
RESULTS
AND
DISCUSSION...

TABLES...

Table - 1

Distribution of fungi in the four soils

Fungus	Soils			
	A	B	C	D
1) <u>Rhizopus stolonifer</u> (Ehrenb.ex Link) Lind	+	+	+	+
2) <u>Rhizopus oryzae</u> Went & Gerlings	+	+	+	+
3) <u>Rhizopus nodosus</u> Namyslowski	+	+	+	+
4) <u>Mucor hiemalis</u> Wehmer	+	-	-	+
5) <u>Mucor varians</u> Povah	+	+	-	+
6) <u>Thielavia terricola</u> (Gilman & Abbott) Emmons	+	+	+	+
7) <u>Chaetomium globosum</u> Kunze ² Schm.	-	+	+	-
8) <u>Chaetomium spirale</u> Zopf.	-	+	-	-
9) <u>Phoma humicola</u> Gilman & Abbott	+	-	-	+
10) <u>Geotrichum candidum</u> Link ex.Leman	-	-	+	-
11) <u>Trichoderma viride</u> pers .ex Gray	+	+	+	+
12) <u>Aspergillus fumigatus</u> Fresenius	+	+	+	+
13) <u>Aspergillus versicolor</u> (Villemin) Tiraboschi	+	+	+	-
14) <u>Aspergillus flavus</u> Link ex Gray	+	+	+	+
15) <u>Aspergillus terreus</u> Thom	+	-	+	-
16) <u>Aspergillus niger</u> Van Tieghem	+	+	+	+
17) <u>Aspergillus phoenicus</u> (Corda) Thom. & Church	+	+	+	+
18) <u>Aspergillus candidus</u> Link ex Link	+	+	-	+

Fungus	Soils			
	A	B	C	D
19) <u>Penicillium</u> Link I	+	-	+	-
20) <u>Penicillium</u> Link II	-	+	-	+
21) <u>Penicillium</u> Link III	-	+	+	-
22) <u>Penicillium</u> Link IV	+	-	-	+
23) <u>Gliocladium roseum</u> Bain	-	+	-	-
24) <u>Nigrospora sphaerica</u> (Saccardo) Meson	+	-	-	-
25) <u>Humicola grisea</u> Traaen	+	+	+	+
26) <u>Cladosporium cladosporoides</u> (Fres.) de Vries	+	+	+	+
27) <u>Cladosporium oxysporum</u> Berk. & Curt.	+	+	+	+
28) <u>Scytalidium lignicola</u> Pesante	+	+	+	-
29) <u>Curvularia lunata</u> (Walker) Boedijn	+	-	+	-
30) <u>Helminthosporium nodulosum</u> (Berk. & Curt.) Sacc.	+	-	+	-
31) <u>Drechslera halodes</u> (Drech.) Subram. & Jain	+	+	+	-
32) <u>Alternaria fasciculata</u> Cooke & Ellis	+	+	-	-
33) <u>Fusarium oxysporum</u> Schl.	+	+	+	+
34) <u>Fusarium culmorum</u> (W.G.Sm) Sacc.	+	-	-	+
35) <u>Rhizoctonia solani</u> Khun	-	+	-	+
36) <u>Sclerotium rolfsii</u> Saccardo	-	-	+	+
37) White mycelium	-	-	+	-
38) Black mycelium	-	-	+	+

Fungus	Soils			
	A	B	C	D
39) Yellow mycelium	+	-	-	-
40) Green mycelium	+	-	-	-
Total -	30	25	26	23
	=====			

+ = Present.

- = Absent.

Table - 2

Fungal numbers in thousands/gm. of dry soil in four soils
during twelve months.

Months	Fungal number in thousands/gm of dry soil			
	Soil A	Soil B	Soil C	Soil D
1) January 1989	37	30	20	18
2) February	30	24	19	15
3) March	18	16	11	8
4) April	22	20	10	12
5) May	15	13	9	5
6) June	19	18	12	11
7) July	41	34	22	14
8) August	43	37	31	27
9) September	59	40	35	30
10) October	55	41	32	28
11) November	45	38	29	21
12) December 1989	42	24	27	17

Table - 3

Physico-chemical factors in the four soils during twelve months.

Months	Moisture content %				Water holding capacity %				pH			
	Soil A	Soil B	Soil C	Soil D	Soil A	Soil B	Soil C	Soil D	Soil A	Soil B	Soil C	Soil D
1) January 1989	18	22	16	25	55.0	67.6	71.2	76.4	7.4	7.4	7.6	7.5
2) February	16	22	12	15	59.8	72.2	71.6	74.6	8.1	8.2	8.1	7.7
3) March	15	20	25	28	56.2	76.4	69.4	78.2	8.9	8.6	8.6	8.0
4) April	17	19	20	22	60.0	65.0	69.2	74.2	8.4	8.6	8.7	8.3
5) May	15	17	20	18	60.6	66.2	70.4	76.2	8.3	8.5	8.6	8.2
6) June	18	20	23	21	57.4	62.8	67.6	73.0	7.9	8.0	7.8	7.7
7) July	15	18	16	14	52.1	60.3	62.5	70.1	8.0	7.8	8.2	8.1
8) August	16	19	17	15	50.9	58.7	60.3	68.2	8.2	8.3	7.9	7.8
9) September	17	20	18	17	61.4	71.3	59.9	67.7	8.8	8.9	8.7	8.6
10) October	21	18	19	17	60.1	65.2	69.4	74.6	7.6	7.7	7.8	7.9
11) November	22	20	21	18	57.3	63.5	65.1	71.3	7.7	8.1	8.0	7.6
12) December	19	23	20	22	54.7	61.1	68.7	75.5	8.0	7.9	7.7	8.4

Table - 4

Physico-chemical factors in the four soils during twelve months.

Months	Total Nitrogen in mg/100 gm.of soil				Phosphorus in mg/100 gm.of soil				Potassium in mg/100 gm.of soil			
	Soil A	Soil B	Soil C	Soil D	Soil A	Soil B	Soil C	Soil D	Soil A	Soil B	Soil C	Soil D
1) January 1989	177.0	108.5	171.5	97.0	87.1	76.4	80.2	73.7	17.50	13.25	5.71	5.95
2) February	171.0	105.0	130.0	95.0	73.2	69.2	71.1	69.9	13.50	10.50	5.69	5.50
3) March	166.5	101.5	126.0	92.5	71.3	66.5	67.2	69.8	12.00	12.25	5.60	6.25
4) April	135.0	98.0	123.5	89.0	74.9	69.2	69.4	62.1	11.50	11.75	5.58	6.25
5) May	104.0	97.0	101.0	85.5	87.8	71.9	69.9	60.5	12.00	10.75	5.53	5.82
6) June	154.0	107.5	140.0	93.0	68.5	53.1	57.8	49.3	11.00	11.25	5.58	5.78
7) July	191.0	119.0	187.5	101.5	58.4	42.4	32.6	37.4	11.25	11.25	5.54	5.88
8) August	230.0	124.0	227.0	116.0	75.6	72.7	73.9	68.1	11.50	15.84	6.14	5.83
9) September	277.0	195.5	273.5	133.0	88.3	86.9	87.2	77.3	16.50	15.22	6.20	6.41
10) October	197.0	166.0	189.0	121.0	90.7	82.4	83.5	59.9	17.00	15.48	6.91	6.46
11) November	187.5	154.0	179.5	108.0	90.8	72.8	80.3	61.1	16.50	15.53	6.94	5.92
12) December 89	181.0	132.0	167.0	99.0	79.1	71.1	76.4	63.6	16.50	15.53	6.19	5.92

Table - 5

Physico-chemical factors in the four soils during twelve months.

Months	Sodium in mg/100 gm.of soil				Calcium in mg/100 gm.of soil				Magnesium in mg/100 gm.of soil			
	Soil A	Soil B	Soil C	Soil D	Soil A	Soil B	Soil C	Soil D	Soil A	Soil B	Soil C	Soil D
1) January 1989	61.25	50.00	17.50	10.00	30.00	69.50	45.75	33.00	7.25	7.25	12.25	11.00
2) February	40.00	61.25	16.25	11.25	24.00	48.00	42.00	32.25	6.00	6.75	8.75	9.00
3) March	43.75	22.50	10.00	5.00	24.50	42.00	32.75	20.25	5.50	5.25	7.25	6.50
4) April	41.25	27.50	10.00	5.00	22.50	41.50	32.75	22.50	5.00	6.00	7.50	5.75
5) May	22.50	21.25	5.00	3.75	27.25	46.75	36.50	14.25	5.75	9.75	6.00	5.00
6) June	27.50	25.00	7.50	8.75	25.25	34.50	26.25	34.00	5.75	8.50	4.50	4.50
7) July	13.75	17.50	6.00	8.75	21.50	49.50	40.00	33.25	9.75	6.75	4.75	6.75
8) August	25.00	21.25	6.25	9.50	29.75	48.75	49.00	37.50	7.50	7.25	5.00	6.25
9) September	69.85	68.75	7.00	10.00	32.75	51.75	40.25	24.00	9.25	8.50	5.50	9.75
10) October	65.00	62.50	8.00	8.75	33.25	55.75	38.00	26.25	9.25	7.50	9.25	9.25
11) November	81.50	76.25	15.00	7.75	25.75	54.75	37.50	26.50	9.75	7.25	9.75	10.25
12) December	74.85	70.00	17.50	7.75	29.00	80.00	36.75	20.25	6.25	7.25	10.75	10.25

Table - 6

Physico-chemical factors in the four soils during twelve months.

