

# IMPLEMENTATION GUIDELINES - 2020-21

## 1. Area Expansion- Spices: Seed Spices (Coriander Crop)

### A. Pattern of Assistance

S.No	Item	Unit	Unit Cost	Pattern of Assistance
1	Spices (Seed Spices)	Ha.	Rs.30,000/ ha	Maximum of Rs. 12,000/- per ha. (40% of cost) for meeting the expenditure on planting material and cost of material for INM/ IPM etc

### B. Component wise Package:

S.NO	Component	Description	Rate	Total unit Cost in Rs.	Subsidy in Rs.
1	Seeds	Seed rate @ 15 Kg per Ha.	Rs.160 per Kg	2400	2400
2	Inputs				
i	Manures & Fertilizers	Fertilizers (4 Bags Urea, 5 Bags SSP, 2.5 Bag MOP), 20 Tonnes FYM, 4-5 tonnes of Vermicompost & other biofertilisers	LS	15000	5000
ii	PP Chemicals	Carbendazim-2.5 Kg, Acephate-2.5 Kg, Dimethoate 2.5 litre, COC- 3 Kg Neem Oil 10 litres & biopesticides	LS	12600	4600
	<b>Total</b>			<b>30000</b>	<b>12000</b>

- i. Coriander crop is proposed for Area Expansion- Seed Spices during 2020-21
- ii. The maximum eligibility is one Hectare per beneficiary.
- iii. The required Seed of Coriander crop varieties shall be procured by SHM, Hyd from NRC-Seed Spices, Ajmeer, Rajasthan, HRS- Lam, Guntur, AP and other reputed national institutes.
- iv. The subsidy amount pertaining to Seeds shall be released to NRC-Seed Spices, Ajmeer, Rajasthan (or) HRS- Lam, Guntur, AP (or) other reputed national institutes in advance as 100% subsidy on seed component.
- v. The subsidy amount pertaining to Inputs like Manures & Fertilisers and PP chemicals shall be released to the beneficiary after submission of release proposal by DHSO with the approval from DMC for all components (Seed & inputs). Though seeds have been supplied in advance by SHM, Hyd, the seed component must be included in subsidy release proposal.
- vi. The Non-negotiables and other implementation guidelines of Area Expansion component shall be applicable for Area Expansion Spices also.

## **PROTECTED CULTIVATION (Precision Farming)**

### **A. SHADENET HOUSES**

#### **Objectives:**

- ❖ Enhancing productivity.
- ❖ Promotion of high value Horticulture crops under Shade Net Houses.
- ❖ Propagation of planting material to improve germination percentage and better hardening.
- ❖ Year-round production of floricultural crops and off-season production of vegetables crops.

#### **i. Pattern of Assistance:**

<b>S.No</b>	<b>Item</b>	<b>Max permissible Cost</b>	<b>Pattern of Assistance</b>
1	Shadenet House (Tubular structure )	Rs.710/Sqm	50% of cost limited to 4000 Sq.m.per beneficiary.

- ii.** General guidelines, eligibility criteria, trainings, Construction, Terms & Conditions, Inspections, Formats for Application, Affidavit, Joint Inspection etc., and Check list applicable to Polyhouses shall holds applicable for Sahdenet Houses also.

#### **iii. Indicative Specifications for Shadenet house under Protected Cultivation**

##### **Shade net House (Dome shaped/Top Flat)**

<b>Sl. No.</b>	<b>Particulars</b>	<b>Description</b>
1	Area in sqm	1000 to 4000 sqm
2	Length of structure	As per design
3	Width of the structure	As per design
4	Grid	4 m x 6 m
5	Straight Corridors	Maximum 2 m all sides for area calculation

