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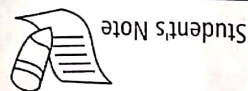
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India's Best Institute for IES, GATE & PSU



$$= 10 \text{ liter/m}^2$$

10 mm of rain per square meter

$$1000 \text{ cm}^3 = 1 \text{ litr}$$



Student's Note

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$$1 \text{ inch} = 25.4 \text{ mm}$$

$$1 \text{ acre} = 4045 \text{ square meter}$$

It takes 27,154 gallons (102,789.34) of water to irrigate one acre of land with an inch of water

1200-1460

(V) Flooding to maturity 100-150 5

(IV) PI to Flooding 400-450 30

(III) Flooding to 400-550 40

(II) Main field preparation 200-250 20

(I) Nursery 50-60 5

State of growth Ag. water req. % of water req. (mm)

Water requirement for rice crop at different stages =

For Rice & Maize



Student's Note

# Student's Note



Depth of water to be maintained during different crop growth stages of the rice

At transplanting	Shallow (2-3 cm)
After transplanting	(4-5)
During tillering	Shallow (2-3) cm

Water flow rate = 5 ltr / second

Land = 4045 sq. meter  
 Water India's Best Institute for IES, UPSC, PSU, etc.  
 10279099

Time it would take = 20558 sec  
 = 342 min  
 = 5.7 hour

# Transpiration & Humidity

Student's Note



Transpiration is the process by which moisture is carried off by the plant from roots to small pores on the underside of the leaves, where it changes to vapour and released to atmosphere.

It is 1% of the moisture found in the air is released by plants through transpiration.

Plants put roots in the soil & absorb water and nutrients up to the stem and leaves.

## Factors affecting

### Temperature

Transpiration rates go up as the temperature goes up, especially during the growing season. High temperature causes the stomata to open, whereas colder temperatures cause the stomata to close.

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## Relative Humidity

When relative humidity of the air surrounding the plants rises the transpiration falls. It is easier for the water to evaporate in drier air than into more saturated air.

## Wind and air movement

Increased movement of the air around a plant will result in higher transpiration rate.

## Soil moisture availability

When moisture is lacking, plants can begin to senesce (premature aging), which can result in leaf loss and transpire less water.



Student's Note

Requirements —

(1) Optimum humidity for rice  
50 + 80 %

Classification of suitability classes of  
maximum temperature and relative  
humidity.

Classes of max temperature (°C) | Suitability class

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27-32 | 60-80 | Highly suitable  
80-85 | Highly suitable  
> 85 | Suitable

32-35 | 60-80 | Moderately suitable  
80-85 | Moderately suitable  
785 | Marginally suitable

> 35 | 60-80 | Marginally suitable  
80-85 | Not suitable  
785 | Not suitable

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Turn on water [ON]



Choose the state of growth [V]

1. Nursery
2. Main field preparation
3. Planting to parish activities
4. P2 to flowering
5. Flowering to maturity

If (a) is selected



if no rainfall is expected in next 3 days

state → P2 to flowering Exp P2 [0 min]

leg → 100-500 mm [Recommended]

Change to Deflower

Once to change

[Stamp]

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Student's Note

Control Servlet (Inner function)

req. in mm = 400

req. in inch =  $\frac{1}{25.4} \times \text{req. in mm}$

flow rate = 5 // 5 ltr/sec.

water requirement = 102790 \* req. in inch

expected time = water requirement

flow rate

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else if rainfall is expected

exp. rainfall = value // in mm

amt. to reduce = 4005 \* exp. rainfall;

water requirement = (102790 \* req. in mm) - (amt. to reduce)

// Create the form

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Student's Note



Rainfall of "value" mm as  
exposed on wet 'n' days

Req  $\frac{1}{2}\%$  = water requirement (Horn)

Get to definit	exit to change
-------------------	-------------------

(okay)



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Recommended value is attend



# Tomato

Student's Note



1. Establishment 25-35
2. Vegetative 20-25
3. Flowering 20-30
4. Yield formation 20-30
5. Ripening 15-20

Total time - 100-140 days

\* Prolonged severe water deficit limits growth and reduces yields which can be corrected by heavy watering later on

\* Water requirement  $\rightarrow$  1-1½ inches of water per week

\* most critical periods for irrigation are during flowering

Potato.

Student's Note



Stages

Water req.

Sprout

0.4 mm

Vegetative Growth

2.4 mm  
~~3.2 mm~~

Tuber Initiation

5.4 mm

Tuber bulking

6.8 mm

Maturation

4.9 mm



https

www.1.agric.gov.in/cv/

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all / page 13571

1-Select stage - [V]

Sprout (0.4 mm)

Veg. Growth (3.2 mm) 2-4 mm

Tuber Initiation (5.4)

Tuber bulking 6.8 mm

Maturation 4.9 mm

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