Months	Iron in mg/100 gm.of soil				Manganese in mg/100 gm.of soil			
	Soil A	Soil B	Soil C	Soil D	Soil A	Soil B	Soil C	Soil D
1) January 1989	1.56	1.54	1.63	1.04	0.015	0.015	0.005	0.010
2) February	1.07	1.04	1.06	1.03	0.025	0.020	0.045	0.045
3) March	1.06	1.04	1.63	1.02	0.030	0.025	0.030	0.030
4) April	1.08	1.04	1.06	1.01	0.030	0.030	0.030	0.040
5) May	1.06	1.02	1.20	1.02	0.025	0.040	0.040	0.035
6) June	1.06	1.02	1.42	1.02	0.045	0.045	0.035	0.035
7) July	1.07	1.03	1.34	1.03	0.005	0.010	0.005	0.015
8) August	1.55	1.52	1.92	1.04	0.010	0.005	0.010	0.020
9) September	1.55	1.55	1.76	1.04	0.015	0.005	0.005	0.015
10) October	1.58	1.58	1.79	1.05	0.015	0.010	0.010	0.015
11) November	1.55	1.54	1.81	1.04	0.015	0.010	0.015	0.020
12) December	1.57	1.53	1.84	1.03	0.015	0.005	0.020	0.015

Table - 7

Physico-chemical factors in four soils during twelve months.

Months	Copper in mg/100 gm. of soil				Zinc in mg/100 gm. of soil			
	Soil A	Soil B	Soil C	Soil D	Soil A	Soil B	Soil C	Soil D
1) January 1989	0.040	0.045	0.020	0.030	0.035	0.045	0.025	0.010
2) February	0.045	0.050	0.025	0.030	0.035	0.050	0.030	0.015
3) March	0.045	0.050	0.040	0.040	0.035	0.045	0.035	0.010
4) April	0.050	0.050	0.035	0.065	0.035	0.055	0.035	0.015
5) May	0.055	0.060	0.060	0.065	0.040	0.060	0.045	0.025
6) June	0.050	0.060	0.055	0.055	0.040	0.050	0.045	0.010
7) July	0.050	0.055	0.040	0.040	0.025	0.040	0.045	0.010
8) August	0.050	0.035	0.025	0.030	0.030	0.050	0.030	0.010
9) September	0.050	0.035	0.015	0.025	0.020	0.045	0.030	0.005
10) October	0.045	0.025	0.030	0.040	0.010	0.050	0.040	0.005
11) November	0.045	0.020	0.025	0.030	0.010	0.045	0.035	0.005
12) December 1989	0.050	0.025	0.025	0.040	0.010	0.030	0.035	0.005

Table - 8

Seasonal variation of soil fungi

Fungus	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
1) <u>Rhizopus stolonifer</u> (Ehrenb.ex Link) Lind	++	+	+	+	+	+	+++	++++	++++	++++	+++	+++
2) <u>Rhizopus oryzae</u> Went & Gerlings	++	+	+	-	-	++	+++	++++	++++	+++	++	++
3) <u>Rhizopus nodosus</u> Namyslowski	+	-	-	-	-	++	++	++	+++	++	+	+
4) <u>Mucor hiemalis</u> Wehmer	-	-	-	-	-	+	+	++	++	+	-	-
5) <u>Mucor varians</u> Povah	+	+	-	-	-	++	++	++	+++	+	+	+
6) <u>Thielavia terricola</u> (Gilman & Abbott) Emmons	-	+	-	-	-	-	+	-	+	-	-	-
7) <u>Chaetomium globosum</u> Kunze & Schm.	-	-	+	-	-	-	-	-	+	-	-	-
8) <u>Chaetomium spiral.</u> Zopf.	-	-	-	-	-	-	-	-	-	-	+	-
9) <u>Phoma humicola</u> Gilman & Abbott	-	-	-	-	-	+	-	-	-	-	-	+
10) <u>Geotrichum candidum</u> Link ex Leman	-	-	-	+	-	-	-	-	-	-	-	-
11) <u>Trichoderma viride</u> Pers & Gray	-	-	-	-	-	-	++	-	-	+	-	-

(II)

Fungus	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
12) <u>Aspergillus funigatus</u> Fresenius	++	++	++	++++	+++	+++	++	+	+	++	+	+
13) <u>Aspergillus versicolor</u> (Villemain) Tiraboschi	-	-	+	+	++	-	-	-	+	+	-	-
14) <u>Aspergillus flavus</u> Link ex Gray	+++	+	+	+	-	-	-	-	-	-	+	-
15) <u>Aspergillus terreus</u> Thom	-	-	+	+	-	-	-	-	-	-	-	+
16) <u>Aspergillus niger</u> Van Tieghem	+++	+++	+++	+++	+++	+++	++	++	++	+++	++	+
17) <u>Aspergillus phoenicus</u> (Corda) Thom & Church	+	+	+	++	+	++	+	+	+	+	+	+
18) <u>Aspergillus candidus</u> Link ex Link	++	+	+	+	+	++	++	+	+	+	+	+
19) <u>Penicillium</u> Link I	+	-	-	-	-	-	-	++	-	+	-	-
20) <u>Penicillium</u> Link II	-	-	-	-	+	+	-	+	-	++	-	-
21) <u>Penicillium</u> Link III	-	-	-	-	-	-	+	+	-	-	-	-
22) <u>Penicillium</u> Link IV	+	-	-	-	-	-	-	-	-	-	-	-

(III)

Fungus	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
23) <u>Gliocladium roseum</u> Bain	+	-	-	-	-	-	-	-	-	-	+	-
24) <u>Nigrospora sphaerica</u> (Sacc.) Mason	-	+	-	-	-	-	-	-	+	-	-	+
25) <u>Humicola grisea</u> Traaen	-	-	-	-	-	-	-	-	-	-	+	-
26) <u>Cladosporium</u> <u>cladosporioides</u> (Fres.) de Vries	+++	++	+	++	+	++	++	+++	++++	+++	++++	+++
27) <u>Cladosporium oxysporum</u> Berk & Curt.	+++	+++	+	+	+	++	+++	+++	++++	++++	++	++
28) <u>Scytalidium lignicola</u> Pesante	+	+	-	-	-	-	+	-	-	-	-	-
29) <u>Curvularia lunata</u> (Walker) Boedijn	+	-	-	-	-	+	-	+	-	-	+	-
30) <u>Helminthosporium</u> <u>nodulosum</u> (Berk. & Curt.) Sacc.	-	-	-	-	-	-	-	+	-	+	-	-
31) <u>Drechslera halodes</u> (Drech.) Subram & Jain	-	-	-	-	-	-	+	-	-	+	-	+

(IV)

Fungus	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
32) <u>Alternaria fasciculata</u> Cooke & Ellis	+	-	-	-	-	-	-	-	-	+	-	-
33) <u>Fusarium oxysporum</u> Schl.	-	-	-	+	-	+	+	+	-	-	-	-
34) <u>Fusarium culmorum</u> (W.G.Sm) Sacc.	-	-	-	-	+	+	+	+	-	-	-	-
35) <u>Rhizoctonia solani</u> Khun	-	-	-	-	-	-	++	-	-	+	-	-
36) <u>Sclerotium rolfsii</u> Sacc.	+	-	-	-	-	-	+	-	+	-	-	+
37) White mycelium	+	+	+	+	+	+	+	+	++	+	+	++
38) Black mycelium	-	+	-	-	++	++	-	-	+	++	-	-
39) Yellow mycelium	-	-	-	-	-	-	+	-	+	-	-	-
40) Green mycelium	-	-	-	-	+	-	+	-	-	-	-	+

Maximum = +++

Medium = +++

Least = ++

Rate = +

Absent = -

FIGURES . . .



FIGURES

- Fig. 1 : Histograms showing fungal numbers in thousands/
gm. of dry soil in the four soils during
twelve months.
- Fig. 2 : Histograms showing moisture % in the four
soils during twelve months.
- Fig. 3 : Histograms showing water holding capacity
in the four soils during twelve months.
- Fig. 4 : Histograms showing P^H in the four soils
during twelve months.
- Fig. 5 : Histograms showing total nitrogen in
mg/100 gm. of soil in the four soils
during twelve months.
- Fig. 6 : Histograms showing available phosphorus in
mg/100 gm. of soil in the four soils during
twelve months.
- Fig. 7 : Histograms showing exchangeable potassium
in mg/100 gm. of soil in the four soils
during twelve months

Fig. 8 : Histograms showing exchangeable sodium in mg/100 gm. of soil in the four soils during twelve months.

Fig. 9 : Histograms showing exchangeable calcium in mg/100 gm of soil in the four soils during twelve months.

Fig. 10 : Histograms showing exchangeable magnesium in mg/100 gm. of soil in the four soils during twelve months.

