

Dear Spud GP

I cut open a couple of tubers the other day and found that the inside was brown and soft. What is it and why has it happened?

Patty Brown



ASK THE SPUD GP

Discolouration of the internal tuber tissue is most often a disorder caused by environmental conditions. They have descriptive names such as Blackheart, Internal heat necrosis, Hollow heart, Blackspot and Net necrosis.

Some of these conditions do look similar to symptoms caused by diseases. Moreover, opportunistic microbial infections causing secondary rots in affected tubers can mask the primary cause. This means it is important to review all the field environmental conditions and clinical signs of diseases for an accurate diagnosis.

Here are some common conditions that illustrate similarities between some tuber physiological disorders and diseases.

Contact the spud GP by emailing info@potatolink.com.au



Hollow heart – rapid tuber enlargement, moisture stress; excess nitrogen application; slight deficiency of potassium.

Photo L. Tesoriero



Blackheart is caused by a lack of oxygen, which can occur from waterlogging. It is also associated with temperature extremes and potassium deficiency. It may be followed by soft rot bacterial infection or Pythium Leak if symptoms develop near the stolon end or there are surface wounds.

Photo L. Tesoriero



Net necrosis can be caused by chilling/frost injury to the phloem tissue of the vascular ring in tubers. It can look very similar to damage caused by Potato leaf roll virus or Verticillium wilt.



Bacterial wilt also causes necrosis of vascular tissue in tubers, but is accompanied by white ooze from affected tissue if gently squeezed. Oozing bacteria also appear on the tuber surface from eyes (called milky eye).

Photo L. Tesoriero



Pink rot, caused by *Phytophthora erythrocephala*, forms a dark line at the margin of affected tissue and has a characteristic pink colour.

Photo UNECE



Fusarium dry rot is often a result of damage to the tuber surface. It can occur as a secondary rot in tubers affected by Blackheart, Blackspot or Hollow heart.

Photo PotatoPro.com