# Article information:

Mechanisms of temperature-regulated growth and thermotolerance in crop species - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S1369526621001345>

# Article summary:

1. Global warming and extreme weather events negatively impact crop productivity, with even a single degree Celsius increase in temperature reducing yields by 3.1% to 7.4%.

2. Different crop species and genotypes have varying optimal growth temperatures and heat tolerance, but all have mechanisms to adjust their growth in response to temperature changes, such as thermomorphogenesis.

3. Plant thermotolerance is divided into basal and acquired, with molecular responses including the induction of heat shock transcription factors (HSFs) and heat shock proteins (HSPs), as well as protective proteins that target misfolded proteins in the endoplasmic reticulum through the unfolded protein response (UPR). Recent insights into temperature perception include phytochromes, HSPs, and physical changes in lipid membranes.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

该文章主要探讨了温度对作物生长和耐热性的影响以及相关机制。然而，该文章存在一些潜在的偏见和不足之处。

首先，该文章没有充分考虑到人类活动对气候变化的贡献。虽然文章提到了减少CO2和其他有害排放物的行动可以减缓气候变化，但并没有强调人类活动是导致气候变化的主要原因之一。

其次，该文章过于强调温度升高对作物生产力的负面影响，但并未提及可能存在的积极影响。例如，在某些地区，适度升高的温度可能会促进作物生长和产量。

此外，该文章没有涉及到基因改良等技术在提高作物耐热性方面所起到的重要作用。这种技术已经被广泛应用于农业领域，并且已经取得了显著成果。

最后，该文章可能存在一定程度上的偏袒。例如，在讨论作物受热胁迫时，文章只提到了玉米、水稻和小麦等品种，并未涉及其他重要作物如大豆、棉花等。此外，在讨论温度对作物生长的影响时，文章也没有平等地呈现双方观点。

综上所述，尽管该文章提供了有价值的信息和洞察力，但仍需要更全面、客观地考虑问题，并避免潜在偏见和片面报道。

# Topics for further research:

* Human contribution to climate change
* Positive effects of temperature increase on crop growth
* Role of genetic modification in improving crop heat tolerance
* Inclusion of other important crops in the discussion
* Balanced presentation of both sides of the argument
* Avoidance of potential biases and one-sided reporting

# Report location:

<https://www.fullpicture.app/item/f82097304951b32432a9c5c5f4a95f92>