

# AGRICULTURAL & HORTICULTURAL MATERIALS





# Tunnel Pipe

As a high quality product , Tunnel pipe have been used by many consumers at Japan more than 40 years

## Organic Spinach



Tunnel Ø 11 x 2100 mm

## Strawberry



Tunnel Ø 11 x 2400 mm

## Organic Lettuce



Tunnel Ø 11 x 2100 mm

### Features :

- Protect plant from rain and pest.
- Size and design are uniform.
- The plastic cover (shrink film) is easy to open when summer.
- The plastic cover (shrink film) is easy to close when rainy or evening.
- The plastic cover is changeable or combine with net.
- Steel pipe coated by polyolefin which is environmental friendly.
- Lightweight, strong and durable
- Suitable to horticulture plant (chili, melon, tomato etc)

## Tobacco Nursery



Tunnel Ø 13.7 x 3000 mm

## Melon



Tunnel Ø 13.7 x 4200 mm

## Takiron's Tunnel Pipe and Natural Bamboo Comparison

### Takiron's Tunnel Pipe



- The form is in standard size .
- The plastic cover can be installed properly
- Easy installation
- Safe to handle
- Light, strong, and durable (+ 10 years).

### Natural Bamboo



- The form is not in standard size .
- The plastic cover cannot be installed properly.
- Disorderly
- Difficult to make, install and maintain
- May cause in injuries
- Not long last products

# How To Install Tunnel Pipe



1 Prepare the seedbed



2 Interval/space of Tunnel each pipe 70 - 90 cm



3 At the end of seedbed tunnel pipe is installed with tilting angle of 22°



6 Spread the plastic cover on tunnel pipe then clip it with the packer



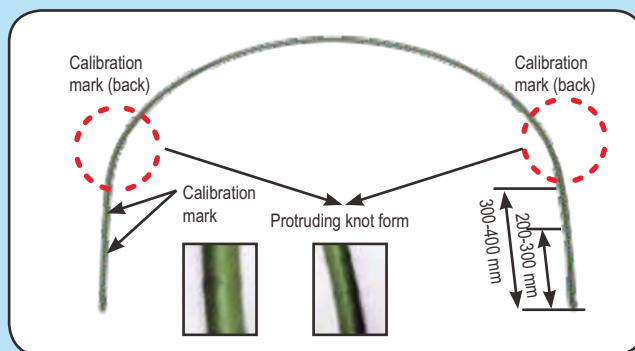
5 Plug the wooden pegs at the end of seedbed which covered by plastic cover then bundl the end of plastic cover onto wooden pegs



4 Install all tunnel pipe neatly, make sure the spacing and hight of each Tunnel are same/ balance

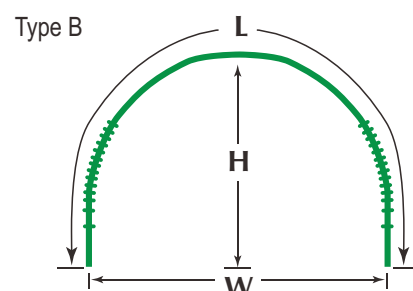
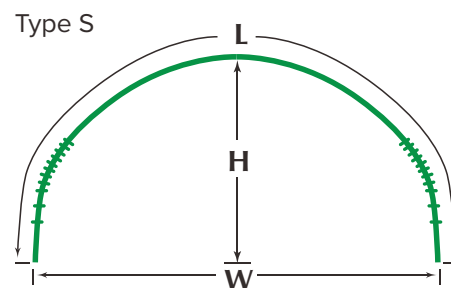


