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Characteristics of cassava literature



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At the present stage of development of research on cassava we feel it is of value to present a general overview of the trends that have characterized the production of literature on this crop over the years (1831-1980)

Cassava like other tropical root crops was long considered a subsistence crop and thus received little attention from researchers until recently (the 70s) when it was recognized as a highly efficient producer of carbohydrates. To date the Cassava Information Center has identified some 5000 articles of which 4200 have been abstracted. Although the present study was based on the total number of documents produced in 150 years only certain decades characteristic of the general trends have been presented in the graphic illustrations.

In the first place the different types of publications were identified (Fig 1) for this purpose they were divided as follows: (1) periodicals (2) books (3) conference proceedings where the papers presented are published either in book form or mimeographed (4) pamphlets including serial monographs and material longer than 30 pages (5) patents and (6) theses including BS, MS and PhD.

It can be seen that the greatest percentage (49%) corresponds to periodicals, which is lower than the normal for the publication of scientific information (± 80). It was however surprising to note the number of papers published in pamphlet form (21.5%) and presented at conferences (16%) especially in the decade of the 70s.

In Table 1 the wide dispersal of literature in periodicals is shown; one can see that the total number of papers is distributed

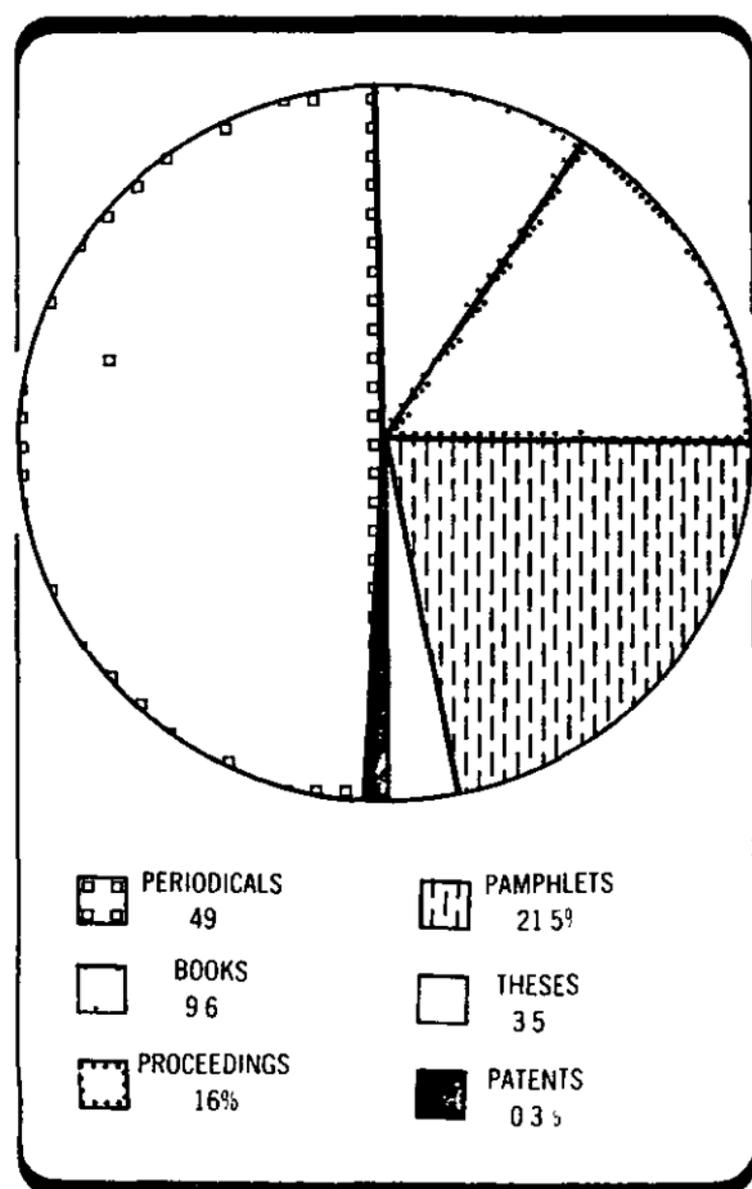


Figure 1 Types of cassava publications

Table 1 Distribution of articles in periodicals

No of articles per title	No of titles	Cumulative no of titles	Total no of articles per title in the group in the 1st column	Cumulative no of articles
> 41	2	2	85	85
36 40	1	3	36	121
31 35		3		121
26 30	1	4	26	147
21 25	3	7	66	213
16 20	14	21	246	459
10 15	21	42	267	726
9	11	53	99	825
8	8	61	64	889
7	16	77	112	1001
6	21	98	126	1127
5	27	125	135	1262
4	34	159	136	1398
3	69	228	207	1605
2	139	367	278	1863
1	525	892	525	2408

among 892 titles Figure 2 shows that only 120 contain 50% of the articles 75% of the articles are from 335 titles and 90% from 670