Fig. 11 : Histograms showing exchangeable iron in mg/100 gm. of soil in the four soils during twelve months.

Fig. 12 : Histograms showing exchangeable manganese in mg/100 gm. of soil in the four soils during twelve months.

Fig. 13 : Histograms showing copper in mg/100 gm of soil in the four soils during twelve months.

Fig. 14 : Histograms showing zinc in mg/100 gm. of soil in the four soils during twelve months.

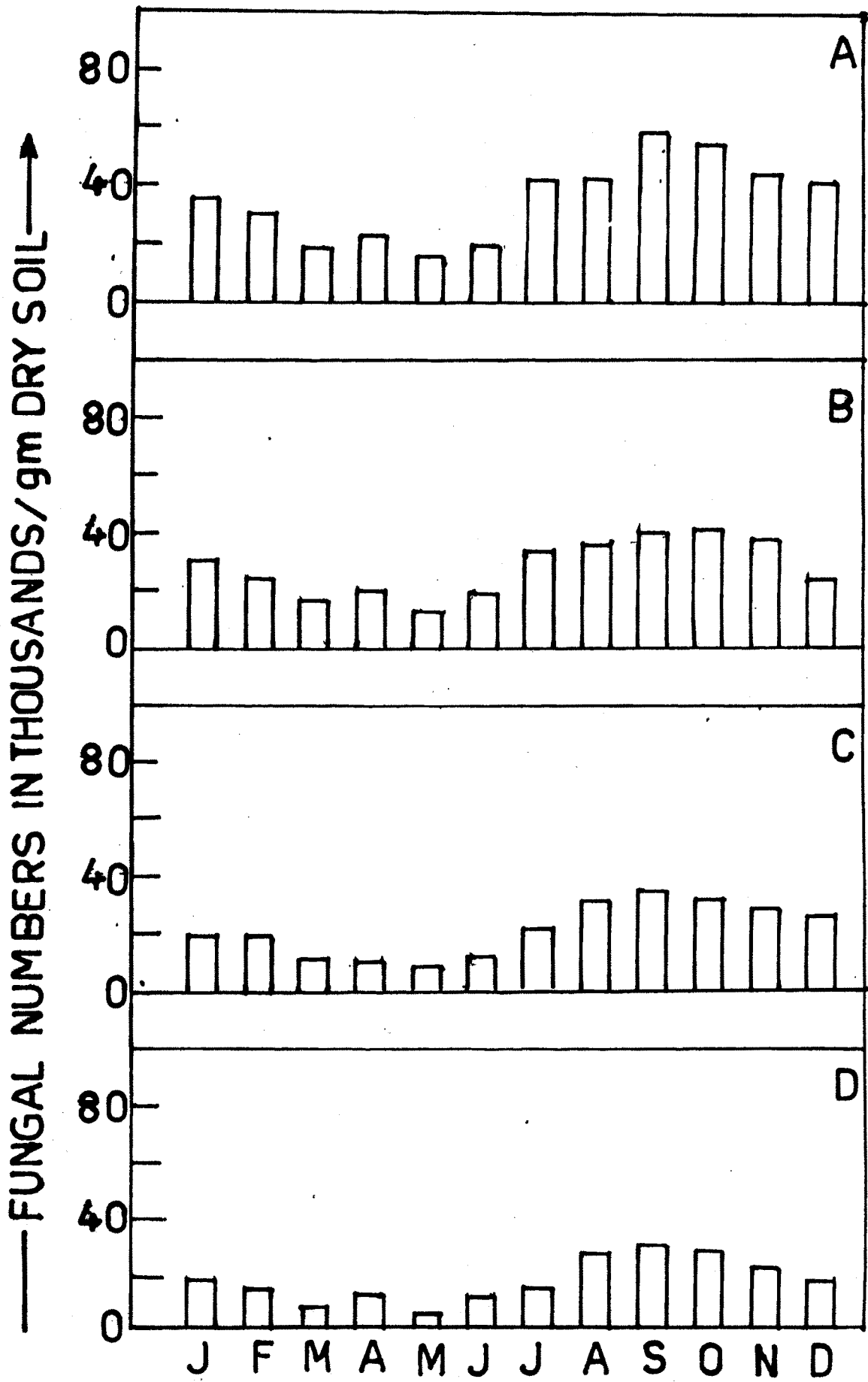


FIG.1

9902

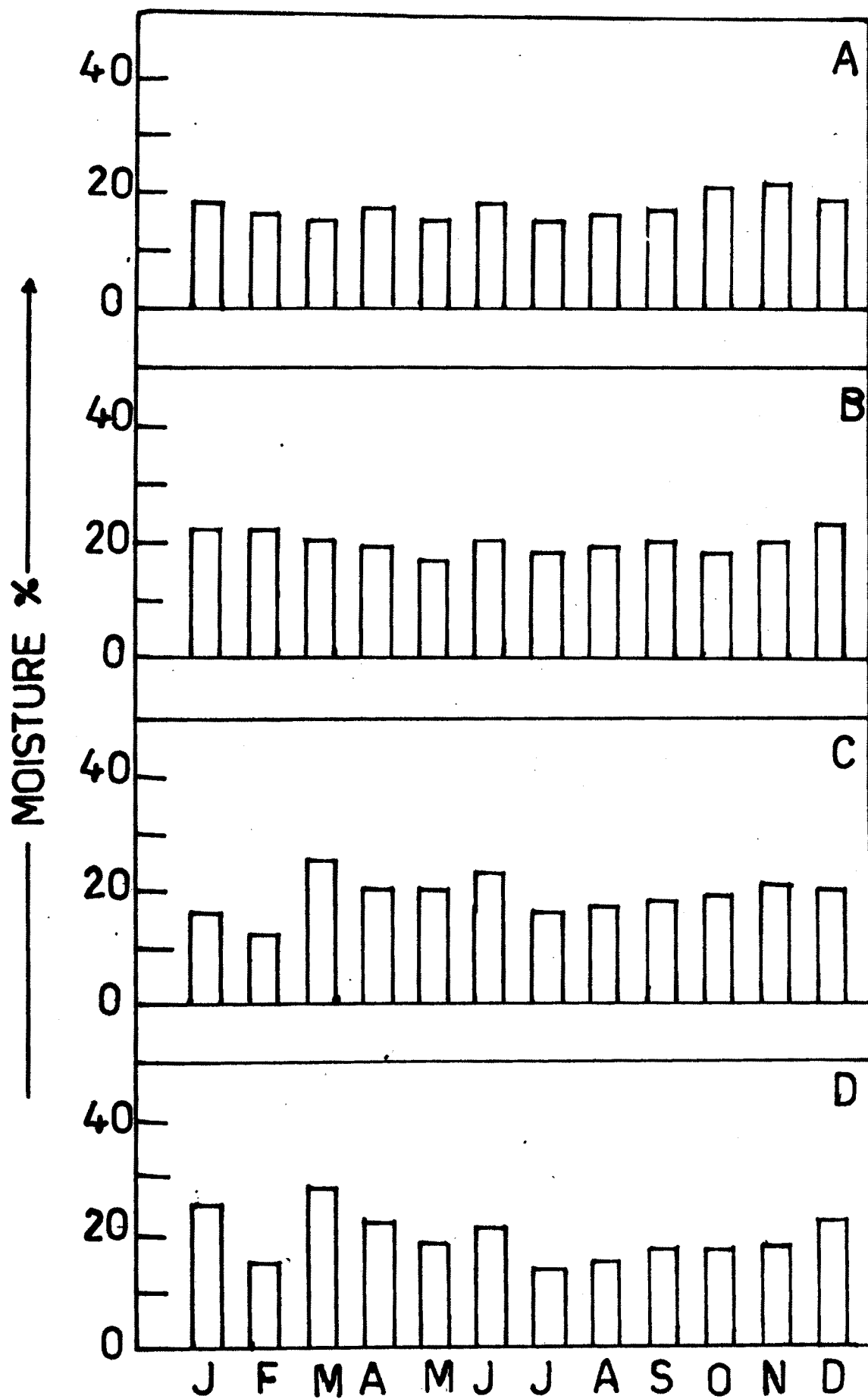


FIG. 2

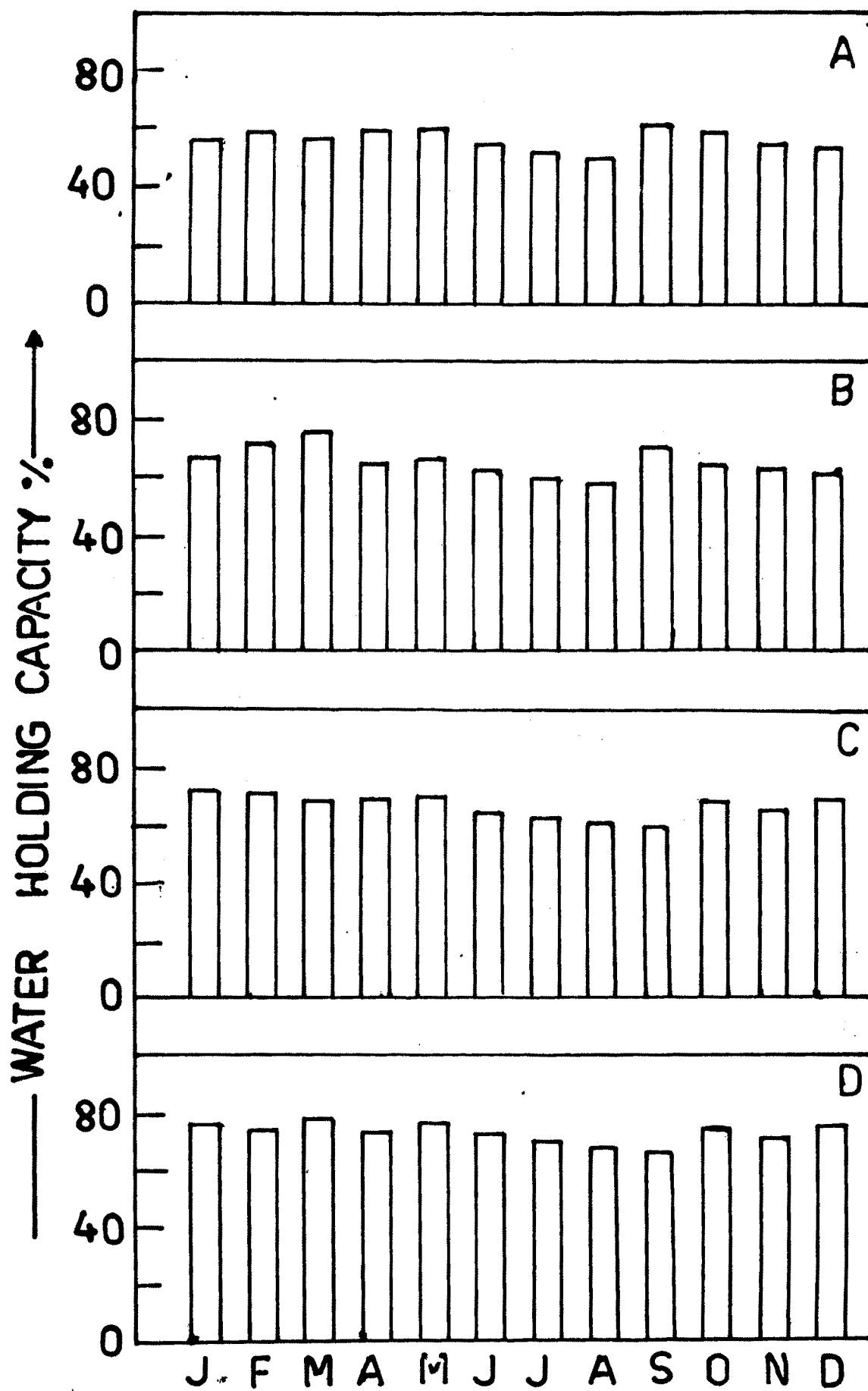