7 Tunnel pipe is ready



## Specifications

| Diameter (mm) | Type | Length (L) mm | Width (W) mm | Height (H) mm | Package Bundle/pcs |
|---------------|------|---------------|--------------|---------------|--------------------|
| 8             | 4B   | 1200          | 500          | 490           | 50                 |
|               | 5B   | 1500          | 650          | 600           |                    |
|               | 6B   | 1800          | 860          | 700           |                    |
| 11            | 5S   | 1500          | 830          | 540           | 50                 |
|               | 6S   | 1800          | 1020         | 630           |                    |
|               | 7S   | 2100          | 1200         | 750           |                    |
|               | 7B   | 2100          | 900          | 800           |                    |
|               | *    | 2400          | 1240         | 860           |                    |
|               | *    | 2700          | 1240         | 1010          |                    |
|               | *    | 3000          | 1240         | 1160          | 25                 |
| 13,7          | *    | 2700          | 1150         | 1020          | 25                 |
|               | *    | 3000          | 1150         | 1170          |                    |
|               | *    | 3300          | 1150         | 1320          |                    |
|               | *    | 4200          | 1150         | 1770          |                    |
|               | *    | 4200          | 2600         | 1330          | Special order      |



Note :(\*) Special order  
(1 pack = 5 pcs)



# Plant Stakes

As a high quality product , Tunnel pipe have been used by many consumers at Japan more than 40 years



**Features:**

- Steel pipe coated by Polyolefin which is environmental friendly.
- Easy to assembly, maintenance, and disassembly.
- Neat
- Protruding "Knots" at every 2 cm interval, so that vines can not easily slip off and easy to tie plants to the stake
- Calibration mark to make the height and embedding depth uniform and it cans measuring hight of the plant.
- Water-resistant cap.
- Suitable to horticulture plant (Chili, Melon, Tomato, etc).

## Takiron's Plant Stake and Natural Bamboo Comparison

### Takiron's Plant Stakes



### Natural Bamboo



- Plant stakes are easier to clean after used than natural bamboo.
- Endurance of plant stake about 10 years and Natural bamboo 3 times usage.
- Plant stake are more neatly in assembly and stroge natural bamboo rather than.
- Plant stake are durable againt rust, insect and rotten, very opposite with natural bamboo.