A list of periodicals that have contributed with more than 10 articles is presented in Table 2 It should be pointed out that all the publications have been included not as Lawani (2) did when he reduced the sampling to articles published in Tropical Abstracts (now Abstracts on Tropical Agriculture) during a four year period If a more complete sampling had been used there would have been a tendency to lower the ranking of the most recent publications in comparison to the older ones as can be observed in the case of *Bragantia* which produced the most articles (43) but over a period of 34 years or 1.2 articles/yr In contrast the *Journal of Root Crops* produced 9 articles/yr (36 articles in 4 years) Thus it is evident that *Bragantia* should have a lower ranking

The production of literature by discipline is analyzed in Table 3 To facilitate this comparison data were taken only from the decade of the 60s and 70s since the production trend was similar to that of previous periods Note that the data corresponding to the decade of the 70s were grouped in order of productivity — agronomy nutrition (human and animal) and industrialization occupying the first three places We consider this situation normal since throughout the years these have been the disciplines in which literature production has been the highest and most stable These results are comparable to those registered by Nestel (4) who indicated these disciplines as the most productive in a study conducted on the increase of cassava literature based on a sample of 194 references

In general production was 2.8 times higher in the 70s (2131 articles) than in the decade of the 60s (748)

On the other hand one can observe that areas such as Economics and Development Pathology Physiology Genetics

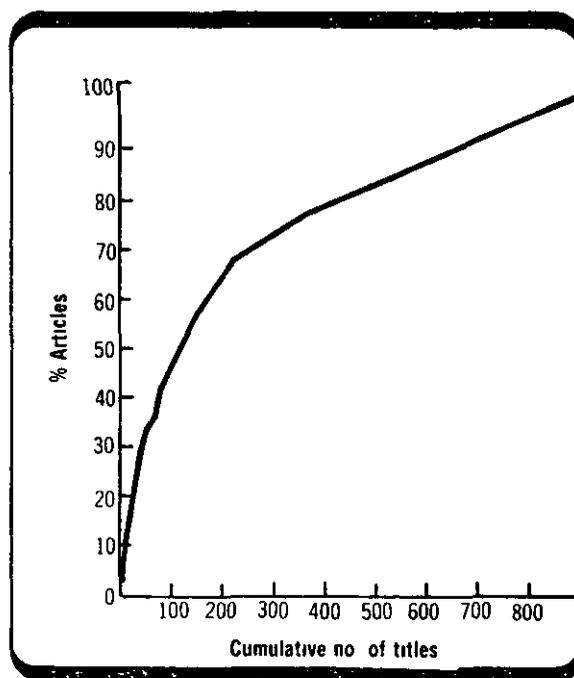


Figure 2 Percentage distribution

Table 2 Periodical in decreasing order of productivity (more than 10 articles)

