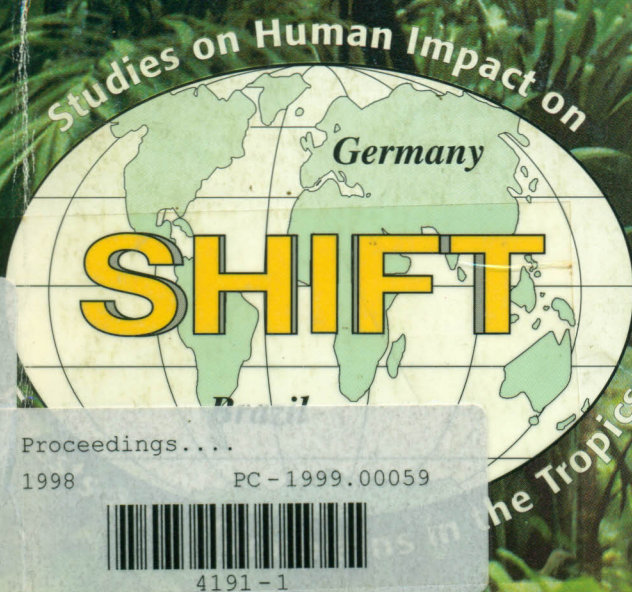


**Proceedings
of the
Third SHIFT-Workshop
Manaus
March 15-19, 1998**



**A German - Brazilian
Research Program**

Proceedings....

1998

PC - 1999.00059



4191-1

Agroclimatological information about the experimental field of the SHIFT-area, ENV 23, 42, 45, 54

Francis Wagner S. Correia¹ and Reinhard Lieberei²

¹ EMBRAPA Amazônia Ocidental, Manaus-AM, Brazil

² Institute of Applied Botany, University of Hamburg, Germany

ABSTRACT

The coordinates of the 17 ha experimental field are 3° 8' S, 59° 52' W, at an altitude of 50 m. Throughout the entire experimental phase of the SHIFT-collaboration of EMBRAPA, Amazônia Ocidental, and the University of Hamburg, agrometeorological data have been monitored by a stationary climatological station situated directly at the experimental site (3° 8' S, 59° 52' W). These data have been compared with the ten-year means of the agrometeorological station of the EMBRAPA, Amazônia Ocidental in a latitude of 03° 08' 05 S and a longitude of 60° 01' W in an altitude of 44 m above sea level.

The climate of the experimental field is classified as AF according to KOPPEN. The years 1996 and 1997 reveal climatic characteristics of "El Niño" years and, thus, they allow to develop an excellent idea about short time local changes of climatic factors compared to a ten-year means.

RESUMO

Neste informativo estão contidos dados obtidos na Estação Agrometeorológica da EMBRAPA - Amazônia Ocidental, localizada no km 30 da rodovia AM-10, à latitude de 03°08'05 S, longitude de 60°01'W de GRT, e numa altitude de 44 metros acima do nível do mar.

O Campo Experimental do CPAA Ocidental no km 30 apresenta o tipo climático AF da classificação de KOPPEN (Clima Tropical Chuvoso), e caracteriza-se pôr apresentar temperatura média do mês mais frio nunca inferior a 18°C, e a precipitação do mês mais seco acima de bom.

O regime climático no ano de 1996 e 1997 apresentou o total pluviométrico de 2585 mm, e o ano de 1997 o total de 1854 mm até e outubro; com a temperatura média anual de 26,5°C e 27,9°C, respectivamente; a média de umidade relativa do ar de 88% (1996) e 85% (1997); a média anual de brilho solar de 1555 horas (1996) e 1348 horas (até outubro de 1997); a velocidade média do vento de 0,7 ms⁻¹ (1996) e 0,7 ms⁻¹ (1997) e evaporação total anual de 878 mm (1996) e 1853mm (até outubro de 1997).

