

## Effect of Summer Ploughing on the Germination of Korai Weed (*Cyperus Rotendus*)

By

P. KRISHNA RAO,  
Millet specialist, Coimbatore  
and

MISS. L. MOSES  
Assistant to Millet Specialist

At the Millets Breeding Station, Coimbatore, certain fields were very badly infested with the Korai weed (*Cyperus*). The fields are red sandy loams. The rainfed crop of Cumbu (Pearl millet) in Field No. 2 was harvested towards the middle of January 1949, and the field was deep ploughed on 24-1-1949. The ploughing was done by the turn-wrest plough drawn by 2 pairs of bullocks. The depth of furrows varied from 7 inches to 8 inches. Large clods were lifted by the plough. The ploughing was done closely so that there was no unploughed land left behind. From 24-1-1949 till 9-3-1949 (i.e. about 45 days) the field was fallow and in a cloddy condition and received no cultivation being fully exposed to dry weather. The sun and wind had their full play on the ploughed field. The range of temperatures during the months January, February and March along with the rainfall conditions are given below :—

Month	Mean		Lowest Minimum	Highest Maximum	Date on which lowest min. was recorded	Date on which highest max. was recorded	Rainfall in inches.
	Maxi- mum	Mini- mum					
January	84.5	61.6	52.8	88.8	20th	30th	nil
February	90.1	62.9	36.0	95.0	20th	23rd	nil
March	95.7	65.7	58.8	100.4	12th	15th	nil

There was no rain during the period. Advantage was taken of this condition to study if the tubers of Korai left in the ploughed field retained germination capacity after this period of dessication in the field. 10 tubers of cyperus were picked from the ploughed field at random on 9-3-1949 i.e. 45 days after ploughing. 10 bulbs were also picked on 9-3-1949 from an unploughed portion of the field and both the sets of bulbs were kept for germination in a pot. Every tuber picked from the unploughed land germinated and gave a number of



sprouts from each tuber while those picked from the ploughed field completely failed to germinate. A similar picking was made on 24—3—1949 (i. e. 60 days after ploughing) in which also all the tubers picked from the unploughed field germinated while there was no germination at all from those picked from the ploughed field as shown below:—

*Germination test of Cyperus tubers from ploughed and unploughed fields (Ploughing on 24—1—1949.)*

*I set sown on 9—3—1949.*

*II set sown on 24—3—1949.*

Tuber No.	From unploughed field	From ploughed field	From unploughed field	From ploughed field.
	No. of sprouts from each tuber	No. of sprouts from each tuber	No. of sprouts from each tuber	No. of sprouts from each tuber.
1	One sprout		1	One sprout
2	Two sprouts		2	One „
3	Two „		3	One „
4	Two „	Germination	4	No sprout      Germination
5	Two „	nil	5	Three „      nil
6	One „		6	One „
7	One „		7	One „
8	Two „		8	One „
9	Four „		9	One „
10	One „		10	Two „

The pots were sown on 9—3—49 and 24—3—49 and were watered daily. Within 10 days of sowing all the tubers picked from the unploughed field germinated vigorously. The watering was continued for 1½ months for both the sets of pots. There was no germination at all in the pot in which tubers picked from the ploughed field were sown, while in the pot in which tubers from unploughed field were sown, the cyperus plants have come to flower.

The tubers picked from the ploughed field after 45 and 60 days of exposure in the field after ploughing, were somewhat shrivelled and when broken showed mealy contents. The fresh bulbs picked from unploughed fields were full and fresh and when crushed showed hard moist contents like kernel. Both of them had the same flavour.

Deep P  
subsequent ex  
completely kill  
ploughed soil  
months in this  
the Korai tube  
known that ke  
8 inches which  
deposited deep  
the help of  
appearance in  
blade harrow  
have already  
of tubers are  
paper is to dr  
the control of

For Al

F



Deep ploughing in summer with a mould-board plough and subsequent exposure to sun for a period of 45 days without rain completely killed the cyperus bulbs that were present in the depth of ploughed soil in the fields. These months are usually rainless months in this tract. It is not claimed that deep ploughing kills all the Korai tubers in the entire depth of soil in the field. It is well known that korai tubers are deposited at greater depths in the soil than 8 inches which is the depth of ploughing in this case. The tubers deposited deeper than the ploughing depth, in course of time and with the help of sub soil moisture or subsequent rains, make their appearance in the field. These can only be controlled by working the blade harrow periodically as they come up. But a large mass of them have already been killed by the deep summer-ploughing, as a majority of tubers are located in the top 6 inches of soil. The object of this paper is to draw attention to the function of deep summer-ploughing in the control of cyperus weed occuring in the red sandy loams.



*For All Your Needs*

IN

**FARM MACHINERY**

*Please Consult*

**FARM EQUIPMENTS, LTD.,**

GANAPATHI P. O., COIMBATORE.