Publication	No of art cles	Period covered	Art cles/ year
BRAGANTIA (BRAZIL)	43	41 75	1 22
TROPICAL ROOT AND TUBER CROPS NEWSLETTER (PUERTO RICO)	42	69 76	5 25
JOURNAL OF ROOT CROPS (INDIA)	36	75 78	9 00
BIOLOGICO (BRAZIL)	26	37 77	0 63
FOOD SIENCE	24	56 73	1 33
CHACARAS E QUINTAES (BRAZIL)	21	15 66	0 40
PHILIPPINE AGRICULTURIST	21	21 75	0 38
EXPERIMENTAL AGRICULTURE (UK)	20	53 77	0 80
TURRIALBA (COSTA RICA)	20	51 77	0 74
ECONOMIC BOTANY (USA)	19	47 74	0 67
MADRAS AGRICULTURAL JOURNAL (INDIA)	19	49 77	0 65
MALAYAN AGRICULTURAL JOURNAL (MALAYSIA)	18	22 74	0 33
AGRONOMIE TROPICALE (FRANCE)	17	46 73	0 60
CEREAL CHEMISTRY (USA)	17	41 77	0 45
MALAYSIAN AGRICULTURAL JOURNAL	17	70 76	2 42
REVUE DE BOTANIQUE APPLIQUEE ET D AGRICULTURE TROPICALE (FRANCE)	17	22 52	0 54
TROPICAL AGRICULTURE (TRINIDAD)	17	35 76	0 40
TROPICAL AGRICULTURIST (SRI LANKA)	17	07 51	0 37
REVISTA DE AGRICULTURA (BRAZIL)	16	29 74	0 34
STARKE (GERM FED REP)	16	50 76	0 59
WORLD CROPS (UK)	16	54 76	0 69
BRITISH JOURNAL OF NUTRITION (UK)	15	58 76	0 78
AGRICULTURAL RESEARCH JOURNAL OF KERALA (INDIA)	14	66 75	1 40
AGRONOMICO (BRAZIL)	14	41 71	0 45
BULLETIN AGRICOLE DU CONGO BELGE	14	13 59	0 29
BULLETIN ECONOMIQUE DE MADAGASCAR	14	02 37	0 38
EAST AFRICAN AGRICULTURAL JOURNAL (KENYA)	14	36 58	0 60
NUTRITION REPORTS INTERNATIONAL (USA)	14	71 79	1 55
TROPICAL SCIENCE (UK)	14	61 74	1 00
AGRICULTURA TROPICAL (COLOMBIA)	13	46 69	0 54
CIENCIA E CULTURA (BRAZIL)	13	64 76	1 00
GHANA JOURNAL OF AGRICULTURAL SCIENCE	13	65 75	1 18
JOURNAL OF THE SCIENCE OF FOOD AND AGRICULTURE (UK)	13	61 77	1 82
SCIENCE AND CULTURE (INDIA)	13	47 76	0 43
BULLETIN OF ENTOMOLOGICAL RESEARCH (UK)	12	17 77	0 19
EAST AFRICAN AGRICULTURAL AND FORESTRY JOURNAL (KENYA)	12	45 74	0 40
PHYTOCHEMISTRY (USA)	12	63 76	0 85
COLETANEA DO INSTITUTO DE TECNOLOGIA DE ALIMENTOS (BRAZIL)	11	65 77	0 84
PANS (UK)	11	73 78	1 83
PLANT DISEASE REPORTER (USA)	11	50 78	0 37
AGRONOMIA TROPICAL (VENEZUELA)	10	70 75	1 66
ARQUIVOS DO INSTITUTO BIOLOGICO (BRAZIL)	10	29 67	0 25

Table 3 Literature production per discipline

Discipline	Decade of the 60s		Decade of the 70s	
	Total papers	%	Total papers	%
Agronomy	125	16.7	438	20.6
Nutrition	172	23.0	354	16.6
Industrialization processing & uses	139	18.6	306	14.3
Economics & Development	59	7.9	254	11.9
Pathology	50	6.7	232	10.9
Physiology	63	8.4	201	9.4
Genetics	50	6.7	123	5.8
Entomology	24	3.2	119	5.6
Cropping systems	6	0.8	29	1.4
Botany Taxonomy	18	2.4	29	1.4
Anatomy	13	1.7	9	0.4
General	29	3.9	37	1.7
Total	748	100	2131	100