# How to Install Plant Stakes

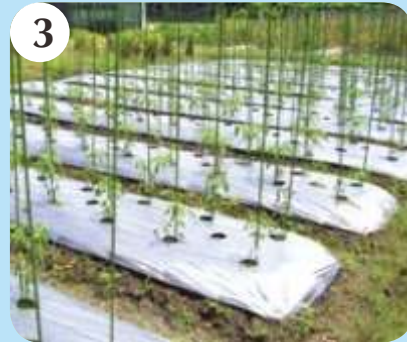
## CHILI



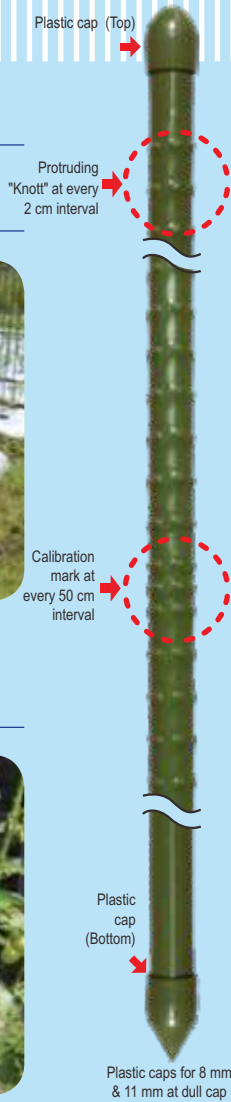
Install Plant Stakes



Bind the plant with plant stake



Plug the Plant stake upright



## TOMATO



Install Plant Stakes



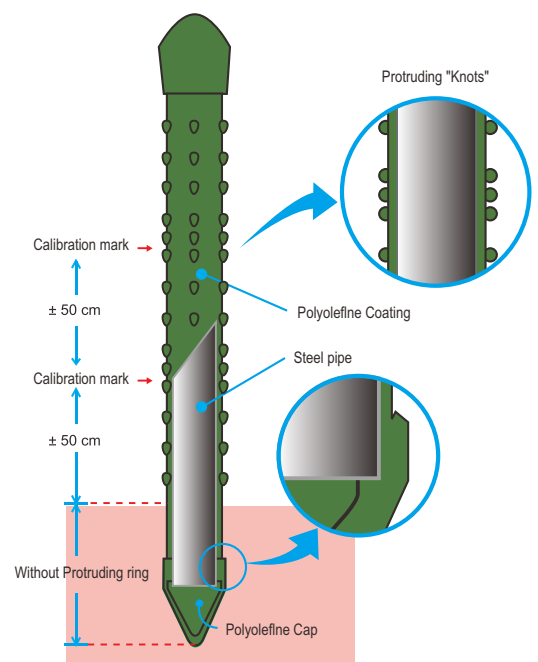
Bind the rod with plant stake



Plug the plant stakes in cross

## Specification

| Diameter mm | Length mm | Package Bundle/Pcs |
|-------------|-----------|--------------------|
| 8           | 750       | 100                |
|             | 900       |                    |
|             | 1200      |                    |
|             | 1500      |                    |
|             | 1800      |                    |
| 11          | 750       | 100                |
|             | 900       |                    |
|             | 1200      |                    |
|             | 1500      |                    |
|             | 1800      |                    |
|             | 2100      |                    |
| 16          | 900       | 50                 |
|             | 1200      |                    |
|             | 1500      |                    |
|             | 1800      |                    |
|             | 2100      |                    |
|             | 2400      |                    |
| 20          | 1200      | 25                 |
|             | 1500      |                    |
|             | 1800      |                    |
|             | 2100      |                    |
|             | 2700      |                    |



# Takiron Plant Shelter



## Functions :

- Protecting plant from rain
- Protecting plant from UV light and sun
- Suitable for horticulture plants (chili, melon, tomato, etc)

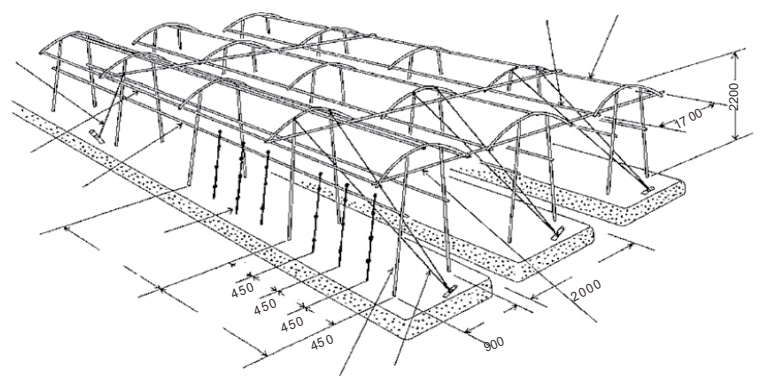
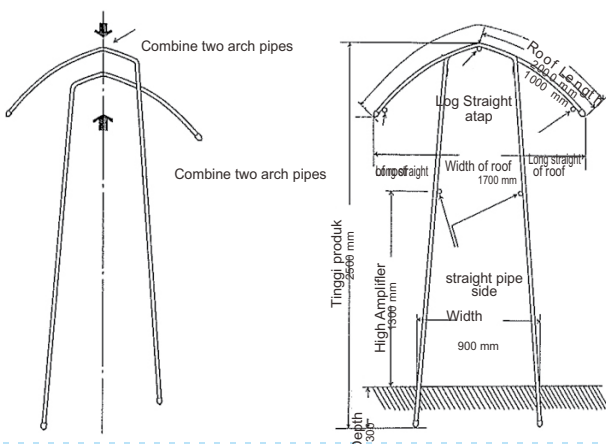
## Features :

- Portable / easy to assemble and disassemble
- Low cost for shelter / mini green house
- Last long and durable

## Specification

| Product                      |       | Specification                                  | Picture |
|------------------------------|-------|--|---------|
| Takiron plant shelter "arch" |       | Diameter (Ø) x Length (L)<br>Ø 16 x P 3.700 mm |         |
| Straight Pipe                | Brace | Ø 16 x L 3.800 mm                              |         |
|                              | Roof  | Ø 16 x L 3.800 mm                              |         |
|                              | Side  | Ø 16 x L 4.200 mm                              |         |