Este trabalho tem como objetivo principal difundir os dados agrometeorológicos às instituições congêneras de Ensino Superior, Extensionistas e Produtores. Apresenta em seu conteúdo dados de precipitação pluviométrica, temperatura do ar, umidade relativa do ar, brilho solar, evaporação, velocidade do vento,

ZUSAMMENFASSUNG

Die Koordinaten des 17 ha großen Experimentalfeldes betragen $3^{\circ} 8' S$, $59^{\circ} 52' W$ bei einer Höhe von 50 m ü.d.M. Während der gesamten experimentellen SHIFT-Kooperationsphase seit 1992 zwischen EMBRAPA-Amazônia Ocidental, Manaus, und dem Institut für Angewandte Botanik, Universität Hamburg, wurden die agrometeorologischen Daten durch eine stationäre Klimastation aufgezeichnet. Diese Daten wurden in Vergleich gesetzt mit dem zehnjährigen Mittel der Wetterstation der EMBRAPA, Amazonas ocidental bei $03^{\circ} 08' 05 S$ und $60^{\circ} 01' W$ auf einer Höhe von 44 m ü.d.M. Das Klima ist nach KOPPEN als AF klassifiziert.

Die Jahre 1996 und 1997 weisen klimatische Charakteristika von "El Niño"-Jahren auf. Der Vergleich der Klimadaten beider Jahre mit dem zehnjährigen Mittel gibt einen sehr guten Eindruck wider über die kurzfristig eintretenden, drastischen Veränderungen der klimatischen Faktoren im Zusammenhang mit dem "El Niño"-Phänomen.

Table 1: Monthly precipitation in 1986 and 1997 compared to the longterm mean 1971 - 1997; EMBRAPA Amazônia Ocidental [mm]

Month	1996	1997	1971 - 1997
Jan	291.7	251.7	258.6
Feb	276.0	319.2	290.9
Mar	385.5	469.1	310.3
Apr	366.5	271.0	306.7
May	144.6	177.2	268.1
Jun	212.8	69.8	157.5
Jul	133.5	44.9	117.9
Aug	200.5	137.1	106.0
Sep	110.4	48.4	119.9
Oct	116.7	65.6	163.8
Nov	178.6		184.8
Dec	168.2		245.2