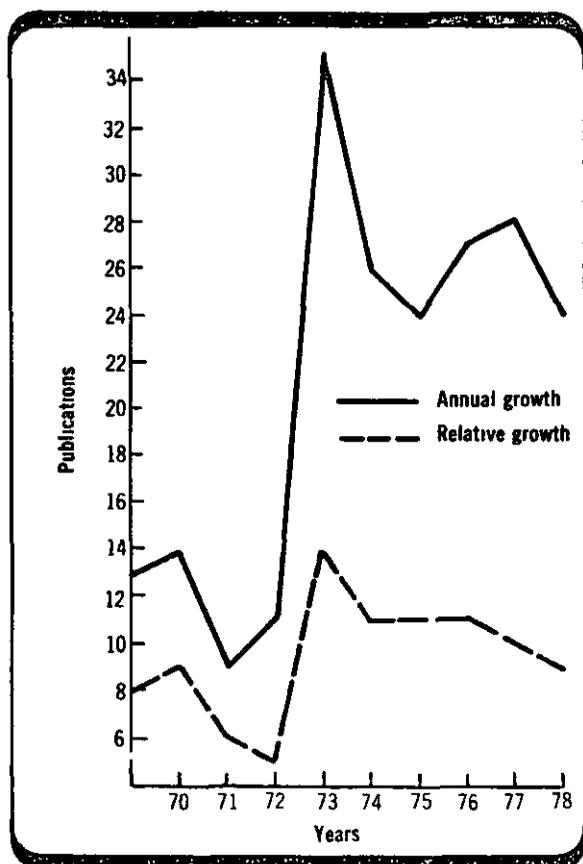


Figure 3 Literature on physiology annual and relative growth

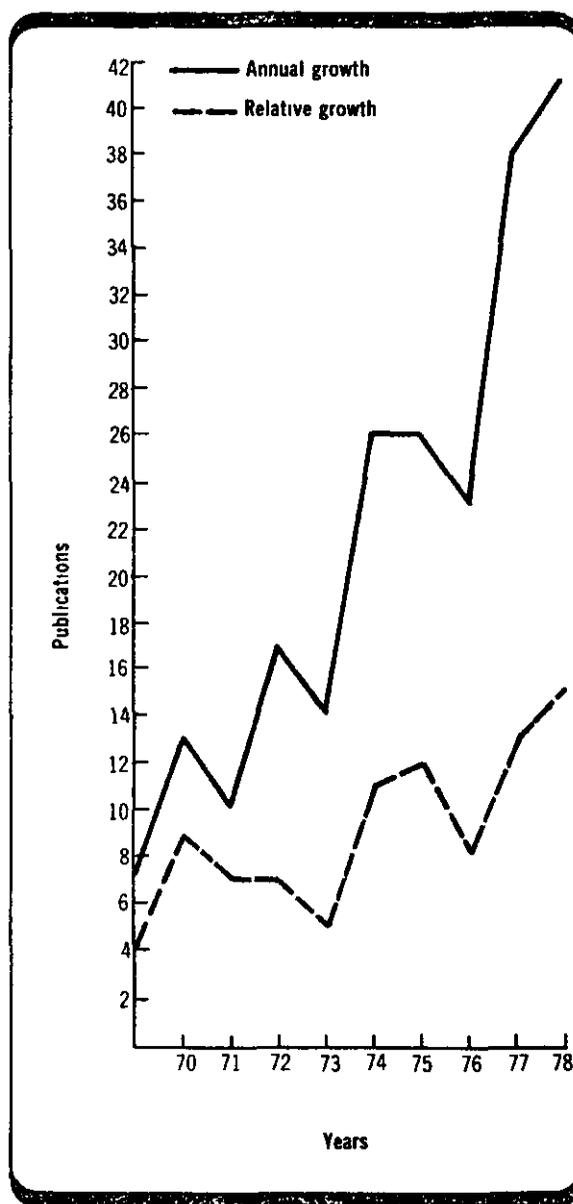


Figure 4 Literature on pathology annual and relative growth

and Entomology which had presented a rather irregular and limited production of literature had very significant increases in the 70s in comparison with the 60s. For example Physiology presented an increase of over 500% in the 70s. Phytopathology, Entomology, Genetics and Cropping Systems (rotation and associations) and Development and Economics over 400%. In figures 3, 5 the absolute and relative annual growth of Physiology, Pathology and Entomology are shown for the 1970-78 period.

Analysis of the languages in which this literature is written (Fig. 6) shows that the largest percentage corresponds to English (46%) followed by Portuguese (21%), Spanish (16%) and French (11%). Other languages include German, Dutch, Italian, Japanese, Czech, Russian, Swedish, Malayan, Hindi, Javanese and Latin.