**Structural parts (GI Pipes) Shade net House :**

GRID Size:6mx4m			Shade Net Height from GL -4m		
S.no	Particulars	PIPE SIZE OD in mm	NOMINAL DIA	Unit wt(kg/m)	LENGTH (m)
1	Foundations for Balcony pipes	48mm/3mm thickness	1.5"	3.5	1.2
2	Foundations for Outer Columns	48mm/3mm thickness	1.5"	3.5	1
3	Foundations for Inner Columns	48mm/3mm thickness	1.5"	3.5	0.75
4	Main(All) Columns	60mm/2mm thickness	2"	2.9	4
5	Truss Pipe (Along the gable)	48mm/3mm thickness	1.5"	2.3	6
6	Purlin Pipe (Across the gable)	48mm/3mm thickness	1.5"	2.3	4
7	Corridor/Balcony Pipe	60mm/2mm thickness	2"	2.9	4.8
8	Horizontal Member in Corridor	33mm/2mm/thickness	1.5"	1.6	1.2
9	Knee bracing at all columns	33mm/2mm/thickness	1.5"	1.6	1.2
2.5 m wide corridors for 4m height shall be provided on all four sides					

- Lengths upto 200mm may vary from fabricator to fabricator based on their clamping/jo mechanism/design.

**Other parts of the structure Shade net House:**

Sl. no	Particulars	Specifications
1	Clamps	Should be made from minimum 2.5mm thickness MS sheets and hot dip galvanized. The clamps shall resist 400 hours of salt spray test.
2	Bolts, Nuts and Washers	High tensile bolts, nuts and washers with a minimum size of 3/8" or M10 and Zinc Plated to White or Yellow color. This hardware shall resist 150 hours of salt spray test.
3	Galvalume profiles	These profiles made of GI sheet strip of minimum 0.6mm thickness and coated with Aluminum alloy and should have the provision to run two springs.
4	Zig - Zag Springs	The springs shall be made of high tensile steel wire with a minimum diameter of 2.5 mm and coated with Zinc /PP/HDPE materials.

5	Insect Proof Net	UV stabilized insect proof net (preferable in white color) made of HDPE monofilament fabric to the size of 40 mesh/50 mesh having a minimum weight of 105 GSM.
6	Shade Net - Tape Type	UV Stabilized shade net made of tape type yarn from HDPE virgin raw materials. Preferably white color shade net with 50% shade shall be used for cultivation purpose and Green /Black color shall be used for Nursery applications. The 50% shade net should be of minimum 90 GSM
7	Shade Net - Monofilament type	UV stabilized shade net made of monofilament yarn from HDPE virgin raw material. Preferably white Color Shade net with 50% shade shall be used for cultivation purposes and Green/ Black color shall be used for Nursery applications. The shadenet with minimum 115 to 125 GSM should be used in shadenet structural applications.
8	Human Entry	The Human entry should be free from the main structural members and foundations. The human entry should be fixed within the balcony area with independent foundations. The human entry shall have a double door entry system with a minimum cubicle size of 4m(L)x 3m(W) x 2m(H). The cubicle shall be made of independent structural members with two doors and covered with insect proof net/ Apron materials. The doors shall not have any gaps or vents, and preferably fitted with air sealing materials.
9	Tractor entry	The tractor entry should be free from the main structural members and foundations. The tractor entry should have a minimum size of 2.7 width and 2.7 height with independent structural members. The entry shall have a collapsible door system covered with insect proof net. Air sealing materials shall be used in door system.

**Entry Room (2 door of 2m x 2m Aluminum and poly carbonate mix)**

Sl. No	Description	Specification
1	Entry room size	4 m x 4 m, 4 m x 3 m, 3 m x 3 m
2	No of doors	02 (inner door may be of frame stitched with 40 mesh insect net of minimum 50 cm overlapping)
3	Door size	1.2 m x 2 m; Door of GI square pipe

4	Frame of door (ISA four sides to cover the gap below the door)	Galvanized
5	Half part of door (Downside)	Aluminum sheet
6	Upper half part of door	Poly carbonate sheet <b>5 mm</b> thick
7	Flooring	Bricks flooring with plaster 15 mm thick