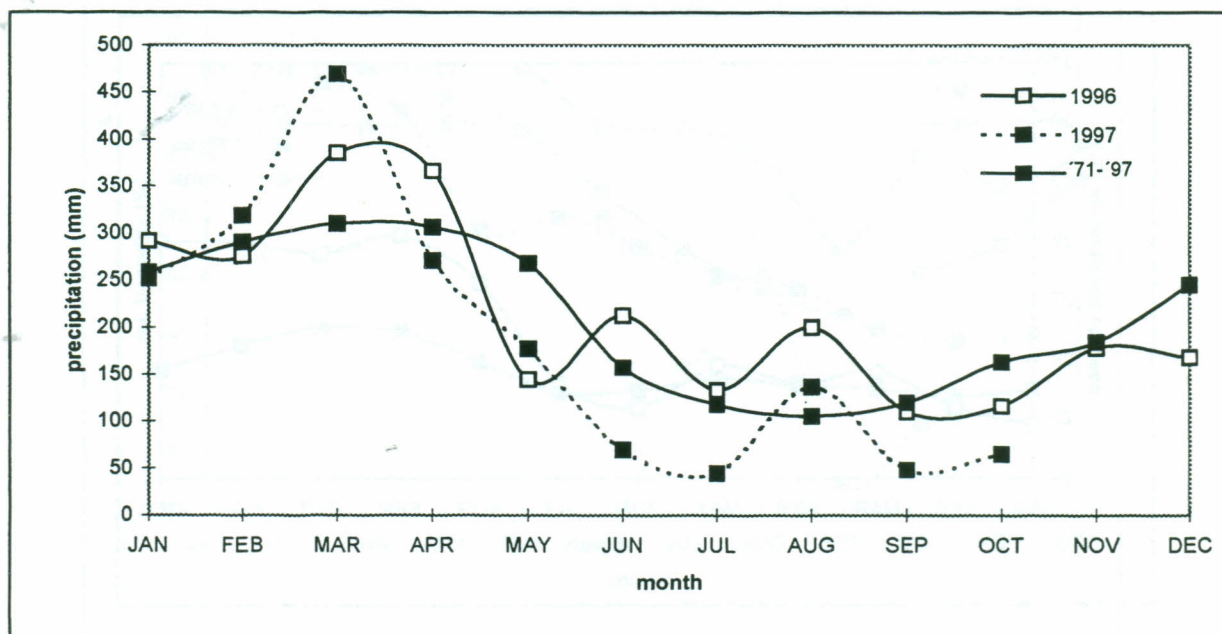


Figure 1: Monthly precipitation in 1996 and 1997 compared to the longterm mean 1987 - 1996; EMBRAPA Amazônia Ocidental [mm].

Table 2: Mean temperature in 1996 and 1997 compared to the ten years mean 1987 - 1996; EMBRAPA Amazônia Ocidental [mm].

Month	1996	1997	1987 - 1996
Jan	24.9	26.4	25.5
Feb	25.2	26.3	25.4
Mar	25.8	26.5	25.5
Apr	25.6	27.2	25.6
May	25.9	27.4	25.7
Jun	25.2	27.9	25.5
Jul	25.6	28.4	25.5
Aug	27.3	28.2	26.0
Sep	28.1	30.2	26.5
Oct	27.8	30.7	26.6
Nov	28.0		26.3
Dec	28.0		25.8

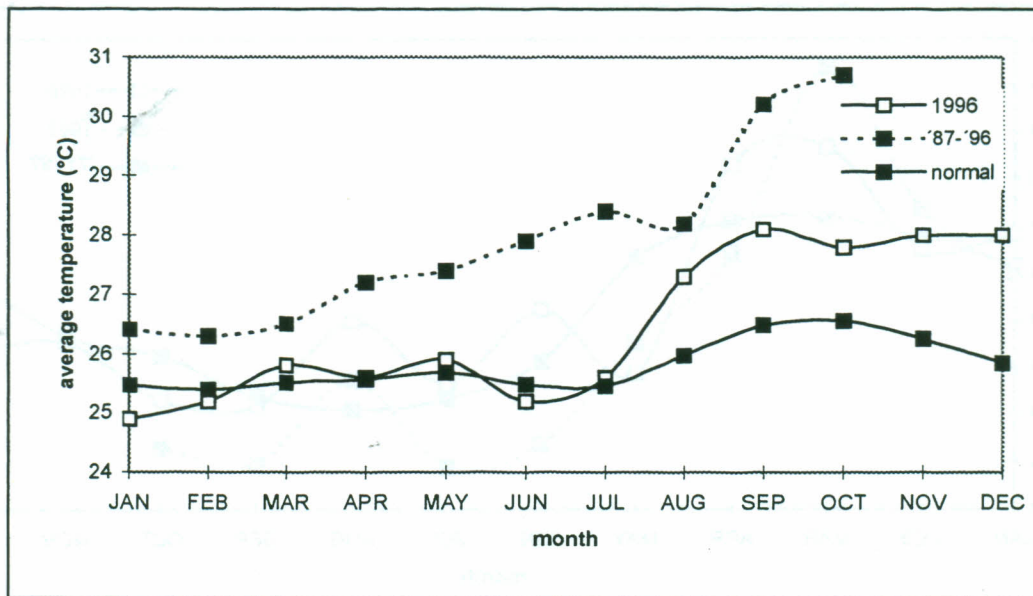


Figure 2: Mean air temperature (°C).

Table 3: Relative air humidity in 1996 and 1997 compared to the longterm mean 1971-1997.