## Specification



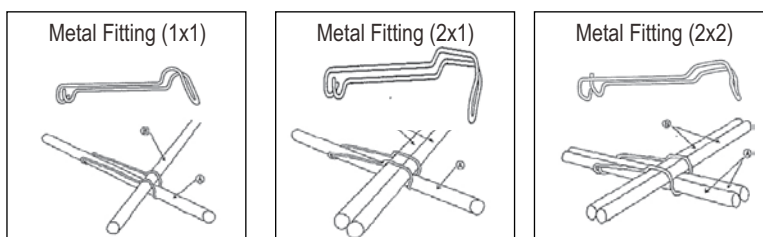




## Fitting Product

| Product       | Specification | Picture | Noted                        |
|---------------|---------------|---------|------------------------------|
| Metal Fitting | 1 x 1         |         | Connect 1 pipe with 1 pipe   |
| Metal Fitting | 2 x 1         |         | Connect 2 pipes with 1 pipe  |
| Metal Fitting | 2 x 2         |         | Connect 2 pipes with 2 pipes |

## Metal Fitting and Installation



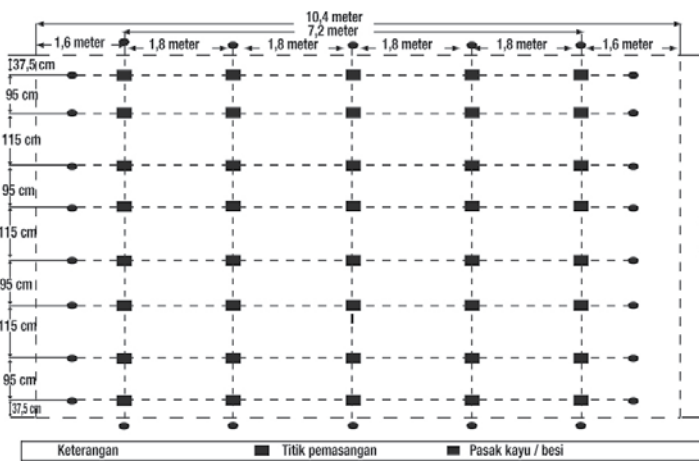
## Parts List

| Name of Products |                          | Amount |        |
|------------------|--------------------------|--------|--------|
| Pipe             | Arch Ø 16 x 3700 mm      | 40 pcs |        |
|                  | Roof Ø 16 x 3800 mm      | 24 pcs |        |
|                  | Side Ø 16 x 3800 mm      | 16 pcs |        |
|                  | Reinforce Ø 16 x 4200 mm | 8 pcs  |        |
| Metal Fitting    | Main Body                | 1 x 1  | 64 pcs |
|                  |                          | 2 x 1  | 32 pcs |
|                  |                          | 2 x 2  | 4 pcs  |
|                  | Brace                    | 1 x 1  | 56 pcs |
| 2 x 1            |                          | 8 pcs  |        |
| HG packer        | Ø 16 mm                  | 64 pcs |        |
| UV Plastic Film  | L : 2 m : P 50 m         | 1 Roll |        |
| Wire             | Ø 1.5 - 2 mm ; 1.5 kg    | 90 m   |        |
| Plastic tape     | L : 5 cm                 | 1 pcs  |        |
| Iron Wedge       | 50 - 80 cm               | 12 pcs |        |