### MI Component

### Indicative Quantity of Material of Drip/Fogging System in Poly house/Net House

Sl.No	Description of Items	Unit	Size of Poly House(sqm)			
			500	1008	2080	4000
<b>A</b>	<b>Drip System</b>					
1	Main and Submain Line PVC 63 mm x 4 kg/cm <sup>2</sup>	Meter	36	48	70	110
2	Main Line PVC 75 mm x 4 kg/cm <sup>2</sup>	Meter	0	0	0	60
3	16mm LLDPE Lateral line CL-2	Meter	60	70	130	200
4	Inline 16mm, 1.3 to 2.4LPH @ 20-40 cm CL2	Meter	260	500	2000	4000
5	Ball Valve 63 mm (Moulded Seal, Plain)	Nos.	2	2	2	2
6	Ball Valve 75 mm (Moulded Seal, Plain)	Nos.	0	0	0	1
7	Submain Flush Valve 40mm	Nos.	2	2	2	2
8	Submain Line for Flusing 40 mm X 6 kg	Meter	30	40	60	110
<b>B</b>	<b>Fogging Machine</b>					
1	Main and Sub-main Line PVC 50 mm x 6 kg/cm <sup>2</sup>	Meter	36	42	70	110
2	Main and Sub-main Line PVC 63 mm x 6 kg/cm <sup>2</sup>	Meter	0	0	210	60
3	16mm LLDPE Lateral line	Meter	250	450	900	1900
4	4 way Fogger Assembly with HP LPD	Nos.	82	125	280	585
5	Ball Valve 50mm (Teflon Seal, Plain)	Nos.	2	1	1	0
6	Ball Valve 63mm (Teflon Seal, Plain)	Nos.	0	0	0	1

7	Submain Flush Valve 40mm	Nos.	2	2	2	2
8	GI Wire 2mm thick	Meter	200	350	800	1400
9	Submain Line for Flusing 40 mm X 6 kg	Meter	36	42	60	110
<b>C</b>	<b>Filteration Unit</b>	Nos.	1	1	1	0
1	Disc filter 25 m3/hr	Nos.	0	0	0	1
2	Disc filter 40 m3/hr	Nos.	1	1	0	0
3	Sand filter 10 m3/hr	Nos.	1	1	0	0
4	Sand filter 25m3/hr	Nos.	0	0	1	0
5	Sand filter 40 m3/hr	Nos.	0	0	0	1
6	Manifold GI + GMV	Nos.	1	1	1	1
7	Ventury Assembly Complete	Nos.	1	1	1	1
8	Air Release Valve Assembly 1"	Nos.	1	1	1	1

**Note:**

1. The list above under MI component is tentative. However, the actual material to be used at site may vary as per structural design requirement and this will be binding to the firm.
2. The width of insect nets rolls available is 3.6 meter or more. The stitching below 3.0 meter is not permitted. Above 3.0 m, if needed, the double stitching shall be done with machine using UV stabilized thread.

A model bill of materials for Shadenet houses is as below:

**BOM OF DOME SHAPED STANDARD SHADE NET HOUSE WITH ALUMINET**

DOME SHAPED TOP NET HEIGHT ABOVE GROUND LEVEL - 6 m			GRID SIZE: 6m X 4m		TOTAL AREA :		4081 sq.m			
S.No	Description	Qty	Unit	Description	Qty	Unit	<b>DOME SHAPED STANDARD SHADE NET HOUSE WITH ALUMINET</b>			
1	GABLE LENGTH	8 m		NET GABLE LENGTH	48 m					
2	SHADE SPAN WIDTH	4 m		NET SHADE SPAN WIDTH	72 m					
3	No. OF GABLES	8 No		NET CULTIVABLE AREA	3456 sq.m					
4	No. OF SHADE SPANS	18 No		GROSS GABLE LENGTH	53 m					
5	BALCONY ON FOUR SIDES	2.5 m		GROSS SHADE SPAN LENGTH	77 m					
6	Height of NET HOUSE	5 m		GROSS SHADE AREA	4081 sq.m					
S.No	Description	Specification		Nos	Qty	Unit	Rate	Amount		
<b>A STRUCTURAL MATERIALS</b>										
1	Foundations for Balcony pipes	OD: 48mm/3mm/1.2m		56	235.2	kg	65.00	15288.00		
2	Foundations for Outer Columns	OD: 48mm/3mm/1m		52	182.0	kg	65.00	11830.00		
3	Foundations for Inner Columns	OD: 48mm/3mm/0.75m		119	312.4	kg	65.00	20304.38		
4	Main (All) Columns	OD: 60mm/2mm/4m		171	2052.0	kg	65.00	133380.00		
5	Truss Pipe (Along the gable)	OD: 48mm/2mm/6m		152	2143.2	kg	65.00	139308.00		
6	Arch Pipe	OD: 48mm/2mm/6.4m		152	2280.00	kg	65.00	148200.00		
7	Center support pipe	OD: 33mm/2mm/1.0m		152	243.20	kg	65.00	15808.00		
8	Purlin Pipe (Across the gable)	OD: 48mm/2mm/4m		306	2876.40	kg	65.00	186966.00		
9	Corridor/Balcony Pipe	OD: 60mm/2mm/4.8m		56	806.4	kg	65.00	52416.00		
10	Horizontal Member in Corridor	OD: 33mm/2mm/1.2m		56	107.5	kg	65.00	6988.80		
11	Knee bracing at all columns	OD: 33mm/2mm/1.2m		342	656.6	kg	65.00	42681.60		
12	HUMAN ENTRY	Double Door System		1	1	set	20000.00	20000.00		
13	TRACTOR ENTRY	AS PER SPECIFICATIONS		1	1	set	14000.00	14000.00		
14	CLAMPS, COUPLERS AND ALL HARDWARE ITEMS	2.5mm thick/300 GSM		LS	4081	sq.m	20.00	81620.00		
SUB-TOTAL-A								888790.78		
EXCISE DUTY + 12.5%								111098.85		
<b>TOTAL-A</b>								<b>999889.62</b>		
<b>B CLADDING MATERIALS</b>										
1	OPTINET OR EQUIVALENT ON TOP	OPTINET: 40MESH 120 GSM/ WHITE C		4286.5	4287	sq.m	70.00	300056.40		
2	OPTINET OR EQUIVALENT ON SIDES	OPTINET: 40MESH 120 GSM/ WHITE C		1713.6	1714	sq.m	70.00	119952.00		
3	ALUMINET OR EQUIVALENT AS SECOND LAYER	ALUMINET- 30% SHADE : 80GSM		3969	3969	sq.m	80.00	317520.00		
<b>TOTAL-B</b>								<b>737528.40</b>		
<b>C OTHER MATERIALS</b>										
1	GALVALUME PROFILE	0.6mm thick/100-120GSM		1228	1228	m	45.00	55260.00		
2	Zig-zag Spring Insert	2.5mm OD GI/PP COATED			2456	m	10.00	24560.00		
3	GI WIRE FOR SHADE NET	2.5mm OD/ 30-70 GSM			156.3	kg	52.00	8126.98		
4	GI WIRE FOR TRELLISING	2.3mm OD/ 30-70 GSM			312.6	kg	52.00	16255.20		
5	GI Wire Rope For Trellising	4.0mm OD/ 1 X 19 or 7 x 19			2090	m	18.00	37620.00		
6	Semi-automatic Shade net retraction system	AS PER SPECIFICATIONS			4081.0	sq.m	60.00	244860.00		
7	Drip irrigation System including Foggers	AS PER SPECIFICATIONS			4081	sq.m	71.00	289751.00		
<b>TOTAL-C</b>								<b>676433.18</b>		
<b>TOTAL STRUCTURAL MATERIAL COST</b>								<b>TOTAL- (A+B+C)</b>	<b>2413851.20</b>	
SALES TAX(CST/VAT) + 5%								120692.56		
<b>TOTAL-(ABC)</b>								<b>2534543.76</b>		
<b>D FOUNDATION MATERIALS</b>										
1	Foundations for corridors	B300 GRADE CC: 15" X 6'		56	11.4	cu meter	5500.00	62843.46		
2	Foundations for Outer columns	B300 GRADE CC: 15" X 5'		52	8.8	cu meter	5500.00	48628.87		
3	Foundations for Inner columns	B300 GRADE CC: 12" X 1m		119	7.6	cu meter	5500.00	41616.38		
4	Flooring inside Double Door Entry	Brick work + CC - 3m x 4m x 0.1m		12	1.2	cu meter	12000.00	14400.00		
<b>TOTAL-D</b>								<b>167488.71</b>		
<b>E LABOUR COST</b>										
1	Foundation	6'/5'/3' depth x 15" & 12"			227	Nos	150.00	34050.00		
4	FABRICATION CHARGES	As per design requirement			4081	sq.m	40.00	163240.00		
5	INSTALLATION CHARGES	As per design requirement			4081	sq.m	40.00	163240.00		
6	TRANSPORTATION CHARGES							30000.00		
<b>SUB-TOTAL-E</b>								<b>390530.00</b>		
SERVICE TAX + 15%								58579.50		
<b>TOTAL-E</b>								<b>449109.50</b>		
<b>F INSURANCE</b>				Standard fire and special perils policy		0.25% of Unit Cost		7877.85		
<b>GRAND TOTAL</b>								<b>3159019.82</b>		
<b>COST PER SQ.M</b>								<b>774.08</b>		
Unit Cost Limited to Rs.								710.00		

