

STUDY ON PLANTING DATES FOR PAKHRIBAS LOCAL CUCUMBER (GREEN LONG) (FOR MID HILLS OF NEPAL)

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ABSTRACT

Cucumber is the most important cucurbit vegetable which is commercially grown in Nepal from Terai to high hills. A local landrace of cucumber which is long and dark green is very popular in the eastern Nepal. A study was conducted to identify the date of planting which produce maximum and earliest fruit at Agricultural Research Station, Pakhribas. The study was conducted for two consecutive years of 2007 and 2008. The treatments were five planting dates Falgun, Chaitra, Baisakh, Jestha and Asar. The experiments were executed in randomized block design with three replications. Earliest flowering and first harvesting were recorded from Baisakh planting (32.5 days and 56.83 days respectively). Fruit diameter was not significantly different while fruit length was found maximum from Baisakh planting and shortest from Asar planting. Falgun planting produced maximum fruit yield (48.8 t/ha) followed by Chaitra planting (34.7 t/ha).

Key words: Cucumber, planting dates.

BACKGROUND

Cucumber (*Cucumis sativus* L.) is the most commonly cultivated cucurbits vegetable in Nepal. According to Subedi *et al.* (1996), cucumber is extensively grown in mid and low hills of Nepal and it is most important cash generating crop for farmers living near the markets and roads. The local landrace of green cucumber of the eastern hill is not only large in size but also very tasty as compared to other cucumbers. This cucumber is listed as a traditional vegetable of eastern hills of Nepal (Baral *et al.*, 1994). It is widely grown in hilly areas of the eastern Nepal and it also fetch high market price in major markets like Dharan, Itahari and Biratnagar. Consumers prefer it because of its taste and its tenderness. Baral *et al.*, (1994) reported that the traditional vegetables not only can be produced at minimum inputs but also tolerant to diseases, pests and adverse climatic condition.

The main planting season of this cucumber in the hills of Nepal is from Baisakh (April-May) and fruit production from Shrawan (July-August). The period of May to October is reported as a lean period for cucumber by Sharma *et al.* (2005) because of high temperature and long day photoperiod condition. This condition leads to the production of more staminate (male) flowers and less pistillate (female) flowers (Seshadri, 1990). This lean period can be captured by getting off-season production, if we produce early production in mid hills. Thus the aim of this study was to see the possibility to produce early cucumber production.

MATERIALS AND METHODS

The experiments were conducted in RCB design with three replications. The treatments were five planting dates which are Falgun (February- March), Chaitra (March-April), Baisakh (April- May), Jestha (May-June) and Asar (June-July). The experimental site was Samalbari (1740 masl) of ARS, Pakhribas. One month old seedlings were planted with 1 x 2 m spacing. The plot size was 12 m² with 6 plants per plot. 20 t/ha compost applied in the plants and chemical fertilizers applied at the dose of 60:30:25 NPK kg/ha. Nitrogen application was splitted in two doses. Observations were taken on first flowering date, first harvesting date, total harvesting number, fruit length, fruit diameter, total marketable and unmarketable yield and insect pests. Red pumpkin beetle and fruit fly were found as the problematic insects and Malathion, Cypermethrin, Carbofuran (Furadon) were used to control red pumpkin beetle. While Neem solution was used for fruit fly. Similarly, downy mildew was observed and carbendazim (Bavistin) was to control. The compiled data were analyzed by using GENSTAT Discovery statistical package.

RESULTS AND DISCUSSIONS

Days to first flowering

Date of planting was found highly significant ($p < .001$) for days to first male flower appears. But year and its interaction to treatments were not significant. Earliest flowering (32.5 days) was observed from the planting on Baisakh (April- May) month followed by Chaitra (March-April) in 35.5 days and Jestha (May-June) in 36.3 days and these three treatments were at par. The longest number of days (60 days) to first male flower was observed from Falgun planting (Figure 1).

Earliest male flowering in 34 days from April planting was also reported by Sharma *et al.* (2005) which is in accordance with this study.