FIG 2

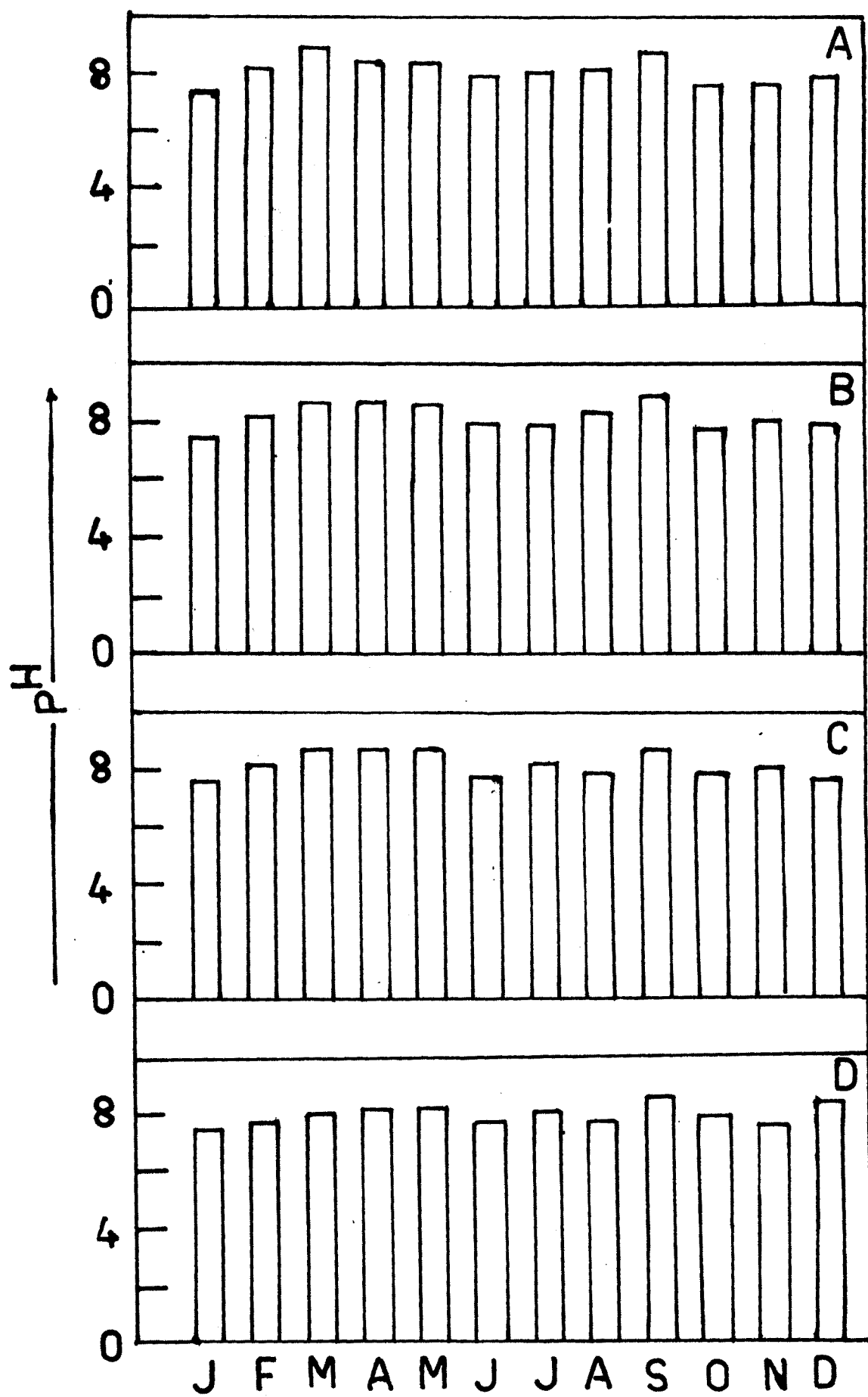


FIG.4

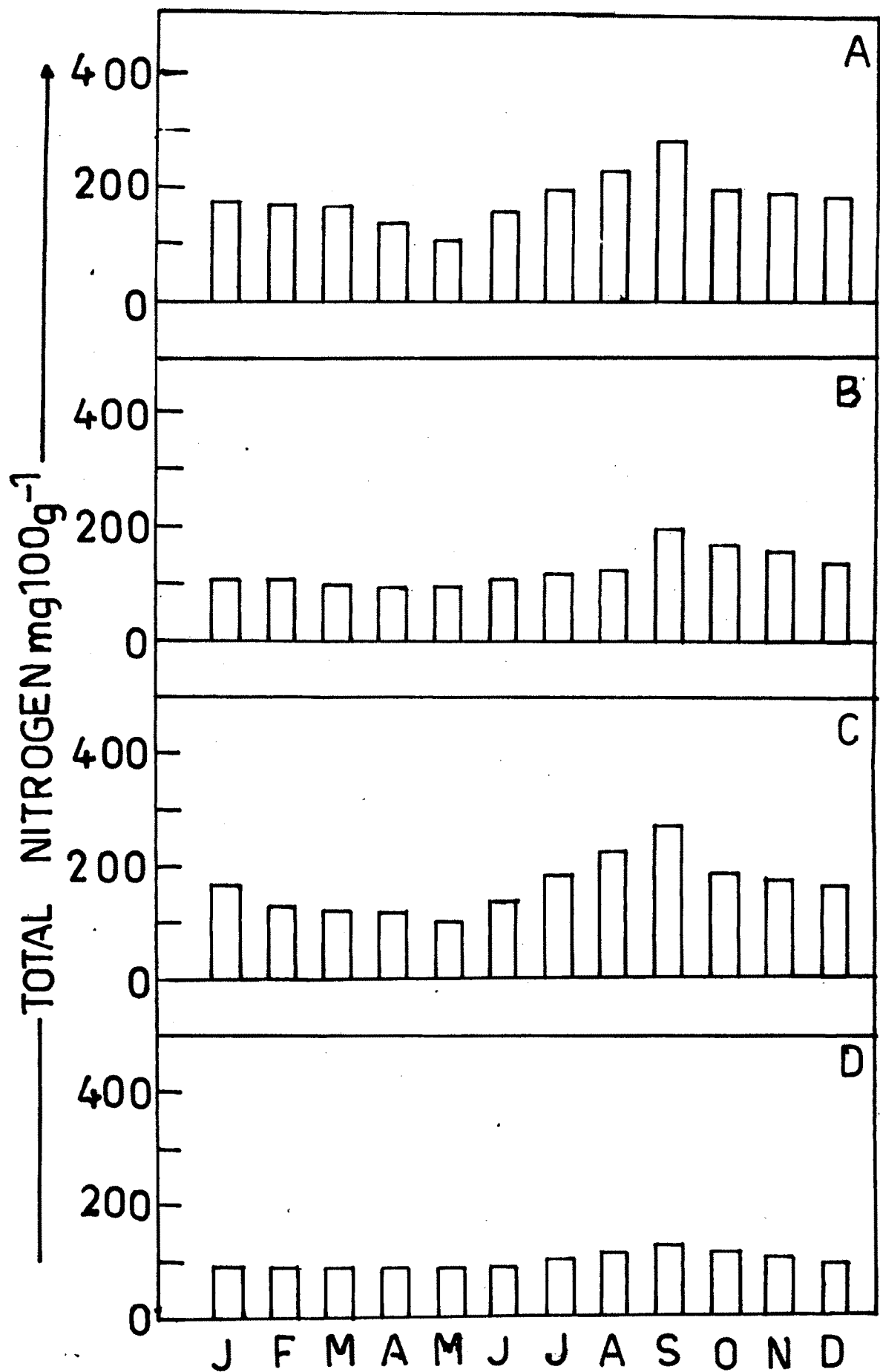


FIG. 5

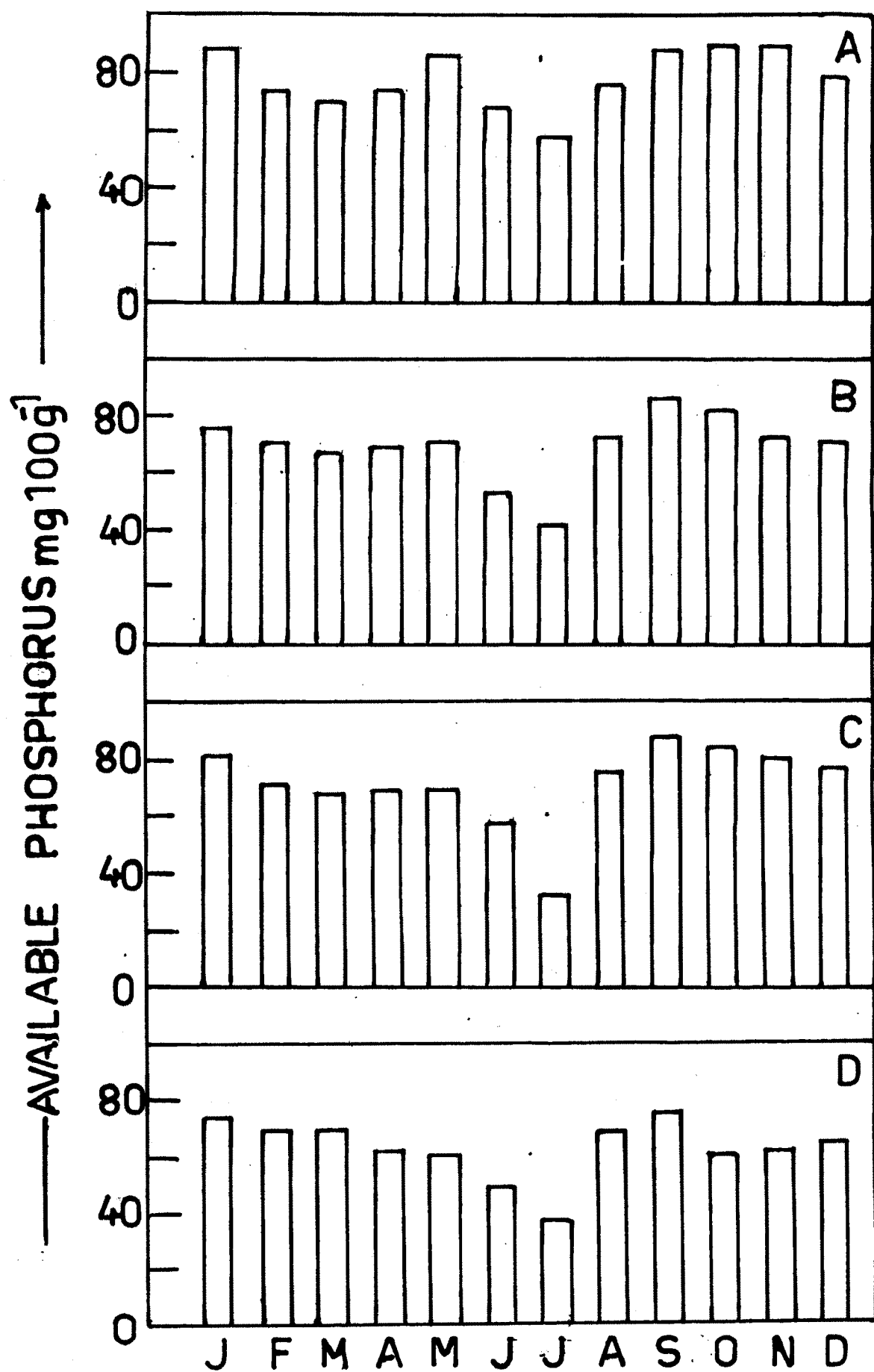


FIG. 6

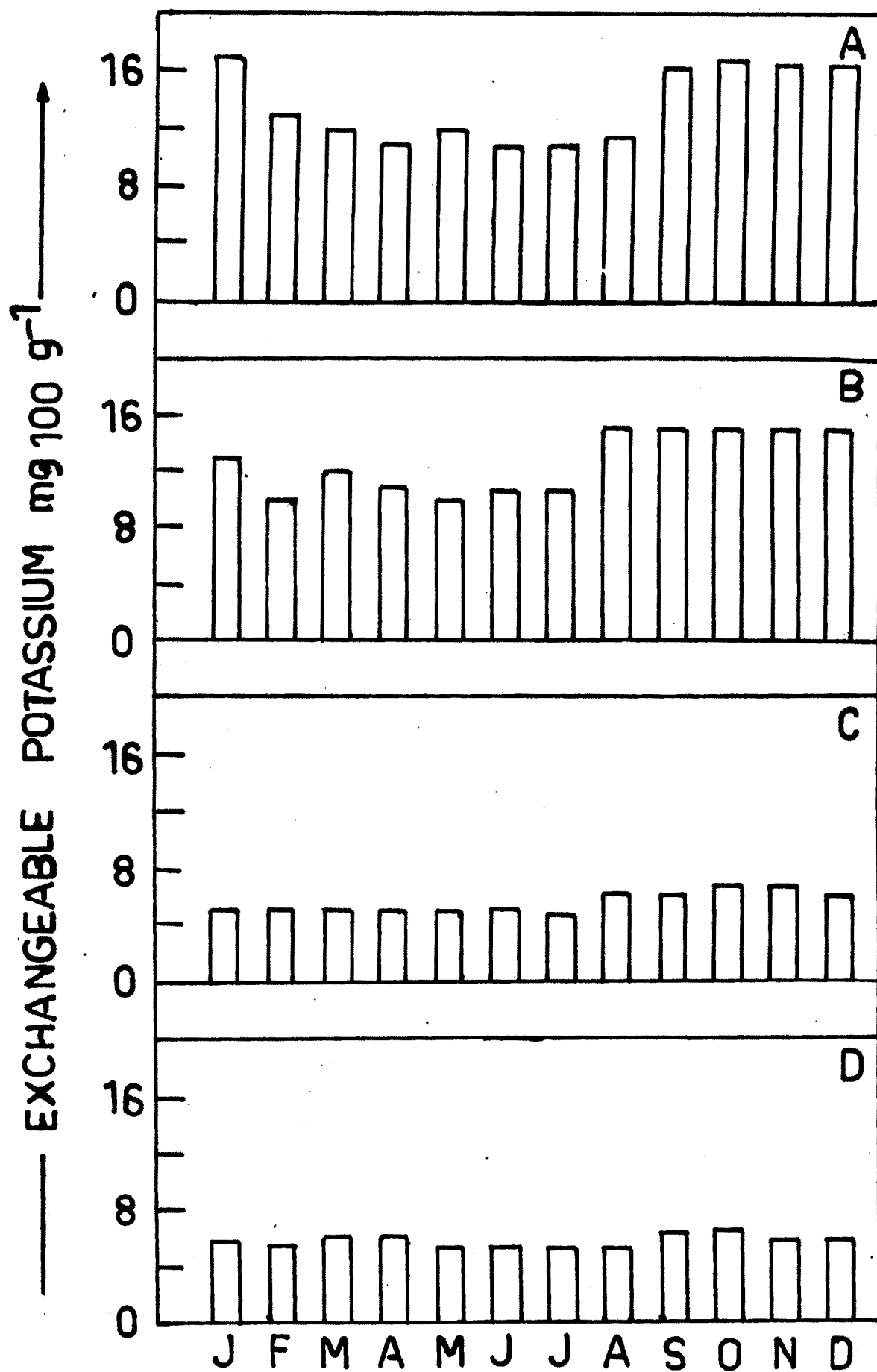


