

Healthy Plants, HEALTHY HUMANS

Plant health
is **your** health.



Plants are the basis of everything we eat. Without plants there are no fruits, vegetables, grains, or meat (livestock eat plants). Plant pathogens and pests cause between **10 and 40% crop loss** in major food crops. Without healthy plants, humans don't have healthy foods to eat.



Some plant products, like chocolate, contain high amounts of flavonoids. **Flavonoids are plant chemicals** that have been shown to improve learning and memory and may help prevent and treat brain disorders.



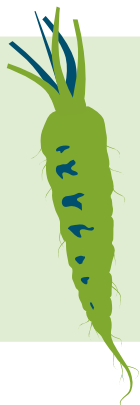
Plant Pathologists Help Keep Plants Healthy

- Plant pathologists help prevent crop loss by finding better methods to combat current diseases and discovering control measures for new diseases.
- Plant pathologists at universities, private companies, and other organizations work with farmers to apply the best management practices.
- For example:
 - Oat crown rust is a damaging disease of oat that can cause 10–40% losses when it occurs.
 - Plant pathologists at the USDA-ARS Cereal Disease Lab monitor rust epidemics in cereals and work with growers to use varieties that can resist the disease.



The key ingredient in aspirin, salicylic acid, was discovered when scientists investigated the pain-relieving properties of the willow tree. Aspirin acts on the hormone system to relieve pain. It may also reduce the risk of heart attacks and some cancers. This is just one example of **important medicines** that have been discovered in plants.

Iron is a mineral needed for proper functioning of red blood cells in carrying oxygen. Some plant-based foods, like spinach and beans, are **high in iron** and are an important source for vegetarians.



Some fruits and vegetables, like carrots, pumpkins, and sweet potatoes, are a good **source of vitamin A**. Vitamin A is important for healthy eyesight as well as proper immune and digestive system function. Vitamin A is just one example of how eating a diet of diverse fruits and vegetables keeps you healthy.

Beta glucans found in oats can help reduce cholesterol and may also lower blood pressure for **better heart health**.



Sources: Data from Savary et al., 2019 (www.nature.com/articles/s41559-018-0793-y); Bakoyiannis et al., 2018 (www.sciencedirect.com/science/article/pii/S0753332218346845); Drugs.com (www.drugs.com/monograph/quinine-sulfate.html); Leonard, 2018 (www.medicalnewstoday.com/articles/323902.php); Rothwell et al., 2011 ([www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(10\)62110-1.pdf](http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(10)62110-1.pdf)); Steering Committee of the Physicians' Health Study Research Group, 1989 (www.nejm.org/doi/full/10.1056/NEJM198907203210301); Khoury et al., 2012 (<https://new.hindawi.com/journals/jnme/2012/851362/>); Othman et al., 2011 (<https://academic.oup.com/nutritionreviews/article/69/6/299/1815168>); USDA-ARS Cereal Disease Lab (www.ars.usda.gov/midwest-area/stpaul/cereal-disease-lab/docs/cere-al-rusts/oat-crown-rust/).