or fail to produce.

**Pea Wilt.** In general, plants infected with wilt disease become yellowed, stunted, and usually wilt. They often die. The roots are generally not rotted unless the plant has died. Pods generally do not form, or if they do, they have few if any seeds. These symptoms usually occur on plants which are several weeks old or more.

Pea wilt disease is caused by the fungus *Fusarium oxysporum f. pisi*. There are several races of this fungus, so there are some small differences in diseased plant symptoms, in addition to those already mentioned, depending on the race which is infecting the plant. These additional symptoms are seen by splitting open the root and stem.

Common wilt (Race 1) causes the core of the lower stem and main root to be yellow to orange. Near wilt (Race 2) causes the core of the lower and middle stem and main root to be brick red. Races 5 and 6 cause the core of the lower and middle stem and main root to be lemon-yellow to light orange.

The pea wilt fungus may be present in just one area of the garden, or may be more generally spread throughout the garden. The fungus infects the plants through the roots, and can survive in the soil for many years, even if peas are not planted. Moving soil or infected plant parts will spread the fungus. Races 1 and 2 of the fungus can also be carried in the seed.

**Root Rots.** Plants with root rots generally appear stunted and yellowed. They may die. The root system is small, and generally black and rotted. Reddish or blackish areas may be present on the roots and lower stem.

Root rots can be caused by several different fungi. One of these fungi is *Fusarium solani f. pisi*. Root rot caused by this fungus has the symptoms just mentioned, but has an additional symptom which can be seen by splitting open the main root and lower stem. When this is done, a red streak is seen in the core and sometimes near the outside surface. The red coloration rarely extends above ground level and is especially noticeable at the point where the seed attaches to the stem underground. The red color is not present in plants rotted by other root rot fungi.

One or several of these fungi may be present in only one area of the garden, or may be throughout the garden. The fungus can survive in the soil for a number of years, even if peas are not planted. As with wilt, the fungi can be spread from one area to another by moving infested soil or infected plant parts.

**Control.** There are no chemicals which can be used in the home garden to control pea wilt or root rots. There are some cultural control measures which will help to control both wilt and root rots.

First, do not plant peas in areas of the garden where these diseases have been a problem. Plant peas in a different area each year, and do not plant in the same area more often than once every three years.

Second, plant in well-drained soil, and give the plants good growing conditions so that they sprout quickly and grow vigorously. Add compost or manure to the soil to help in soil drainage and to stimulate growth of organisms which help control the diseases. Do not overwater the plants, especially on heavier soils. Avoid compacting the soil.

Third, destroy all infected plants, including root systems, when it becomes obvious they will not produce a crop, and destroy all dead plants as soon as noticed. At the end of the growing season, remove any remaining affected plants or plant debris from the garden and destroy it. Plant materials should be destroyed by burning, placing them in the garbage, or taking them to the dump. Do not compost them. The fungus can be spread, and/or can increase its numbers of spores, on plant parts that are not properly disposed of.

Since the fungus lives in the...
soil, moving soil from contaminated (fungus-infested) areas to uncontami­
nated (fungus-free) areas will also spread the disease. Such soil
movement may occur during rototill­
ing or other garden cultivation, and
contaminated soil may also cling to
shovels, boots, etc., and be moved
in that fashion. Thoroughly clean
such items after using them in con-
taminated areas.

With regard to pea wilt only, there are several resistant varieties
(varieties which don’t easily become
diseased) that may be grown suc-
cessfully in garden areas con-
taminated by the fungus. A variety
may be resistant to one race of the
pea wilt fungus, but not to the other
races, so certain varieties are listed
as resistant to certain races. Check
garden catalogs, etc., for varieties
resistant to specific races. Below is
a partial list of resistant varieties:

For Race 1: Wilt resistant—Alaska (WR), WR—Perfection,
WR—Little Marvel. These varieties
should be listed like this in seed
catalogs or on seed packets at
garden supply stores. Do not buy
the variety if wilt resistance or “WR”
is not mentioned, since old forms of
these varieties may not be resistant.
Grant is also resistant.

For Race 2: New Era, New Season.

There are no varieties which
are resistant to root rots.

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Slightly revised October 1991.