FIG.7

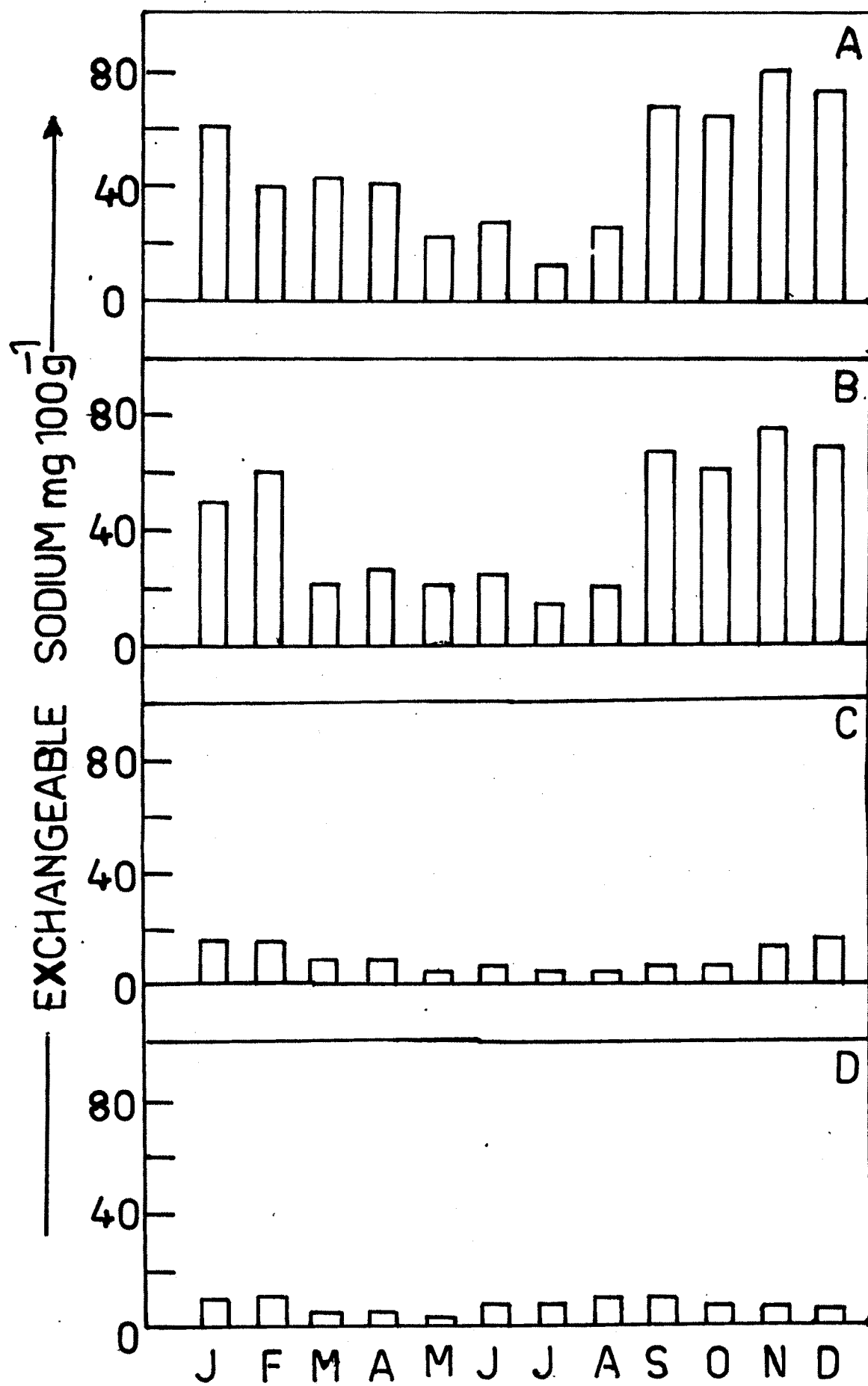


FIG.8

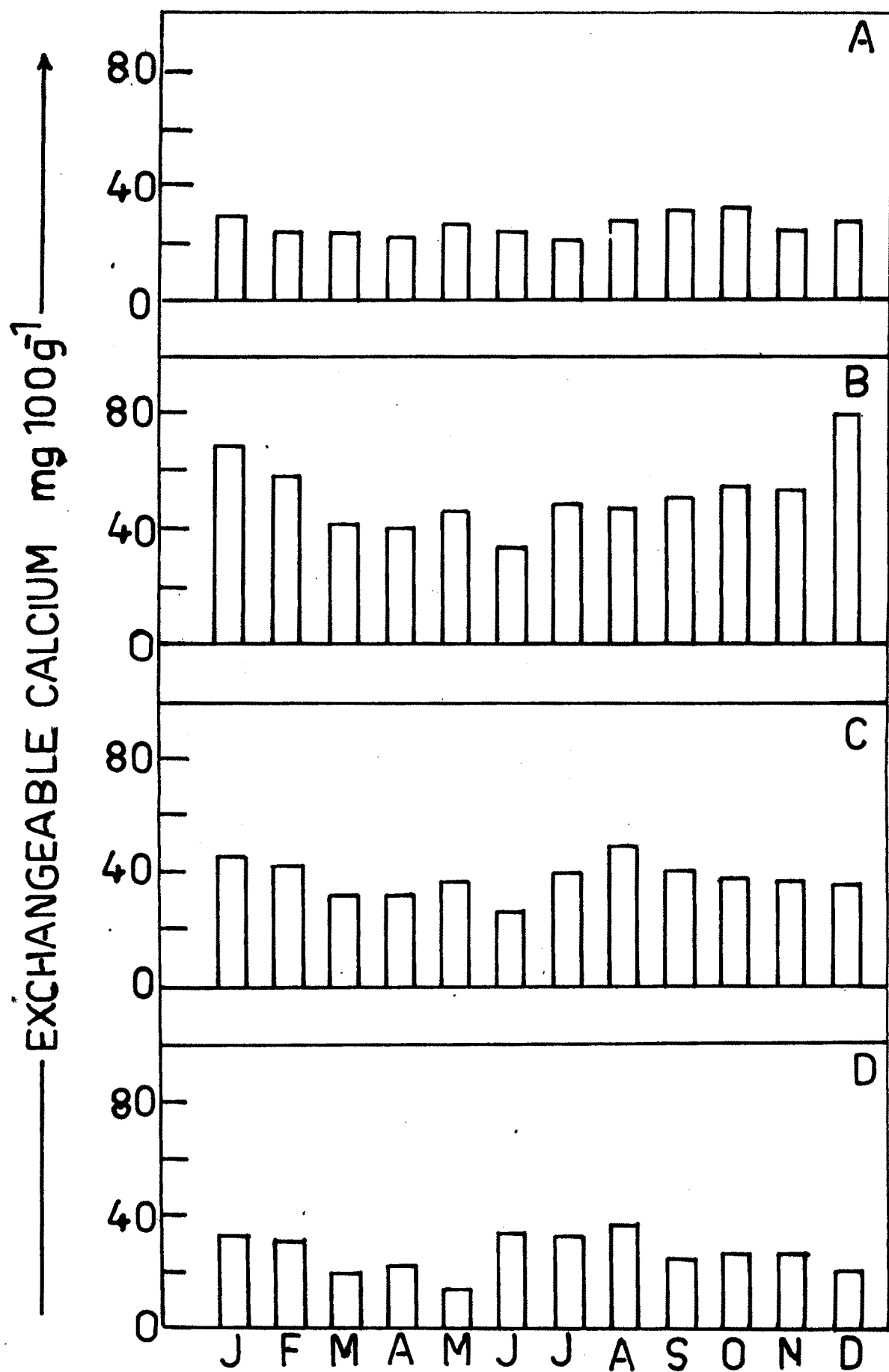


FIG. 9

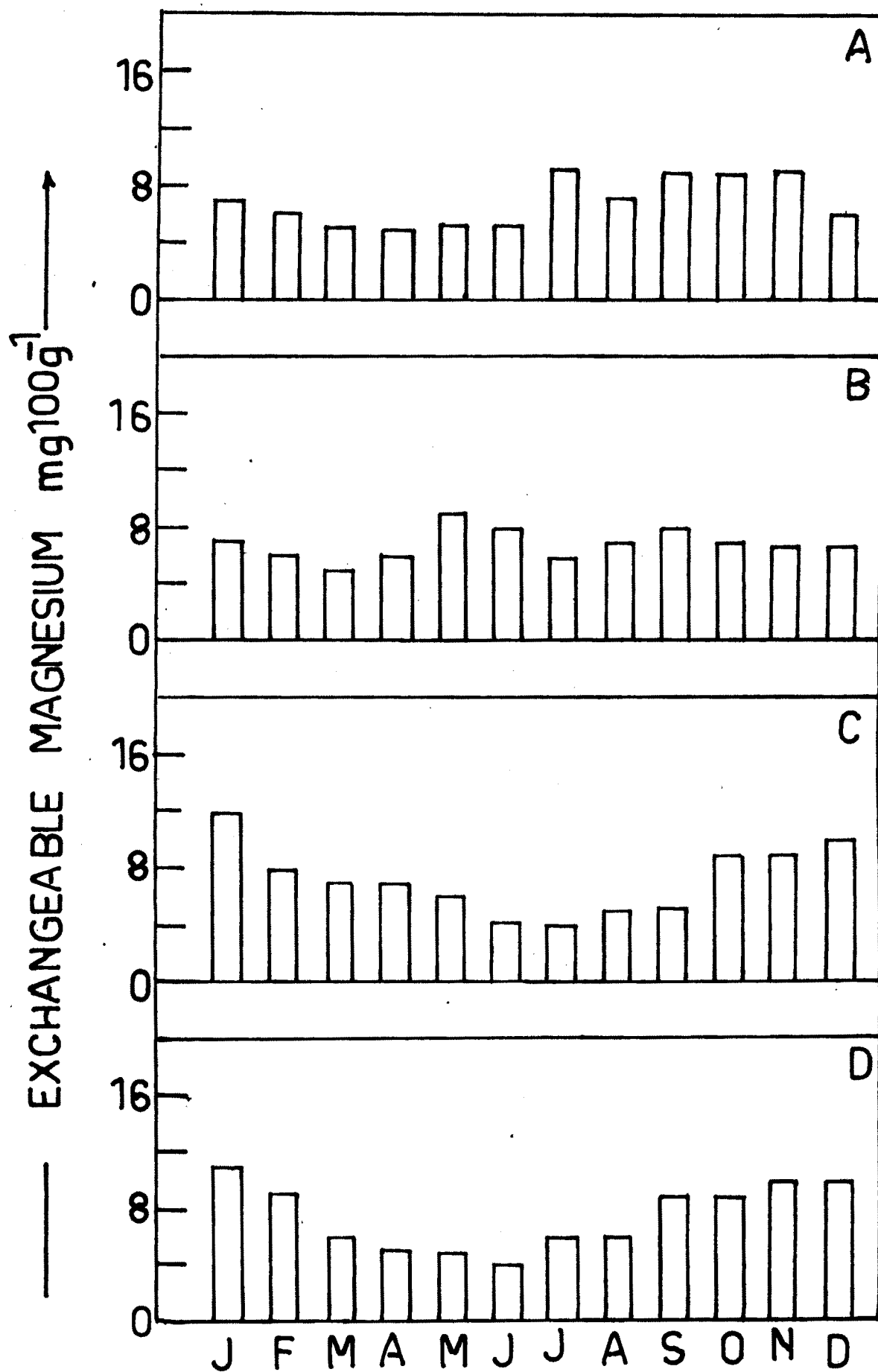


FIG.10