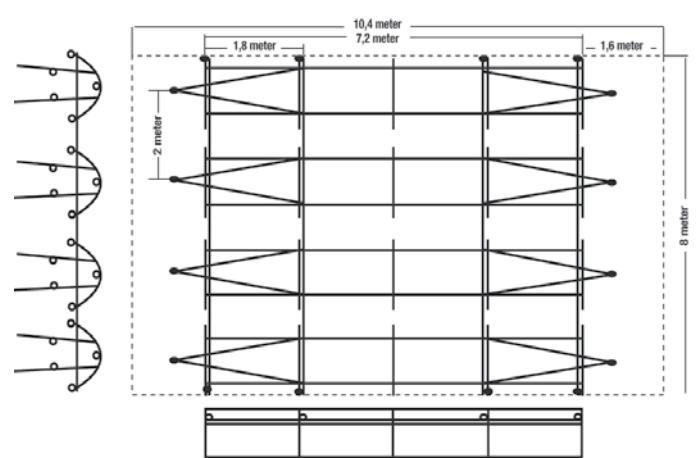
# Takiron Plant Shelter



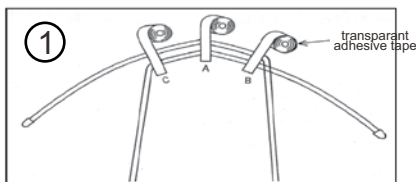
## Embedding Point



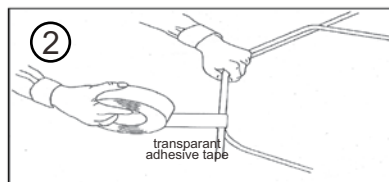
## Final Result Visualization



## How to Install



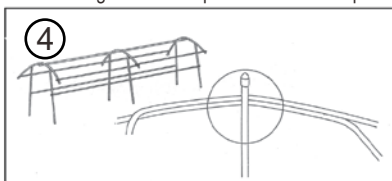
Combining Two Arch Pipe with adhesive tape



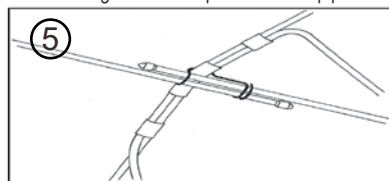
Sticking Adhesive tape to the arch pipe



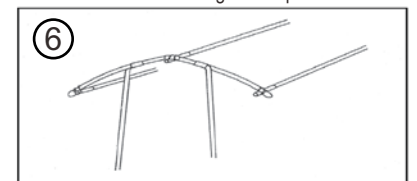
Embedding Arch Pipe



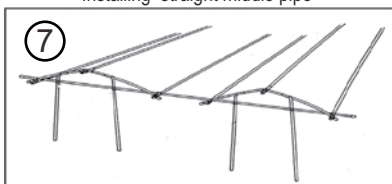
Installing straight middle pipe



Installing connections



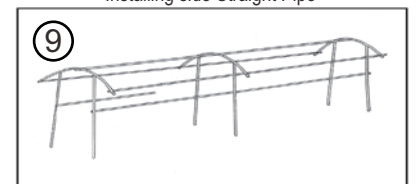
Installing side Straight Pipe



Installing Reinforcement Pipe



Installing the iron wedge



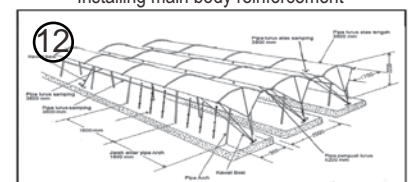
Installing main body reinforcement



Installing plastic roof



Installing the wire and HG Packer



Result L=7.2m, W=8m, H=2.2m





Takiron Plant Shelter WIDE - 1 set installation area (3.5 x 8.4 m)

**Takiron Plant Shelter WIDE** is a new breakthrough from the latest generation of Plant Shelter.

We are trying to fulfill our farmers' necessity with our new design which supports more coverage, lowers the cost, and is also easier to apply.

## Purposes and Advantages

### Purposes

- Covering plant from rain
- Sheltering plants from excessive UV light from solar
- Protec (full coverage)

### Advantages

- Faster to construct
- Larger coverage (4 sets cover more than 100 m<sup>2</sup>)
- Room-oriented shelter
- Easy for mobilization (installing and uninstalling)
- Low cost in both delivery and installation (labor cost)

