

## Integrated weed management in pigeonpea [*Cajanus cajan* (L.) Millsp.]

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### ABSTRACT

A field experiment was conducted during the rainy season of 2002-2003 on "Integrated weed management on Pigeonpea (*Cajanus cajan* (L.) Merr.)" at Experimental Farm of College of Agriculture, Parbhani, Marathwada Agril. University, Parbhani. To find out the crop weed association in pigeonpea, to study the weed growth, dry matter and weed control efficiency in pigeonpea and pigeonpea + soybean bean, to assess the extent of losses due to weeds in pigeonpea, to find out the most economic method of weed control in pigeonpea. The study found, that weeds caused 79.93 per cent reduction in pigeonpea grain yield if weeds were allowed to grow till harvest, however, grain yield losses were only 38.19 per cent in pigeonpea + soybean bean intercropping system. Recommended cultural practice and farmers practice for controlling weeds could be followed if one can not afford for purchase of herbicides, as it involve less treatment cost than herbicidal treatment. Pre emergence application of alachlor 2 kg/ha with hand weeding and hoeing at 6 weeks after sowing proved most effective and economical in controlling weeds and enhancing the grain yield in pigeonpea + soybean intercropping system.

**Key words :** Weed, Soybean bean, Pigeon pea, Weed management, Weed index,

### INTRODUCTION

Pulses are gaining more important position in Indian agriculture. After green revolution, India became self sufficient in case of food grain production. However, India is still lagging behind in case of pulses production and is dependent on imports for the domestic consumption in present days. As there is little scope to increase area under pulse, the production can be increased by enhancing the productivity by various agro techniques.

Pigeonpea is most important *kharif* pulse crop. Pigeon pea is a main source of protein (22.3 per cent), minerals (3.5 per cent), carbohydrates (57.6 per cent) and provides 335 kcal energy per 100g. Recent findings of "National Institute of Nutrition" concluded that pulses not only supply 15 to 23 per cent of proteins but also supply 20 per cent calories of dietary requirements.

In India, pigeonpea occupies an area of about 3.5 million hectares with annual production of 2.36 million tonnes in 1999-2000 (Anonymous, 2000). India has the worlds largest hectareage of pigeonpea and contributes about 90 per cent of global production. The major pigeonpea growing states in India are Maharashtra, Madhya Pradesh, Uttar Pradesh, Karnataka and Gujarat. These states together contribute 86.1 per cent of total growing area and 84.5 per cent of total production.

In Maharashtra it was cultivated on an area of about

1.04 million hectares with the production of 0.79 million tonnes with the average productivity of 682 kg per hectare in 1998-99. This clearly indicates that there is not much increase in yield and stagnated over a period of time with substantial fluctuations in spite of availability of number of disease resistant varieties. It seems that the yield of present varieties have not been fully realised, exploited and stabilised. It is possible to enhance the productivity when it is grown as sole or in a cropping system by effectively managing the crop agronomically.

Sole pigeonpea gets heavily infested with weeds due to wide row and plant to plant spacing, slow early growth of crop and frequent rains and inadequate sunlight during *kharif* season. The critical period is during the first eight weeks after sowing. Losses in grain yield caused by the weeds in pigeonpea are reported to the extent of 68 per cent in the peninsular zone (Tewari, 1989). At present, weed control is being done mostly through conventional method of hand weeding and hoeing. However, due to increase in the cropping intensity, increasing labour charges and being time consuming, it was thought to find out other weed control methods like, chemical method or integrated weed management to control weeds effectively and economically. With this view, present field experiment was undertaken with objectives as : To find out the crop weed association in pigeonpea ,To study the weed growth, dry

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