"Current Comments"

Highly Cited Articles from Plant Physiology Journals

January 20, 1975 Number 3

Recently we listed the most important botany journals[1]. To supplement this information we have compiled a list of highly cited botanical articles. We will publish it in two parts of roughly equal length. In this issue we've listed articles published in five plant physiology journals. In the next issue we will list articles published in other journals.

In compiling previous lists of highly cited articles, we scanned the *Science Citation Index®* (*SCI®*) data base for all highly cited articles published in journals identified with a particular specialty. We were aware that many articles had been published in other journals—especially multidisciplinary journals like *Nature*, *Science*, etc.

We have now developed a procedure for identifying such articles. It will be described in the next issue when we publish the list of 101 botanical articles from such journals.

In the listing that follows there are 90 articles from plant physiology journals. *Plant Physiology* accounts for 42; *Annual Review of Plant Physiology* for 28; *Planta* for 9, *Physiologia Plantarum* for 8; and *Zeitschrift fuer Pflanzenphysiologie* for 2.

One article (item 31) by Evans *et al.* was published in a *Proceedings of the Annual Meeting of Plant Physiologists, 1964*. Considering the frequency of citation of this paper, it is amazing how difficult it was to obtain complete bibliographical information about it. We have not yet been successful in obtaining a copy, even after consulting many excellent libraries in the Philadelphia area, as well as the National Agricultural Library. You could help if a copy is available in your reprint file.

The listing of articles is chronological. Within each year the articles are alphabetical by first author. Arnon's 1949 paper on copper enzymes in chloroplasts is the oldest. It also happens, by a wide margin, to be the most cited. Only seven papers were published in the 1950s. All but two of the remaining 83 were published in the 60s. One might have expected botany to turn up a much older group of citation superstars. However, the list provides a general idea of botanical research emphasis during the past decade. The chloroplast, plant hormones, enzymes, and microstructure seem to predominate.

1. Garfield, E. Journal citations studies. 18. Highly cited botany journals. *Current Contents* No. 2, 13 January, 1975, p. 5-9.

Highly Cited Articles from Plant Physiology Journals

	Times Cited 1961–1972	Bibliographical Data
1.	1171	**Arnon D I.** Copper enzymes in isolated chloroplasts; polyphenoloxidase in *Beta vulgaris.* *Plant Physiol.* **24**:1–15, 1949.
2.	71	**Gordon S A & Weber R P.** Colorimetric estimation of indoleacetic acid. *Plant Physiol.* **26**:192–95, 1951.
3.	101	**Epstein E & Hagen C E.** A kinetic study of the absorption of alkali cations by barley roots. *Plant Physiol.* **27**:457–74, 1952.
4.	223	**Nitsch J P & Nitsch D.** Studies on the growth of coleoptile and first internode sections; a new, sensitive, straight-growth test for auxins. *Plant Physiol.* **31**:94–111, 1956.
5.	80	**Ray P M.** Destruction of auxin. *Annu. Rev. Plant Physiol.* **9**:81–118, 1958.
6.	73	**Wickson M & Thimann K V.** The antagonism of auxin and kinetin in apical dominance. *Physiol. Plant.* **11**:62–74, 1958.
7.	98	**Krogmann D W, Jagendorf A T & Avron M.** Uncouplers of spinach chloroplast photosynthetic phosphorylation. *Plant Physiol.* **34**:272–77, 1959.
8.	69	**Stocking C R.** Chloroplast isolation in nonaqueous media. *Plant Physiol.* **34**:56–61, 1959.
9.	95	**Hageman R H & Flesher D.** Nitrate reductase activity in corn seedlings as affected by light and nutrient media. *Plant Physiol.* **35**:700–08, 1960.
10.	68	**Neish A C.** Biosynthetic pathways of aromatic compounds. *Annu. Rev. Plant Physiol.* **11**:55–80, 1960.
11.	116	**Paleg L G.** Physiologic effects of gibberellic acid. I. On carbohydrate metabolism and amylase activity of barley endosperm. *Plant Physiol.* **35**:293–99, 1960.
12.	68	**Zimmerman M H.** Transport in the phloem. *Annu. Rev. Plant Physiol.* **11**:167–90, 1960.
13.	71	**Epstein E.** The essential role of calcium in selective cation transport by plant cells. *Plant Physiol.* **36**:437–44, 1961.
14.	115	**Burg S P.** The physiology of ethylene formation. *Annu. Rev. Plant Physiol.* **13**:265–302, 1962.
15.	98	**Dainty J.** Ion transport and electrical potentials in plant cells. *Annu. Rev. Plant Physiol.* **13**:379–402, 1962.
16.	52	**Goldsmith M H M & Thimann K V.** Some characteristics of movement of indoleacetic acid in coleoptiles of *Avena.* I. Uptake, destruction, immobilization, and distribution of IAA during basipetal translocation. *Plant Physiol.* **37**:492–505, 1962.
17.	75	**Koller D, Mayer A M, Poljakoff-Mayber A & Klein S.** Seed germination. *Annu. Rev. Plant Physiol.* **13**:437–64, 1962.
18.	68	**Menke W.** Structure and chemistry of plastids. *Annu. Rev. Plant Physiol.* **13**:27–44, 1962.
19.	56	**Mohr H.** Primary effects of light on growth. *Annu. Rev. Plant Physiol.* **13**:465–88, 1962.
20.	431	**Murashige T & Skoog F.** A revised medium for rapid growth and bio-assays with tobacco tissue cultures. *Physiol. Plant.* **15**:473–97, 1962.

21. 188 **Osborne D J.** Effect of kinetin on protein and nucleic acid metabolism in *Xanthium* leaves during senescence.
Plant Physiol. **37**:595–602, 1962.

