Certificate Course on Participatory Irrigation Management (PIM)

Module 6- Water requirement of crops and efficient irrigation methods

Topic 6.2 - Critical stages of crops and crop water requirement



1- When and how much to irrigate the crops?

Every crop has stages since its sowing when the water is most needed. These time slots are termed as Critical Stages of Crops. If a crop had not been irrigated at these times it will affect the productivity and if irrigation is provided beyond these stages, the utility of water will be suboptimal. Scientists, by experiments had found out critical stages of crops. If we irrigate the crops at critical stages it will provide us optimal productivity and use water optimally, therefore irrigation shall be done at critical stages only. Below is the table of various crops depicting their critical stages and depth of water:

	Name of				
	crop			ч-	
		No. of irrigation	Depth of total irrigation (cm)	Critical stages o crop	
1	Maize	2	30	1) 20-25 days after sowing	(2) Flowering stage
2	Millet	2	20	(1) Silking	(2) milky stage
3.	Bazra	2	20	(1) Before flowering	(2) Dough stage
4.	Ground Nuts	2	15	1.Peg formation	2. Pod formation
5.	Soyabean	2	20	1.Blooming	2. Seed formation
6.	Seasame	1	10	50-60% Blooming	
7.	Arhar	1	10-15	Vegetative phase	
8.	Urd	1	10	Vegetative phase	
9.	Mustard	2	15	1. Booting	2. Flowering
10.	Реа	2	15	1. Flowering	2. Pod Formation
Water Loving Crops					
11.	Paddy	7-8	60-70	 Tillering , 2 Panical initiation 	3. Heading 4 Flowering
12.	Wheat	4-5	40-50	 20-25 days after sowing 55-60 days after sowing 	3. 85-90 4. 100- 105 5.120 days after sowing
13.	Potato	10	55	8-10 days interval	
14.	Sugar Cane	10	100	8-10 days interval -	

The crop water is measured with its depth in the field which has units of depth like millimeter, centimeter, or meter. The depth to be provided to the crop in

single irrigation depends upon the depth of its root, it is why the shallow rooted crops require lesser water in one irrigation in comparison to deep rooted crops.

Exercise:

- 1- Enumerate the critical stages in Maize crop?
- 2- What is the total water requirement of a wheat crop (in cm depth)?
- 3- What is the water depth (in cm) of single irrigation in wheat crop?