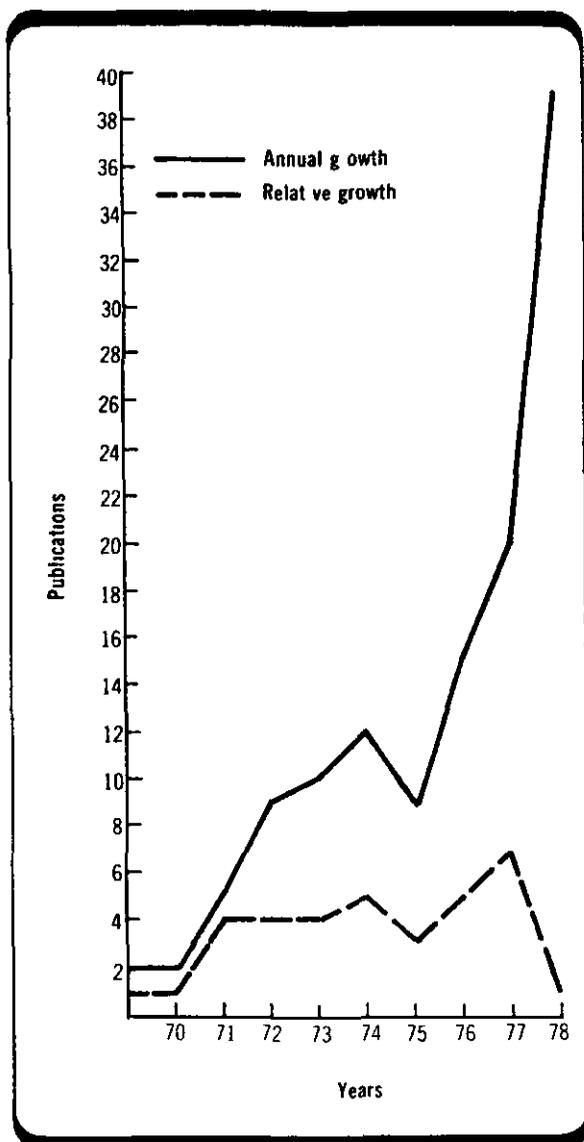


Figure 5 Literature on entomology annual and relative growth

As can be seen intensive research has been only in the last decade previous reports being published very sporadically and in a wide variety of publications and languages. For this reason it is difficult and costly for an institution much less an individual to establish a journal collection that would keep researchers well informed on the crop. The same is true for most other tropical crops. Moreover less than 50% of the literature is found in journal making its recovery much more difficult.

Literature consulted

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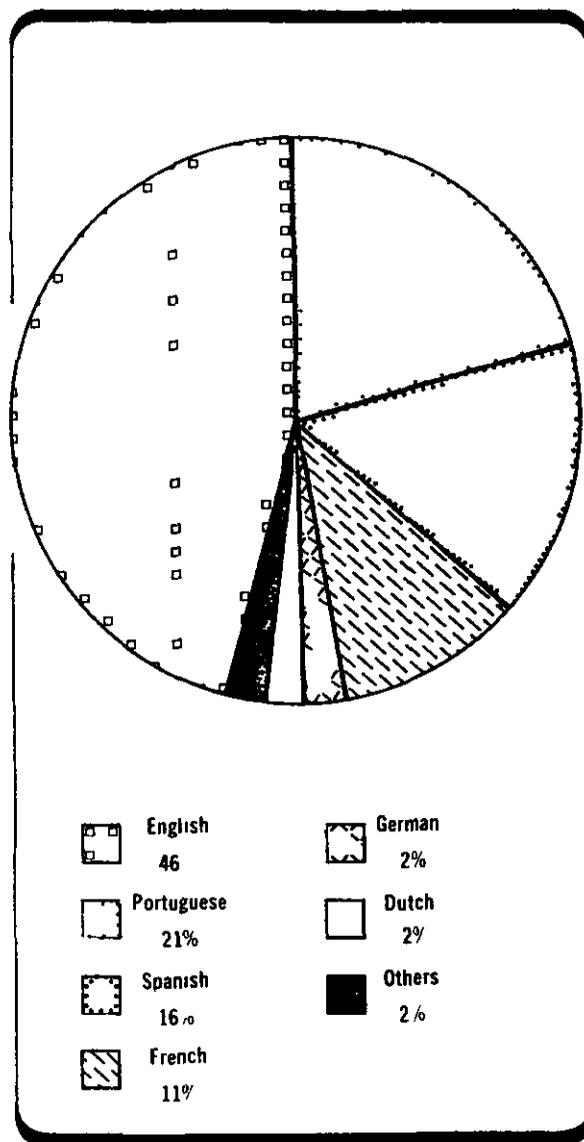


Figure 6 Distribution of articles by language

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