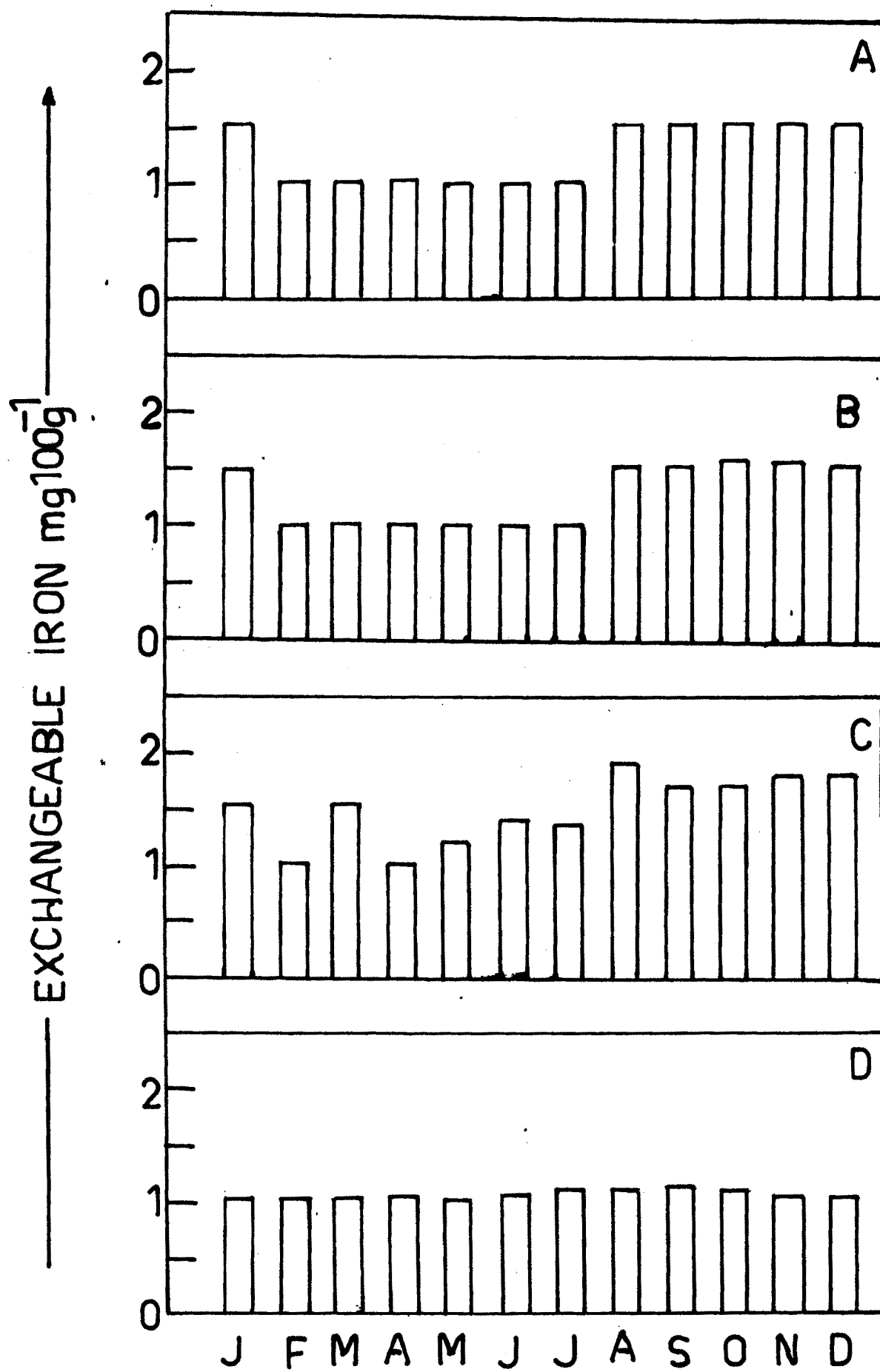


FIG.11

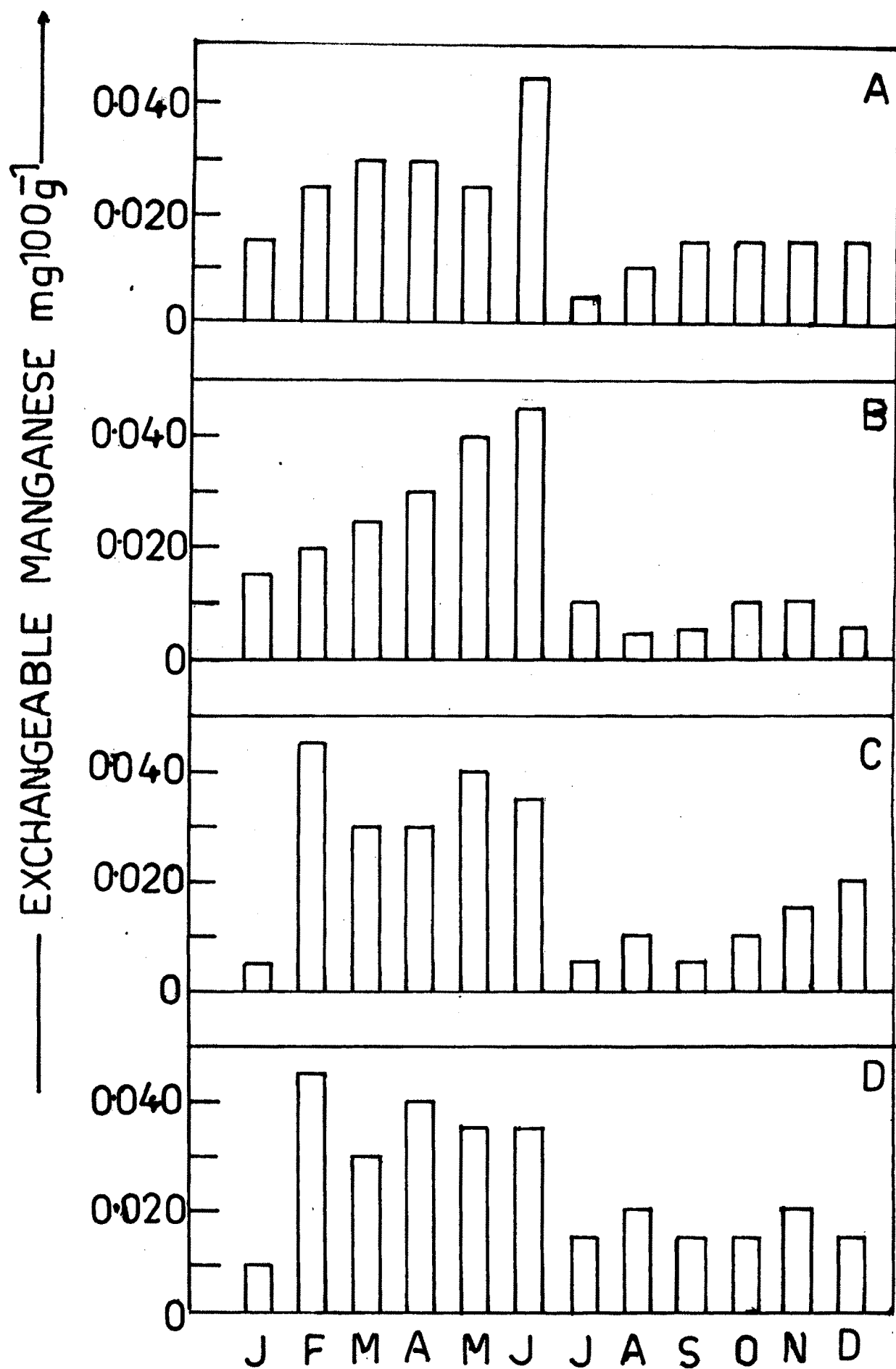


FIG.12

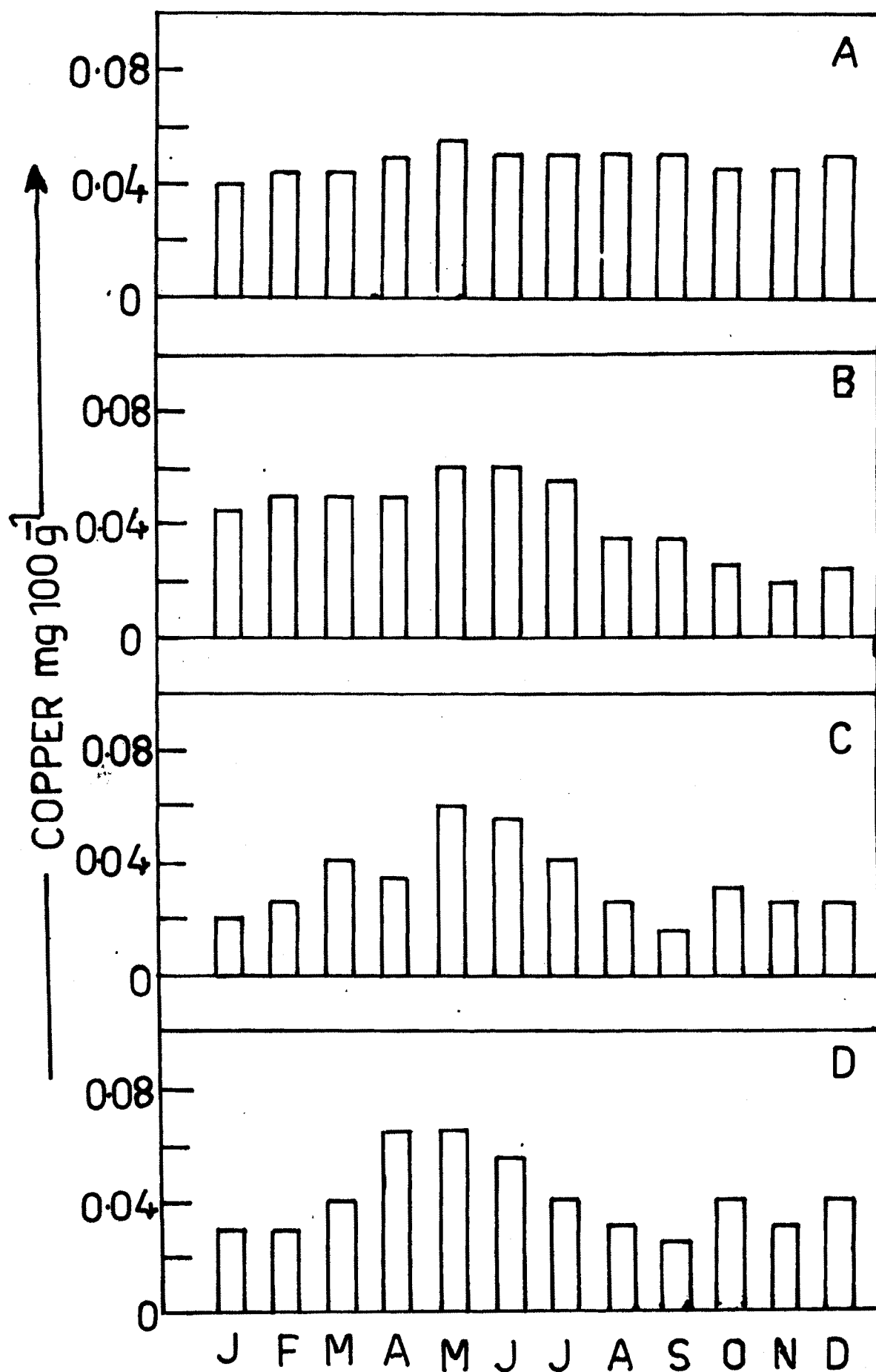


FIG.13

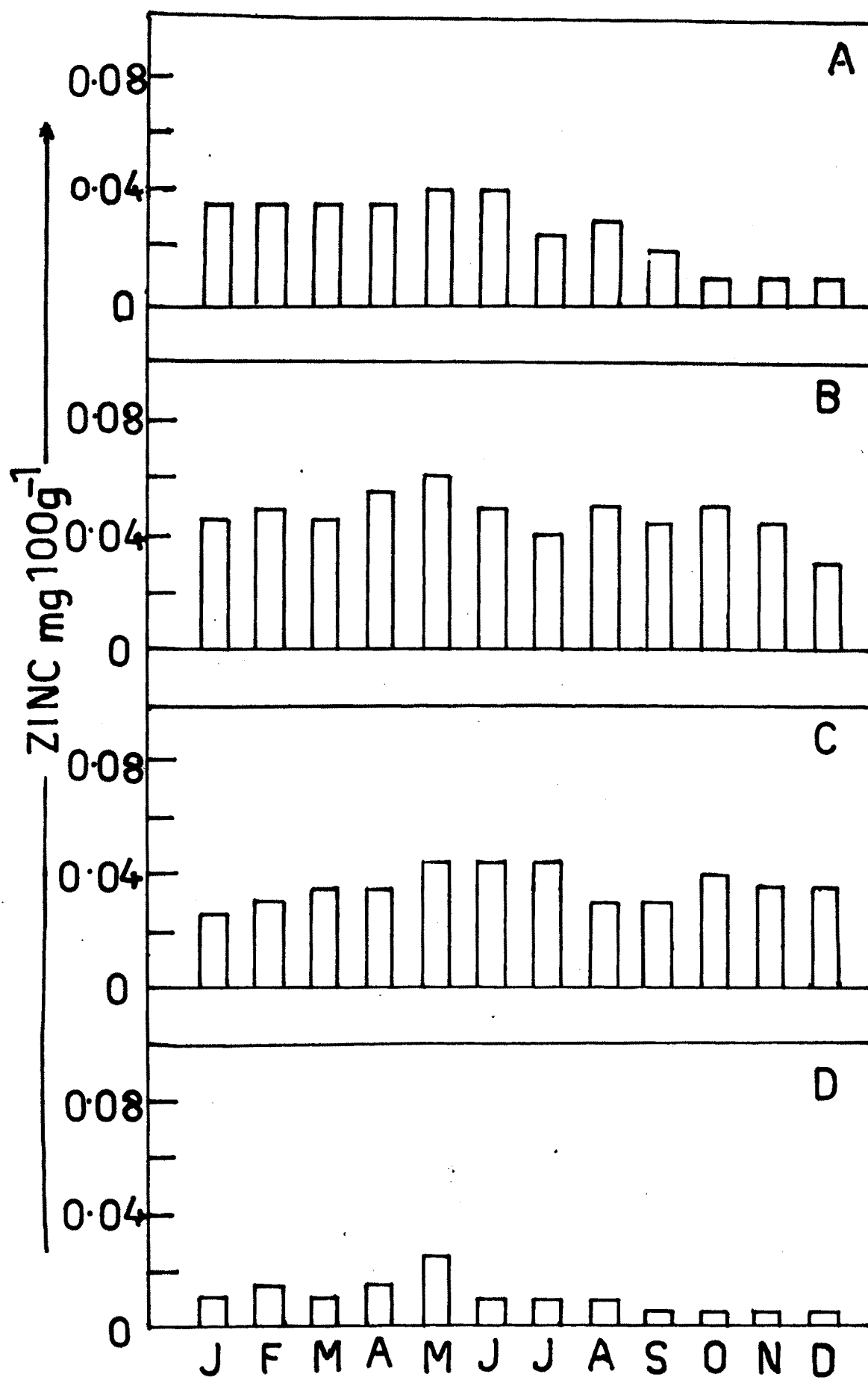


FIG. 14