## Part List

| Takiron Plant Shelter WIDE           |                        |         |             |      |            |                   |
|--------------------------------------|------------------------|---------|-------------|------|------------|-------------------|
| Unit                                 | Diameter (mm)          | Length  | Weight (kg) | Unit | Total Unit | Total Weight (kg) |
| Arch Pipe                            | 16                     | 3700 mm | 1.24        | PCE  | 16         | 19.84             |
| Straight Pipe                        | 16                     | 4200 mm | 0.67        | PCE  | 12         | 8.04              |
| Knotty Pipe                          | 20                     | 2700 mm | 0.59        | PCE  | 8          | 4.72              |
| Metal Fitting                        | 1 x 1                  |         | 0.025       | PCE  | 32         | 0.80              |
|                                      | 2 x 1                  |         | 0.028       | PCE  | 8          | 0.22              |
| Joint Part                           | 2P                     |         | 0.18        | PCE  | 6          | 1.08              |
|                                      | 4P                     |         | 0.30        | PCE  | 2          | 0.60              |
|                                      | 5P                     |         | 0.37        | PCE  | 6          | 2.22              |
| Sleeve                               | 16                     |         | 0.005       | PCE  | 42         | 0.21              |
|                                      | 20                     |         | 0.008       | PCE  | 8          | 0.06              |
| HG Packer                            | 16                     |         | 0.0075      | PCE  | 44         | 0.33              |
| UV Plas film                         | Width (W) x Length (L) |         | 8.00        | roll | 1          | 8.00              |
|                                      | 5m x 9 m               |         |             |      |            |                   |
| Galvanized wire                      | 1.6                    | 50 m    | 0.83        | roll | 1          | 0.83              |
| Turbuckle                            | m8                     |         | 0.20        | PCE  | 2          | 0.40              |
| Ironod                               | 50 - 80 cm             |         | 0.30        | PCE  | 2          | 0.60              |
| Total weight without UV Plastic Film |                        |         |             |      |            | 39.96             |
| Total Weight                         |                        |         |             |      |            | 47.96             |



Joint Part 2P



Joint Part 4P



Joint Part 5P

## Product Insight



Inside

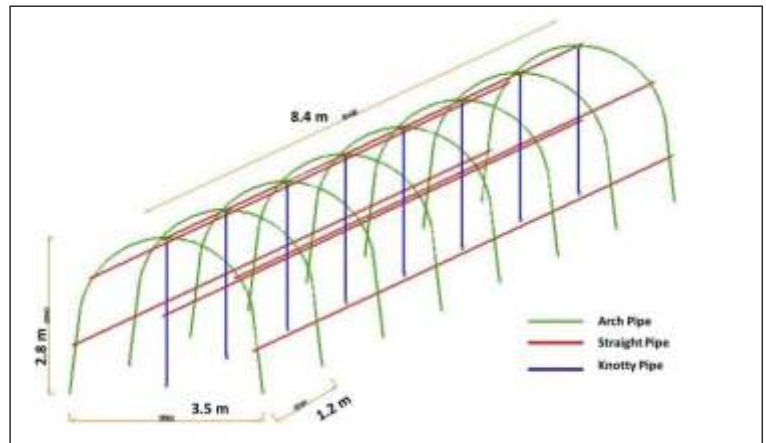


Sideview



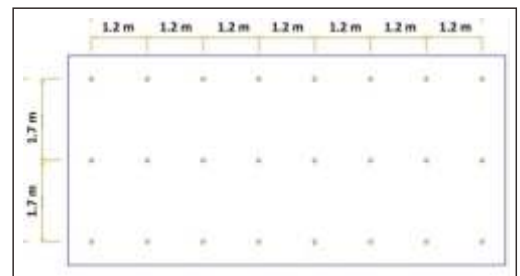
Frontside

## Specification

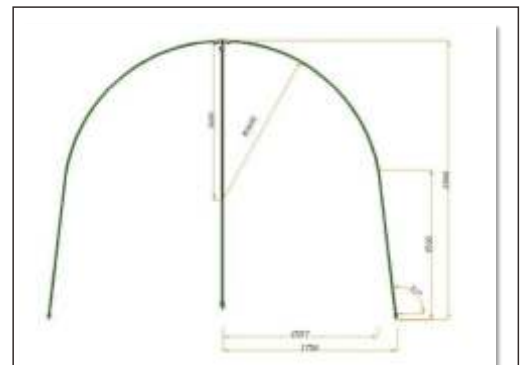


1 set of Takiron Plant Shelter WIDE = 29.4 m<sup>2</sup> (8.4 x 3.5 m)

Embedding points for pipes



Front View



## Application (With screen modification)



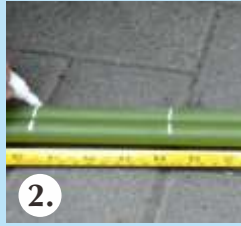
\*WARNING : Wind Pressure and type of the soil affect the construction product