Month	1996	1997	1971-1997
Jan	87	90	87
Feb	91	90	88
Mar	90	90	88
Apr	90	89	88
May	90	88	88
Jun	88	85	86
Jul	88	80	84
Aug	87	83	83
Sep	84	76	82
Oct	87	78	83
Nov	86		84

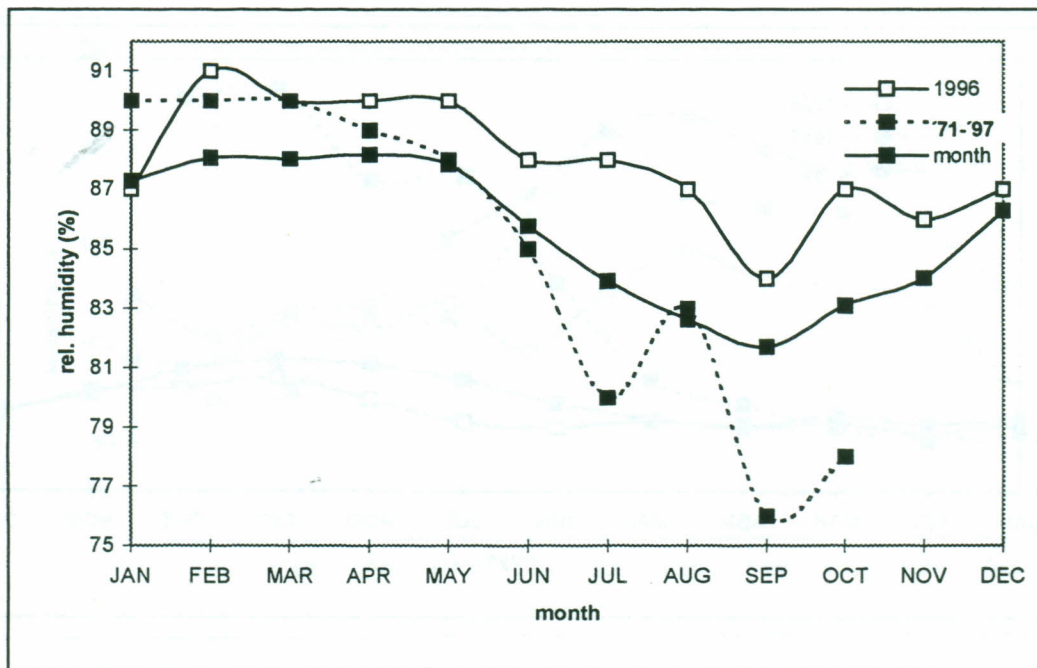


Figure 3: Relative air humidity [%] in 1996 and 1997, compared to the longterm mean 1971-1997.

Table 4: Monthly evaporation [mm] in 1996 and 1997 compared to the longterm mean 1976-1997.

Month	1996	1997	1976-1997
Jan	62.6	54.9	68.8
Feb	54.0	48.3	62.5
Mar	63.1	60.0	69.8
Apr	58.5	80.0	60.2
May	65.6	103.1	67.1
Jun	59.3	193.4	81.5
Jul	64.0	291.6	103.1
Aug	85.4	287.5	117.6
Sep	105.8	371.5	121.9
Oct	95.4	362.6	112.8
Nov	92.9		89.7
Dec	71.1		74.5