22. 67 **Bjorkman O & Holmgren P.** Adaptability of the photosynthetic apparatus to light intensity in ecotypes from exposed and shaded habitats.
Physiol. Plant. **16**:889–914, 1963.

23. 60 **Butler W L, Lane H C & Siegelman H W.** Nonphotochemical transformations of phytochrome in vivo.
Plant Physiol. **38**:514–19, 1963.

24. 64 **Haemmerling J.** Nucleo-cytoplasmic interactions in acetabularia and other cells.
Annu. Rev. Plant Physiol. **14**:65–92, 1963.

25. 64 **Halevy A H.** Interaction of growth-retarding compounds and gibberellin on indoleacetic acid oxidase and peroxidase of cucumber seedlings.
Plant Physiol. **38**:731–37, 1963.

26. 55 **Heber U, Pon N G & Heber M.** Localization of carboxydismutase and triosephosphate dehydrogenases in chloroplasts.
Plant Physiol. **38**:355–60, 1963.

27. 61 **Wiskich J T & Bonner W D Jr.** Preparation and properties of sweet potato mitochondria.
Plant Physiol. **38**:594–604, 1963.

28. 107 **Abeles F B & Rubinstein B.** Regulation of ethylene evolution and leaf abscission by auxin.
Plant Physiol. **39**:963–69, 1964.

29. 89 **Benson A A.** Plant membrane lipids.
Annu. Rev. Plant Physiol. **15**:1–16, 1964.

30. 180 **Cathey H M.** Physiology of growth retarding chemicals.
Annu. Rev. Plant Physiol. **15**:271–302, 1964.

31. 61 **Evans H J, Clark R B & Russel S A.** The role univalent cations in yeast acetic thiokinase reaction.
Proc. Mtg. Plant Physiol. Colorado 1964.

32. 60 **Kende H & Lang A.** Gibberellins and light inhibition of stem growth in peas.
Plant Physiol. **39**:435–40, 1964.

33. 106 **Key J L & Shannon J C.** Enhancement by auxin of ribonucleic acid synthesis in excised soybean hypocotyl tissue.
Plant Physiol. **39**:360–64, 1964.

34. 148 **Key J L.** Ribonucleic acid and protein synthesis as essential processes for cell elongation.
Plant Physiol. **39**:365–70, 1964.

35. 58 **Margulies M M.** Effect of chloramphenicol on light-dependent synthesis of proteins and enzymes of leaves of chloroplasts of *Phaseolus vulgaris.*
Plant Physiol. **39**:579–85, 1964.

36. 101 **Ninnemann H, Zeevaart J A D, Kende H & Lang A.** The plant growth retardant CCC as inhibitor of gibberellin biosynthesis in *Fusarium moniliforme.*
Planta **61**:229–35, 1964.

37. 58 **Roychoudhury R & Sen S P.** Studies on the mechanism of auxin action; auxin regulation of nucleic acid metabolism in pea internodes and coconut milk nuclei.
Physiol. Plant. **17**:352–62, 1964.

38. 120 **Varner J E.** Gibberellic acid controlled synthesis of alpha-amylase in barley endosperm.
Plant Physiol. **39**:413–15, 1964.

39. 51 **Vegis A.** Dormancy in higher plants.
Annu. Rev. Plant Physiol. **15**:185–224, 1964.

40. 96 **Dennis D T, Upper C D & West C A.** An enzymatic site of inhibition of gibberellin biosynthesis by AMO 1618 and other plant growth retardants.
Plant Physiol. **40**:948–52, 1965.

41. 54 **Holmgren P, Jarvis P G & Jarvis M S.** Resistances to carbon dioxide and water vapour transfer in leaves of different plant species.
Physiol. Plant. **18**:557–73, 1965.

42. 71 **Kortschak H P, Hartt C E & Burr G O.** Carbon dioxide fixation in sugarcane leaves.
Plant Physiol. **40**:209–13, 1965.

43. 186 **Linsmaier E M & Skoog F.** Organic growth factor requirements of tobacco tissue cultures.
Physiol. Plant. **18**:100–27, 1965.

44. 111 **Muhlethaler K, Moor H & Szarkowski J W.** The ultrastructure of the chloroplast lamellae.
Planta **67**:305–23, 1965.

45. 64 **Nooden L D & Thimann K V.** Inhibition of protein synthesis and of auxin-induced growth by chloramphenicol.
Plant Physiol. **40**:193–201, 1965.

46. 78 **Paleg L G.** Physiological effects of gibberellins.
Annu. Rev. Plant Physiol. **16**:291–322, 1965.

47. 68 **Zucker M.** Induction of phenylalanine deaminase by light and its relation to chlorogenic acid synthesis in potato tuber tissue.
Plant Physiol. **40**:779–84, 1965.

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Physiol. Plant. **19**:618–33, 1966.

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Annu. Rev. Plant Physiol. **17**:47–76, 1966.

50. 103 **Forrester M L, Krotkov G & Nelson C D.** Effect of oxygen on photosynthesis, photorespiration and respiration in detached leaves. I. Soybean.
Plant Physiol. **41**:422–27, 1966.

51. 63 **Hager A & Meyer-Bertenrath T.** Die Isolierung und quantitative Bestimmung der Carotinoide und Chlorophylle von Blaettern, Algen und isolierten Chloroplasten mit Hilfe duennschichtchromatographischer Methoden [Isolation and quantitative analysis of carotinoids and chlorophylls of leaves, algae and isolated chloroplasts using thin-layer chromatography].
Planta **69**:198–217, 1966.

52. 148 **Key J L.** Effect of purine and pyrimidine analogues on growth and RNA metabolism in the soybean hypocotyl; the selective action of 5-fluorouracil.
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Planta **78**:200–07, 1968.

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