## Installation steps



1. Measure area, make embedding points



2. Mark the straight pipe for joint part placements



3. Installing all joint part 4P and joint part 5P



4. Connect knobby pipes to the joint part



5. Embed the pipe combinations



6. Attach arch pipes



7. Installing main body reinforcement



8. Embed the iron rod



9. Connect iron rod with turnbuckle to fasten



10. Apply plastic film as roof



11. Brace plastic film with HG Packer



12. Takiron Plant Shelter Wide is ready to use

## The Different Purposes between TPS and TPSW

Takiron Plant Shelter



Bed Oriented

Takiron Plant Shelter WIDE



Room oriented

## Why using Takiron Plant Shelter WIDE instead of galvanized greenhouse?

### Galvanized Greenhouse

|                                  |                         |                          |
|----------------------------------|-------------------------|--------------------------|
| Hard to Install                  | Permanent               | Expensive                |
| Need many labors to build        | Weigh more              | Takes more Time to build |
| Browning leaves by the zinc dust | Leakage of zinc to soil |                          |

### Takiron Plant Shelter WIDE

|                                  |                   |                         |
|----------------------------------|-------------------|-------------------------|
| Easy to install                  | Portable          | Low cost                |
| Less people needed to build      | lighter           | Short time Installation |
| No leakage of chemical substance | No soil contamina |                         |

# Arch Pipe



Long bean (Arch Pipe Ø 13.7 x 1800 mm)



Asagau or Glory morning (Arch Pipe Ø 13.7 x 1800 mm)



Hearleaf maderavine madevin (Arch Pipe Ø 11 x 1800 mm)

## Features :

- Light, strong, and durable.
- Steel pipe is coated by Polyolefin.
- The pipe is strong against rust and rotten.
- Covering by water-resisten caps.

## Functions :

- Plant propagation media
- Added aesthetic value to plants

## Arch pipe and natural bamboo comparison

### Arch pipe

1. Easy to use, such as :
  - a. Does not need to be split & smooting anymore
  - b. Safe for hand usage
2. Size are uniform .
3. Durable about 10 years .

### Natural bamboo

1. Dificult to use, such as :
  - a. Need tobe splitted
  - b. Need to be mashed
  - c. Easy to injure the hand .
  - d. Need to be bend
2. Size are not uniform
3. Fragile / Unsturdy

## Specification

| Diameter (mm) | Length (mm) | Width (mm) | Height (mm) | Package Bundle/Pcs |
|---------------|-------------|------------|-------------|--------------------|
| 11            | 2500        | 200        | 1200        | 15                 |
|               | 3130        | 250        | 1500        |                    |
| 13.7          | 3760        | 300        | 1800        | 10                 |
|               | 4400        | 350        | 2100        |                    |

Long bean (Arch Pipe Ø 13.7 x 1800 mm)



## EK CROSS



## FLOWER SUPPORT FOR ORCHID



Specification of EK Cross

| Diameter (mm) | Length (mm) | Package (Bundle/pcs) |
|---------------|-------------|----------------------|
| 20 mm         | 1800        | 25                   |
|               | 2100        |                      |
|               | 2400        |                      |

Specification of Flower Support for Orchid

| Diameter (mm) | Length (mm) | Package (pack/pcs) |
|---------------|-------------|--------------------|
| 3.2 mm        | 500         | 10                 |
|               | 600         |                    |
|               | 700         |                    |
|               | 1000        |                    |

| Diameter (mm) | Length (mm) | Package (pack/pcs) |
|---------------|-------------|--------------------|
| 4.0 mm        | 650         | 10                 |
|               | 750         |                    |
|               | 1000        |                    |

## FLOWER SUPPORT WIRE WITH CIRCLE



Specification Flower Support Wire with Circle

| Diameter (mm) | Type | Hieght (mm) |
|---------------|------|-------------|
| 8             | 4    | 450         |
|               | 5    | 540         |
|               | 6    | 600         |
|               | 8    | 750         |
|               | 10   | 900         |

