

Good morning/afternoon my friends

My name is

I would like to talk about **Growth Analysis Based on Degree Days**

by Russelle *et al.*, 1984

1. Rates of most biological processes are affected markedly by temperature
2. Growth and development of whole organisms show a temperature response which results from the integrated effect of temperature on the many individual physiological processes involved.
3. Plant growth and development are certainly affected by factors other than temperature, such as flux and duration of photosynthetically active radiation, availability of nutrients and water, and loss of photosynthetic tissue.
4. Day length plays a well-known, integral part in induction and initiation of flowering in many species
5. Comparisons of growth analysis functions within and among experiments are often confounded by sources of variation other than those imposed by treatment.
6. We suggest use of a temperature index, such as modified growing degree days, as the divisor in growth functions to facilitate treatment comparisons within certain experiments and to reduce the effects of differing temperature regimes among experiments on these comparisons.
7. Three experiments were identified to provide data to analyze this new approach.
8. Mean absolute growth rate and mean relative growth rate were compared in two experiments with maize (*Zea mays* L.) conducted in eastern Nebraska.
9. Previously published values of KCR and mean net assimilation rate θ of barley (*Hordeum vulgare* L.) grown under controlled environments in a soil temperature and P fertility study were also evaluated.
10. Use of modified growing degree days, rather than days, as the divisor in these growth functions led to the recognition of physiological differences due to or associated with treatment, which were previously masked by normal crop response to temperature, and clarified other treatment differences by reducing the effect of temperature.

How to mark

Example	Number of lines (N)	Fluency (F)	Pronunciation (P)	Clearness (C)	Average $A=(F+P+C)/3$	Mark $(N*A)/10$
1.	10	100	100	100	100	100
2.	8	100	100	100	100	80
3.	8	80	80	80	80	64