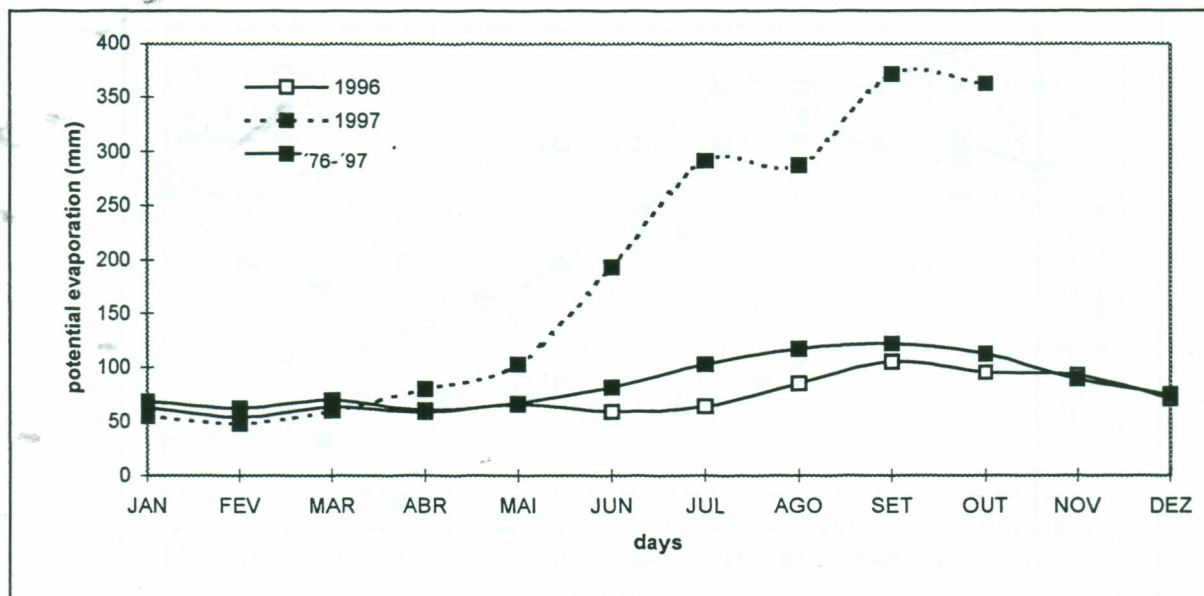


Figure 4. Monthly evaporation [mm] in 1996 and 1997 compared to the longterm mean 1976-1997.

Table 5: Monthly insolation [h] in 1996 e 1997 compared to the longterm mean 1972-1997; EMBRAPA Amazônia Ocidental

Month	1996	1997	1972-1997
Jan	92	94.6	124.7
Feb	90.8	71.8	103.6
Mar	112.7	76.6	117.1
Apr	107.2	116.2	120.6
May	120.6	112.7	153.6
Jun	95.2	161.3	175.8
Jul	127.2	206.1	208.9
Aug	146.6	174.8	215.9
Sep	131.1	168.8	198.7
Oct	127.6	165.8	183.8
Nov	120.5		159.2
Dec	83.7		128.3