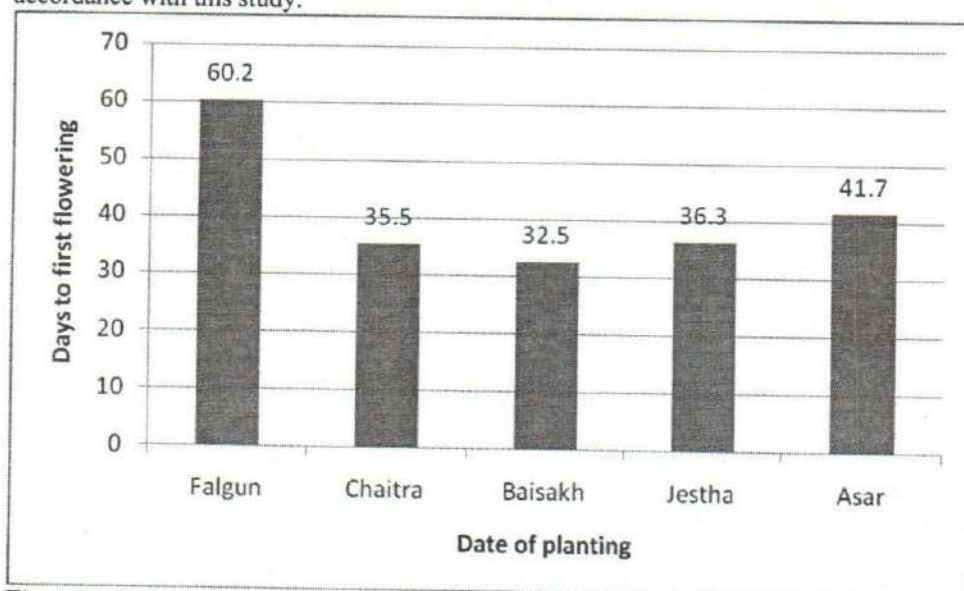


Figure 1: Response of planting dates on first flowering days

First harvesting date

The date of first harvesting was highly significant ($p < .001$) among different planting dates and , significant between year and its interaction ($p < .05$). The earliest harvesting was recorded from Baisakh, Jestha from first year (Figure 2). Similarly Baisakh planting in second year also found earliest harvesting. The same result also reported by Sharma *et al.* (2005) that earliest harvesting in 55 days from April planting.

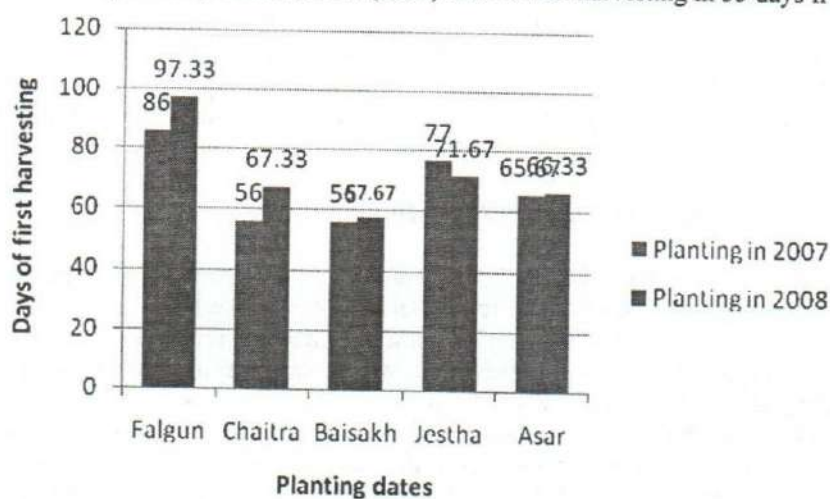


Figure 2: Interaction on planting dates and years on first harvesting days

Fruit yield (t/ha)

The fruit yield was found highly significant ($p < .001$) due to planting dates and year and its interaction were also significant. Highest fruit yield was recorded from planting on Falgun followed by Chaitra (Figure 3). Planting on Baisakh was also produced higher fruit yield as compared to Jestha and Asar. Fruit yield was highest in first year of experiment as compared to second year. This might be due to high rainfall during flowering and fruit setting in the second year (Annex 1). The highest fruit yield was reported from February planting (53.97 t/ha) followed by December planting (23.76 t/ha) by Sharma *et al.* (2005).

