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# INTERCULTURE TOOLS



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# **Disadvantages of weeds**

**Weeds are menace to crops**

**Harbour insects**

**Compete with crops for water, light,  
and nutrients**

**reduce yield and quality**



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## Loss of yield due to weed

46 % in direct seeded rice

20 % in transplanted rice

- Man hour requirement in manual weeding= 400 man - hour/ha



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# **Classification of weeds**

## **Annual**

**Complete life cycle in one year**

**Propagates through seeds**

**Found in dry hot and dry summer**

**Maintain their existence through seeds**

**Mechanical weed control is less difficult**

**Eliminate the seeds before they reach  
seeding stage**

**Effective control: mechanical and chemical**

**Biennial: neither important nor common**

**Perennial: Common in tropical climate,  
difficult to control, propagate through  
seeds and vegetation**



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# Type of weeding methods

## **MANUAL WEEDING**

**Removing weeds manually by hand or khurpi.**

**It is time consuming and requires intensive labour (400 man hours/ha).**

## **MECHANICAL WEEDING**

**The process of removal of weeds by mechanical means either by**

**Manually operated weeders.**

**Power operated weeders.**

## **CHEMICAL WEEDING**

**Chemical herbicides for control of weeds**

**The chemical used is selective in nature.**



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# **Chemical weedicide**

## **Paddy**

**Butaclor for paddy (After emergence  
i.e After transplanting)**

## **Groundnut:**

**Pendimethyline (Pre- emergence)**

**Imazathapyr ( do)**

**Oxygold (do)**

**Pargasuper (Post Emergence)**



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# TYPES OF WEEDING TOOLS

**Small hand tools**

**Chopping hoes**

**Pull type weeders**

**Push type weeders**

**Push pull type weeders**

**Animal drawn weeders**

**Power tiller operated weeders**

**Tractor operated weeders**

**Small engine operated self – propelled weeder**



## Specifications

The *khurpi* is a small and a very popular hand tool and is available in various shapes and sizes. Most of the design specifications fall in the following ranges.

Overall length (mm)	: up to 350
Length of blade with tang (mm)	: 150-250
Width of the cutting edge (mm)	: 65-150
Weight (kg)	: 0.3-0.70

## Uses

The *khurpi* is used for removing weeds and unwanted plants from the crop. The tool is also used for breaking the surface layer, aeration and mulching of the soil.



**KHURPI**

## Specifications

Raw materials used	
Blade	Mild steel angle and flat
Handle	Wood/bamboo
Dimensions of blade	
Length × Width × Thickness (mm)	115-135×70-85×2-4
Handle diameter (mm)	20-30
Handle length (mm)	450-600
Angle between blade and handle (degrees)	40-50
Weight (kg)	0.30-0.40

## Uses

Used for weeding, loosening of soil and harvesting of tuberous crops like ginger, garlic, onion etc.



**KODALI/SPADE**



## Specifications

### Raw materials used

Prongs	:	Mild steel bar or tor steel.
Ferrule	:	Mild steel tube
Handle	:	Bamboo/wood

### Dimensions of whole fork

Length × Width (mm)	:	300-330×100-120
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### Dimensions of each finger

Length (mm)	:	155-245
Diameter (mm)	:	6-10

No. of fingers	:	3 nos.
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### Dimensions of handle

Diameter (mm)	:	35-40
Length (mm)	:	1200-1500

Weight (kg)	:	0.45-0.50
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## Uses

It is used for breaking soil crust, weeding, and collection of weeds.



**HAND FORK**



**HAND RAKE**

## Uses

The tool is used for aeration in seedbed and lawns. It is also used for collection of trash in nursery beds and scratching/stirring of top layer.



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## **GARDEN RAKE**

*Local name : Napikot*

### **Features**

It is a long handled tool and consists of spikes, welded to a Z section frame made from joining two pieces of angle iron. A ferrule of mild steel tube is welded to the frame in which a wooden handle is inserted for the operation of tool. These spikes are made from mild steel rod, angle or flat section and forged to shape. The tips are made sharp for easy penetration in the soil. The rake is operated by pulling the tool head towards the operator.



### **Specifications**

Raw materials used

Spikes

Mild steel rod, angles, or flat

Handle

Bamboo/Wood

Dimensions of whole fork

Length × Width (mm)

200-300x200-250

Dimensions of each spike

Length (mm)

150-200

Diameter (mm)

6-10

Number of spikes

6 nos.

Dimensions of handle

Diameter (mm)

35-40

Length (mm)

1200-1500mm

Angle between blade and handle (degrees)

90

Weight (kg)

0.70-0.80 (without handle)

### **Uses**

It is used for levelling of beds, crushing of clods, collection of uprooted weeds and aeration of soil.