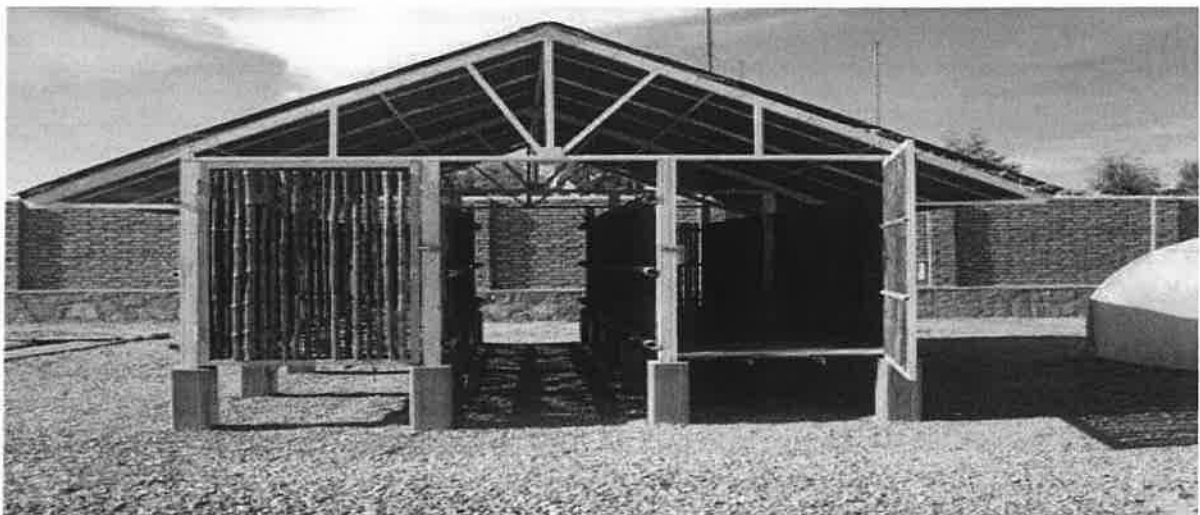
## **LOW COST ONION STORAGE STRUCTURES**

### **REQUIREMENTS**

For effective long storage of onion, the parameters essential to be looked after are the bulb size, choice of cultivars, cultivation practices, time of harvest, field curing, removal of tops, drying, grading, packing, storage conditions (optimum storage range of relative humidity 65% to 70% with the temperature ranging between 25°C to 30°C).

### **Salient Features of Improved Storage Structures are:**

1. Construction of structure on a raised platform to prevent moisture and dampness due to direct contact of bulbs with the soil.
2. Use of Mangalore tile type roof or other suitable materials to prevent built up of high inside temperature.
3. Increased centre height and more slope for better air circulation and preventing humid micro climate inside godown.
4. Providing bottom and side ventilations for free and faster air circulation and to avoid formation of hot and humid pockets between the onion layers.
5. Avoid direct sunlight or rain water falling on onion bulbs to reduce sun scald, fading of colour and quality deterioration.
6. Maintenance of stacking height to avoid pressure bruising.
7. Periodical disinfection of structures and premises to check rottage.
8. Cost effectiveness of structures is based on utilization of locally available material for the construction.





