

# Two Common Wilts of Vegetables

B. Blanchard, O. A. C., Guelph, Ont.

**T**WO diseases which often cause considerable loss to the gardener are the wilt (sometimes called black rot) of cabbages and other members of cruciferae family, such as cauliflower, kale, brussels sprouts, and the wilts attacking the cucurbits, as instanced in cucumbers, pumpkins, melons and squash. Both of these diseases are caused by bacterial organisms and in most respects are somewhat similar.

In cabbages, the characteristic symptom of the disease is a yellowing of a portion of the leaf. The most common point of entrance for the bacteria is through the water pores at the edge of the leaf, especially through the drops of water which may be seen on the edge of the leaf in the early morning. From these pores the bacteria make their way through the veins, the mid ribs and the stalk, feeding on the plant juices. The tiny tubes which carry these plant juices are technically known as the vascular bundles.

## ACTION OF THE DISEASE

From the vascular bundles the spread of the disease is comparatively slow. The yellowing of the leaves is not caused so much by the presence of the bacteria in the tissues as by the stoppage of the supply of nourishment. It sometimes happens that the leaves become yellowish because of drought. To determine the exact cause of the wilting, if the stem or mid rib of the leaf is cut across just below the yellow portion, the vascular bundles are found to be blackened, appearing as black spots on the cross section, then the disease may be safely said to be caused by the bacteria. A few trials will make even a novice expert in detecting the cause of the trouble.

The blackening of the leaves, from which comes the name "black rot," is not caused by the bacteria but by a fungus which attacks the plant after it has been weakened by the bacteria.

From plant to plant the disease is most commonly spread by caterpillars and other biting insects; also by the cultivator. The bacteria have been known to live in seed from an infected field for eight or nine months. Infection also takes place by handling diseased plants and then healthy ones. To this end the seed may be soaked for fifteen minutes in a one to one thousand solution of corrosive sublimate, a five per cent. solution of formalin or a five per cent. solution of carbolic acid. After handling diseased plants the hands and implements used should be washed in one of these solutions. Young plants showing any signs of the disease should not be planted. All diseased plants should be gathered and burned. Keep insects under control.

Cucumbers grown in the greenhouse

the most susceptible of the cucurbit family to attacks. A whole greenhouse crop will sometimes be destroyed in two or three weeks. The organisms enter the vascular system of the leaves in the same manner as in the cabbage, but the disease spreads much more rapidly through the leaf which becomes dry, dull in color and droops. The presence of the disease can be determined by making a

cross section of the leaf stem or stalk and scraping the end of the stalk. If the plant is infected the plant juices will be found to be slimy and stringy, instead of watery.

The most common means of infection is by the cucumber beetle. These insects therefore should be kept in check. Other control measures are similar to those mentioned for cabbage.

## How to Judge Potatoes

By Prof. F. M. Straight, B. S. A.

**M**OST of us farmers think that we know a good potato when we see it, and we do; but not every one of us can pick out prize winners at one of our exhibitions. In judging potatoes, fancy points are hardly considered. They are examined from the standpoint of utility. Quality and economy are the points kept to the fore. Potatoes excelling in these, win. Some external points, apparently unimportant, are emphasized only because they are indications of the interior quality or economy when prepared for the table.

## SIZE AND SHAPE

Under the heading of external appearance we consider the size. Very large potatoes are as undesirable as very small. Both are classified as unmarketable. Very large potatoes must be cut when prepared for cooking. Even then they do not cook evenly and never present a pleasing appearance. Potatoes ranging from eight to ten ounces in weight are right in size.

Markets demand potatoes slightly oblong in shape, but not drawn out as the black kidney, once so popular. Again there is a reason for this. The percentage of weight is much less with potatoes of this shape than with others. Potatoes with recessed ends with knobs or protuberances, and irregular in shape, are annoying to the housewife, and far from economical when prepared for the table.

## UNIFORMITY THE MAIN FEATURE

Every judge considers uniformity. A plate of potatoes pleases no one if not uniform. The same is true of a barrel. A barrel of potatoes containing ten per cent "away off" in shape and size will throw discredit on the whole package.

In truth color amounts to nothing. A red potato is as good as a white one, and a black one as either. The demand on the various markets changes with the years. On most markets white potatoes take the lead at present, but not because they are really superior. The best farmers have learned that it never pays to quarrel with a customer. They produce and sell what the market demands. They agree with the voice of the market even

when its demands are not backed by reason.

## EVIDENCES OF QUALITY

Netting of the skin is one of the minor external points which speaks of quality within. By netting of the skin we mean that russeted appearance, caused by the rupturing of the outer skin in two or more directions. When skin is smooth and more or less transparent, the potato is usually deficient in starch. It is soggy. The amount of netting varies with varieties, but with a given variety the more russetting the better the quality.

From the standpoint of the household, if potatoes had no eyes so much the better. That being impossible, selection is made from tubers having a comparatively small number. For any purpose, even that of the seedsman, a sufficient number of eyes is always present. The eyes are a nuisance. It is difficult to breed deep eyes out of some varieties; but when best potatoes of any variety are on exhibition, deep eyed specimens are never among the prize winners.

Freedom from blemish and disease scarcely requires discussion. A potato partially peeled is blemished, as it also is if marred with the fork in digging. Scabs and rots disqualify; a scabby potato can never win, or should never win, if it is the only specimen displayed. The internal appearance counts practically for the same as the external. We put the premium on white potatoes, without red or blue streaks. A faint suspicion of blue or yellow when freshly cut is objectionable.

## TEXTURE

"Breaking as short as a pipe stem," is an apt phrase when applied to texture in the best potatoes. Sponginess and coarseness are never associated with good quality. If a very thin section is cut across a potato and held to the light, it will be readily seen that the section readily divides itself into three parts. These are the cortical layer next the skin, an external and an internal medullary area. Each one of these layers is unlike the other in texture, owing to the fact that different percentages of starch are found present in each as here shown: