

Table 1. Seed yield, pods plant⁻¹, and seeds plant⁻¹ of chickpea as influenced by date of sowing and cultivars.

Date of sowing	Chickpea varieties			Mean
	JG 74	JG 1263	H 355	
Seed yield (t ha⁻¹)				
10 Dec 1982	2.69	2.56	2.29	2.51
20 Dec 1982	1.95	1.81	1.70	1.82
30 Dec 1982	1.35	1.00	0.87	1.07
10 Jan 1983	1.27	0.73	0.57	0.86
Mean	1.82	1.52	1.36	1.56
Pods plant⁻¹				
10 Dec 1982	28	25	22	25
20 Dec 1982	22	18	24	22
30 Dec 1982	16	18	16	17
10 Jan 1983	14	12	11	12
Mean	20	19	19	19
Seeds plant⁻¹				
10 Dec 1982	28	32	33	31
20 Dec 1982	25	20	32	26
30 Dec 1982	17	19	15	17
10 Jan 1983	17	21	23	22
Mean	22	12	11	13
	Seed yield	Pods plant⁻¹	Seeds plant⁻¹	
SE	±0.104	±0.651	±1.507	
Date of sowing	±0.19	NS	NS	
Varieties	NS	NS	NS	

ing was influenced by its attributes, i.e., pods plant⁻¹ and seeds plant⁻¹.

Among the three cultivars tested for late-sown conditions, JG 74 was found significantly superior (1.82 t ha⁻¹) to the other two cultivars across three sowings as well as for each date of sowing. The two cultivars JG 1263 and H 355 were similar in response. Thus, it is concluded that among the three chickpea cultivars, JG 74 appeared to be the best under late-sown conditions.

References

- Kumar, R., Yadav, H.L., and Yadav, D.S. 1983. Comparative performance of promising gram varieties under different dates of sowing. *Indian Journal of Agronomy* 28(1):87-88.
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Surveys

A Rapid Survey of Chickpea Cultivation: I. Gojam, Ethiopia, 1989/90

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In Africa, Ethiopia is the major chickpea producer, and within Ethiopia the regions of Shoa (39%), Gondar (27%), and Gojam (16%) take up largest shares of the production. The area around Adet, where an Agricultural Research Centre (ARC) was established in 1985, is considered representative of the Gojam region. According to data of the Central Statistics Authority of Ethiopia, the area covered by pulses in the Gojam region in 1986/87 was as shown in the following table.

Crop	Area (ha) × 1000
Faba bean	41.73
Chickpea	16.79
Field pea	12.93
Grass pea	10.38
Lentil	2.76

Usually the sowing of chickpea is from the middle of September to the middle of October on soils with vertic properties.

To obtain data on main aspects of chickpea cultivation and its constraints in the Adet area, the authors conducted a rapid survey on the ARC and 10 farms between Adet and Bahar Dar on 12 Jan 1990. The observations were recorded on the following characteristics.

- Approximate distance from Adet in km

- Soil type:

C = Cambisol
V = Vertisol

HA = Heavy alluvial clay
MA = Medium alluvial clay

L = Loam
LA = Light alluvial clay

- Growth stage of crop:

PF = Preflowering
FL = Flowering

EP = Early podding
MP = Medium podding

LP = Late podding

- Score for other traits (1-5):

Score	Plant population m ⁻²	Nodulation	Disease incidence ¹	Pod-borer incidence	
			plants affected (%)	Larval incidence at flowering	Pods damaged (%) at podding
-	none	nil	none	nil	none
1	1-5	slight	1-5	light	1-5
2	6-10	light-moderate	6-10	light-moderate	6-10
3	11-20	moderate	11-20	moderate	11-20
4	21-30	heavy	21-30	severe	21-30
5	>30	very heavy	>30	very severe	>30

1. Collar rot, fusarium wilt, dry root rot, and stunt.

The disease identification was based on the symptoms as described by Nene et al. 1978.

The observations recorded in Table 1 show that:

- the sowing date had varied probably from September to December.
- the plant density was fair.
- the nodulation was not abundant and sometimes absent, and needs improvement.
- Dry root rot was the major disease; it was observed as very destructive in many farms. Resistant varieties are urgently required.
- Stunt was always present, but not severe. Collar rot and fusarium wilt occurred, but sparsely.
- Pod borers are of less significance.

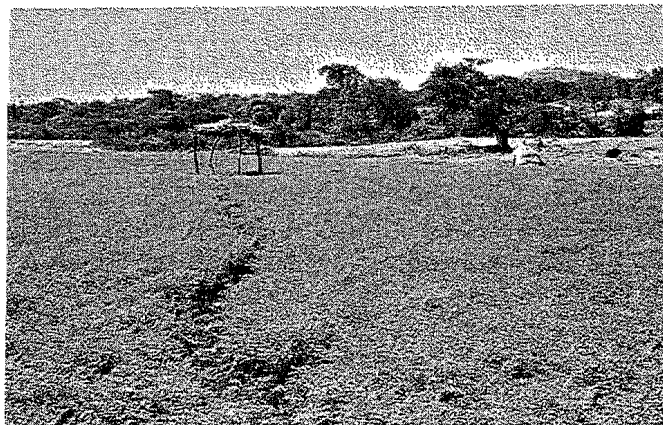


Figure 1. A chickpea field in Gojam, Ethiopia.

Table 1. Survey results of chickpea farms between Adet and Bahar Dar, Gojam region, Ethiopia, visited on 12 Jan 1990.

Characteristics ¹	Serial number of farms visited										
	1	2	3	4	5	6	7	8	9	10	11
Distance from Adet	0	10	10	20	20	25	25	30	30	40	40
Soil type	C	C	C	C	C	V	V	V	V	V	V
Growth stage	EP	FL	FL	EP	EP	LP	LP	LP	FL	FL	EP
Plant population	4	4	3	3	3	3	3	3	3	3	3
Nodulation	1.5	-	1.0	-	2.5	2.5	3.0	2.5	1.0	1.0	2.0
Diseases:											
collar rot	1	1	1	1	1	-	-	1	-	-	-
fusarium wilt	1	-	-	-	-	-	-	-	-	-	-
dry root rot	3	1	1	-	5	2	5	1	1	-	1
stunt	1	1	1	1	1	1	1	1	1	1	1
root rot	-	-	-	-	-	-	-	-	-	-	-
Pod borer	-	-	-	-	-	1	1	1	1	-	-
Leafminer	-	-	-	-	-	-	-	-	-	-	-

1. For key see text.

It was also observed that all farms had only desi chickpeas, with high-yield potential (Fig. 1). There is a possibility of growing kabuli chickpeas also. The survey results confirm earlier observations (Pundir and Mengesha 1983) on the importance of dry root rot in the Gojam region and suggest that the introduction of dry root rot resistant germplasm is of high priority in the chickpea improvement program. There is need for *Rhizobium* inoculation trials in this region.

References

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- Pundir, R.P.S., and Mengesha, M.H. 1983. Collection of chickpea germplasm in Ethiopia. International Chickpea Newsletter 8:6-7.

A Rapid Survey of Chickpea Cultivation: II. Machakos District, Kenya, 1989/90

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Kenya is not a major chickpea producer, but in the Masinga, Yatta, and Manza divisions of Machakos district the crop is important as a revenue earner. The FAO Production year book doesn't give statistics on chickpea production in Kenya, but during tours chickpea areas were estimated at 7500 ha, by van Rheenen in 1986, 15000 ha by Ghanekar and Omanga in 1988, and 20000 ha by the present farm visits.

Usually the main chickpea crop is sown in May, when the rains have ceased, but also in November-December a small area is sown to chickpea.

To obtain information on main aspects of chickpea cultivation in the areas mentioned and around Katumani, the authors conducted a survey similar to that described in 'A rapid survey of chickpea I' by Woldeamlak Araya