# Estimation

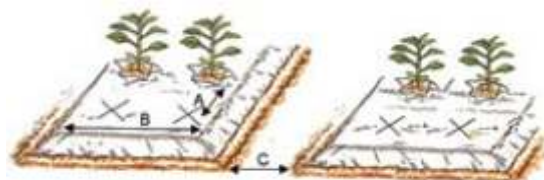
Tunnel pipe requirement per hectare

| Diameter (mm) | Length (mm) | Quantity (Pcs/Ha) |
|---------------|-------------|-------------------|
| 8             | 1200        | 11819             |
|               | 1500        | 10400             |
|               | 1800        | 8905              |
| 11            | 1500        | 9091              |
|               | 1800        | 8025              |
|               | 2100        | 7223              |
|               | 2100        | 8667              |
|               | 2400        | 7066              |
|               | 2700        | 7066              |
| 13.7          | 3000        | 7066              |
|               | 2700        | 7429              |
|               | 3000        | 7429              |
|               | 3300        | 7429              |
|               | 4200        | 4063              |

Note : 1. Between tunnel pipe 1 meter  
2. Irrigation wide 0 - 6 meter  
3. Seed bed length per / meter

Plant stake requirement per hectare

| Plant name | Spacing |        |            | Quantity  |
|------------|---------|--------|------------|-----------|
|            | Between | Bed    | Irrigation |           |
| Melon      | 60 cm   | 100 cm | 60 cm      | 20900 pcs |
| Chili      | 60 cm   | 110 cm | 50 cm      | 20900 pcs |
| Long bean  | 35 cm   | 100 cm | 60 cm      | 35800 pcs |
| Oyong      | 80 cm   | 120 cm | 60 cm      | 13900 pcs |
| Parea      | 60 cm   | 110 cm | 50 cm      | 20900 pcs |
| egg plant  | 60 cm   | 120 cm | 50 cm      | 19700 pcs |
| Cucumber   | 40 cm   | 100 cm | 50 cm      | 33400 pcs |
| Tomato     | 50 cm   | 80 cm  | 50 cm      | 30800 pcs |



Example using Plant Stake

| Diameter Length | 8 | 11 | 16 | 20 |
|-----------------|---|----|----|----|
| 750             |   |    |    |    |
| 900             |   |    |    |    |
| 1200            |   |    |    |    |
| 1500            |   |    |    |    |
| 1800            |   |    |    |    |
| 2100            |   |    |    |    |
| 2400            |   |    |    |    |

Tomato    Cucumber    Eggplant    Paprika    Flower    Fruit & Beans  
 Tomato    Cucumber    Eggplant    Paprika    Flower    Fruit & Beans

## Products



## Applications at Jambore Varietas PF2N Yogyakarta





## Product Applications



## Creative Applications





## **AGRICULTURAL & HORTICULTURAL MATERIALS**



### **CAUTION**

- The Coated steel pipe is support pole for agriculture and horticulture. Do not for other purposes.
- The Coated steel pipe is a thin wall steel pipe coated with a resin. When the surface and the steel pipe get scartched, it my rust and break.
- When a strong impact or heavy load is applied to the Coated Steel Pipe, it may bend, fracture, or crash.
- When the ground is hard, make a hole beforehand. If the pole is to be driven in the ground, use "Plant Stakes for Pilling"
- When driving the coated steel pipe in the ground, hold a part of the pipe as close to the ground as possible. When a force is applied while holding an upper part, it may bend or fracture.
- Do not use a bent coated steel pipe. Do not try to straighten a bent coated steel pipe. When it is forcibly straightener, it my fracture.
- Do not use a fractured coated steel pipe. Because a sharp metal is exposed at the edge of a broken steel pipe, it may cause injuries.
- Do not cut a coated steel pipe. The steel pipe may rust, and a sharp edge may cause injuries.
- For easy insertion into the ground, the coated steel pipe is equipped with a pointed cap. Take precautions is handling, storage, and display.
- Coated steel pipe related products listed in the catalogue are used according to the specific agriculture or horticulture application. There are products with springs and protrusions, so take precautions to prevent injuries.



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