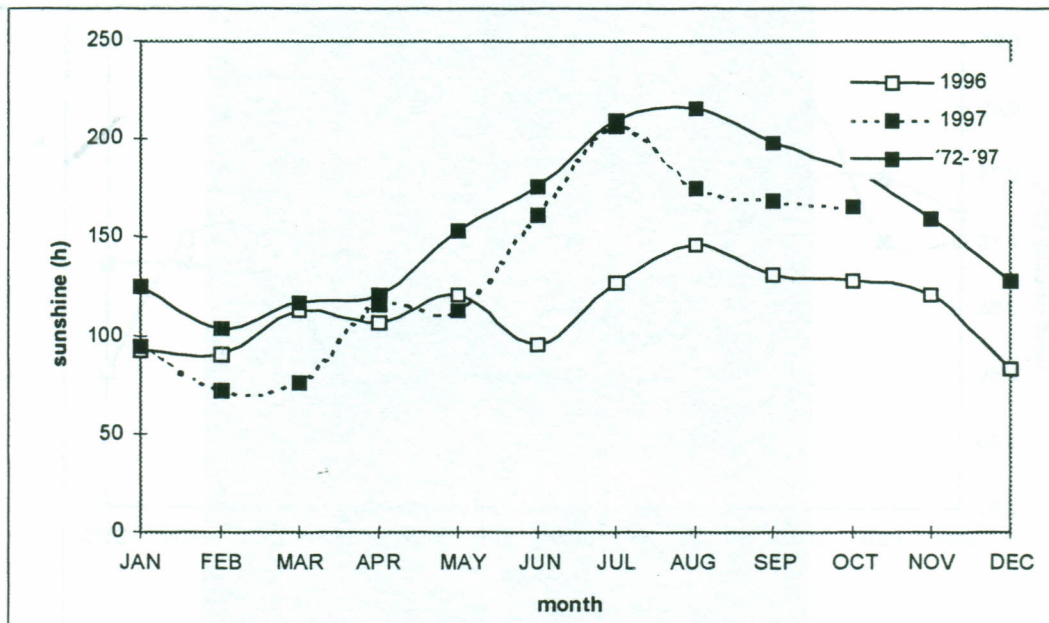


Figure 5: Monthly insolation [h] in 1996 e 1997 compared to the longterm mean 1972-1997; EMBRAPA Amazônia Ocidental

Table 6: Monthly wind velocity in 1996 e 1997 compared to the longterm mean 1987 - 1997; EMBRAPA Amazônia Ocidental.

Month	1996	1997	1987 - 1997
Jan	0.7	0.7	0.7
Feb	0.7	0.7	0.7
Mar	0.8	0.8	0.7
Apr	0.7	0.7	0.7
May	0.6	0.6	0.6
Jun	0.6	0.7	0.7
Jul	0.6	0.7	0.6
Aug	0.6	0.8	0.7
Sep	0.6	0.8	0.7
Oct	0.7	0.8	0.7
Nov	0.7		0.7
Dec	0.6		0.7

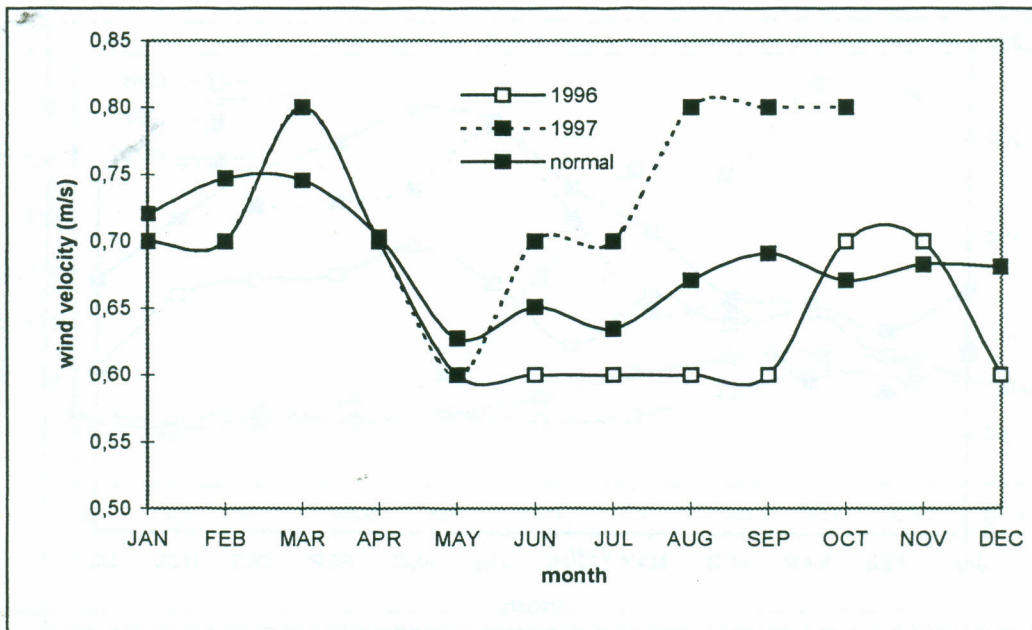


Figure 6: Monthly wind velocity in 1996 e 1997 compared to the longterm mean 1987 - 1997; EMBRAPA Amazônia Ocidental.