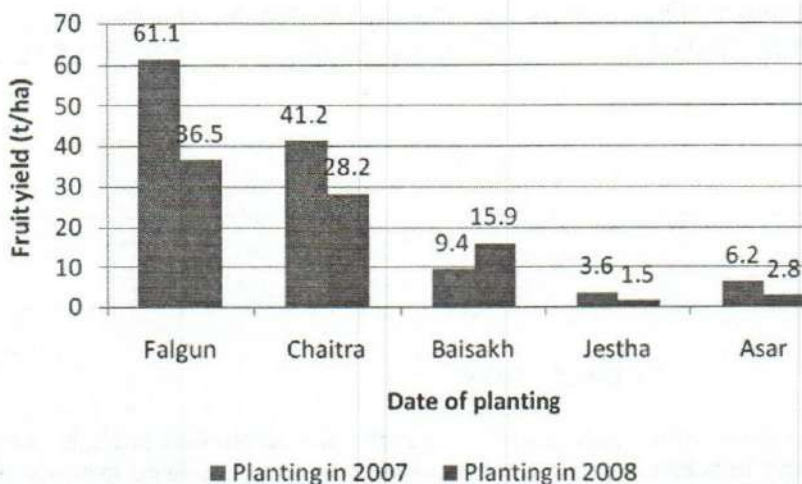


Figure 3: Interaction of planting dates and years on cucumber fruit yield.

Fruit diameter (cm)

The fruit diameter was measured during harvesting and it was found significant only due to years. Among different planting dates fruit diameter was not significantly different each other. Size of fruit (diameter) was highest during first year of experiment as compared to next year.

Fruit length (cm)

Fruit length was observed significantly different due to different planting dates. Longest fruit was noticed from planting in Baisakh (32.18 cm) and shortest was from Asar (25.03 cm) (Figure 4). Planting on Baisakh, Jestha, Falgun and Chaitra were found superior over Asar planting.

Fruit harvesting of cucumber at right edible maturity stage is dependent upon individual kinds and varieties (Seshadri, 1986). The fruit size we harvested according to the available fruit size in the market. Seshadri (1986) reported that the optimum fruit length at edible maturity stage will be 20-25 cm which depends on cultivar.

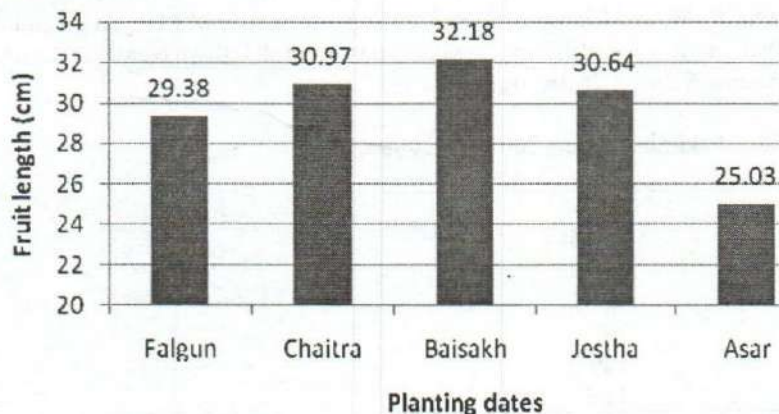


Figure 4. Response of planting dates on fruit length

Number of fruit pickings, harvesting duration and fruit number

There is highly significant difference on number of fruit pickings, harvesting duration and fruit number ($p < .001$). There was maximum fruit harvesting by Falgun and Chaitra planting (6 harvesting by both plantings). Least number of harvesting was recorded from Jestha planting (3.31). The number of fruit harvesting by Falgun, Chaitra and Baisakh was found at par. While by Jestha and Asar was also found at par (Table 1). The same observations were found on harvesting duration and number of fruit (Table 1). Maximum number of fruit was produced by Falgun planting followed by Chaitra planting. While longest harvesting duration was recorded from Chaitra planting (Table 1).

Table 1: Mean observations on number of fruit pickings, harvesting duration and number of fruit

Planting dates	Number of fruit pickings	Harvesting duration (days)	Number of fruit
Falgun	6.0	43.0	69.0
Chaitra	6.0	57.7	50.0
Baisakh	5.33	44.3	17.0
Jestha	3.31	13.3	4.2
Asar	3.67	14.3	6.5
F-test	***	***	***
CV%	14.4	28.2	37.0
LSD	0.856	11.82	13.22

CONCLUSION

Pakhribas local green cucumber is one of the cash generating vegetable for eastern hills of Nepal. As the maximum fruit yield was recorded from Falgun planting, growers can get benefit by growing this cucumber in Falgun month because early production always fetch maximum market price. This study showed the lean period of May to October as reported by Sharma *et al.* (2005) can be fulfilled by planting the local landrace Pakhribas local green cucumber during Falgun (Feb-March). The main conclusion of this study is Falgun planting in order to obtain early fruit production (from Jesth month).

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Annex 1: Rainfall data (mm) of ARS, Pakhribas during 2007 and 2008

Months	2007	2008
May	110.7	139.6
June	271.4	468.9
July	458.5	421.3
August	236.5	393.
September	119.4	129.5
October	62.9	11.2