

Plants can ‘tell time,’ study shows, which could help farmers grow crops in varying environments

Published in the PNAS journal, [Superoxide is promoted by sucrose and affects amplitude of circadian rhythms in the evening](#), details how plants use their metabolism to sense time at dusk and help conserve energy produced from sunlight during the day.

Lead researcher Dr Mike Haydon, from the School of BioSciences, said while plants don’t sleep as humans do, their metabolism is adjusted during the night to conserve energy for the big day ahead of making their own food using energy from sunlight, or photosynthesis.

“Getting the timing of this daily cycle of metabolism right is really important because getting it wrong is detrimental to growth and survival,” Dr Haydon said. “Plants can’t stumble to the fridge in the middle of the night if they get hungry so they have to predict the length of the night so there’s enough energy to last until sunrise; a bit like setting an alarm clock.”

Follow the latest news and policy debates on sustainable agriculture, biomedicine, and other ‘disruptive’ innovations. Subscribe to our newsletter.

[SIGN UP](#)

“As we strive to produce more food for the increasing global population in the face of changing climate, we may need to grow crops in different environments such as different seasons, different latitudes or even in artificial environments like vertical gardens,” Dr Haydon said. “Understanding how plants optimise rhythms of metabolism could be useful information to allow us to fine-tune their circadian clocks to suit these conditions and maximise future yields.”

[Read the original post](#)