**PATTERN OF ASSISTANCE :**

- **Unit cost for 25 MT capacity of Low-Cost Onion Storage Structure: Rs.1.75 lakh per unit (Unit cost Rs. 7000/- per MT & Subsidy is Rs. 3500/- per MT)**
- **Subsidy @ 50% of the admissible total cost.**
- **Prorata basis can be adopted for smaller sizes than 25MT.**

**TECHNO-FINANCIAL PARAMETERS ADOPTED FOR WORKING OUT THE ECONOMICS OF A 25MT ONION STORAGE STRUCTURE**

1	Land requirement	6.5 m X 7.0 m
2	Storage space requirement	4.5 m X 6.0 m
3	Technology preferred	Natural or forced ventilation maintaining a temperature between 25 and 30°C with a relative humidity range of 65 to 70%.
4	Clearance of storage platform from the ground	60 cm
5	Height of the storage platform	90 to 150 cm

**ESTIMATE FOR ONION STORAGE CAPACITY OF 25 MT.**

<b>Sl. No.</b>	<b>Description</b>	<b>Unit</b>	<b>Total</b>	<b>Rate</b>	<b>Amount (Rs.)</b>
1	Excavation for foundation	Cum	3.888	132	513.26
2	P.C.C. 1:4:8 in foundation	Cum	0.729	3000	2187.00
3	R.C.C. 1:2:4 for columns	Cum	2.339	3840	8981.76
4	Nominal Reinforcement to columns	Kg	320	62.40	19968.00
5	Structural Steel Works	Kg	1200	72	86400.00
6	A/C Sheet Roofing	Sq.mtr.	83.2	240	19968.00
7	A/C Sheet Ridge	Rmt	13	144	1872.00
8	2" dia 4/2 bamboo strips @ 3" c/c	Rmt.	1454.4	30	43632.00
		<b>TOTAL</b>			<b>183522.02</b>
				<b>Rounded to Rs.</b>	<b>1,75,000.00</b>



**Capacity wise Dimensions of onion storage structures :**

S.No	Dimensions	5MT	10MT	15MT	20MT	25MT
1	Length (Mt)	4.5	7.5	7.25	9.6	12
2	Width (Mt)	1.5	1.5	1.2	1.2	1.2
3	Side height (Mt)	2.1	2.1	2.1	2.1	2.1
4	Central height (Mt)	3.3	3.3	3.4	3.4	3.4
5	Height of roof (Mt)	3.6	3.6	6	6	6
6	Height from land (Mt)	0.6	0.6	0.6	0.6	0.6
7	Direction of construction	S-N	S-N	E-W	E-W	E-W

**The following parameters shall be followed for construction of onion storage Structures for reducing the storage losses.**

- Suitability of site with proper elevation, drainage and linkages by road.
- Adequate bottom and side natural ventilation facilities should be provided.
- No tall structures should be located nearer to the onion sheds.
- For natural ventilation, storage width should be restricted to 610 cm. In the areas having high humidity, the storage width may be reduced/ necessary mechanical ventilation provision.
- Onion storage structures should be oriented to face wind ward direction.
- Leeward side wall opening below the platform should be closed.
- During storm/ heavy rains, provision should be made to close the windward side and wherever necessary to open the leeward side.
- Adequate overhang should be provided to prevent splashing of rain water or sunlight falling on the onion.
- The roof of material should prevent heat built – up at the top of the sheets structure.

### Different sizes of Onion storage structures:

S.No.	Capacity (MT)	Unit Cost (Rs)	Remarks	Coverage
1	5	35,000	Single tier structure having 3.75 mt length and 1.5 mt width 2 cubicals of 1.88 X 1.5X1.5 mt size	For small and marginal farmers cultivating onion <b>less than 1-acre area.</b>
2	10	70,000	Single tier structure having 7.5 mt length and 1.5 mt width 4 cubicals of 1.88 X 1.5X1.5 mt size.	Farmers cultivating onion <b>about 1-acre area.</b>
3	15	105,000	Single row structure having 11.25 mt length and 1.5 mt width, with 6 cubicals of 1.88 X 1.5X1.5 mt	Farmers cultivating onion on <b>about 2 acres area</b>
4	25	175,000	Two row structures, cubicals arranged in 2 rows with 1.2 mt wide passage between 2 rows	Farmers cultivating onion on <b>about 1 ha area</b>

### General Guidelines:

- i. The DHSO/HOs shall identify suitable beneficiary as per the available target and collect application with necessary documents, affidavit etc.
- ii. The administrative sanction shall be accorded to the beneficiary with the approval of the DMC.
- iii. The DHSO/HO shall guide the farmers with regard to the prescribed dimensions & specifications for the Onion storage structures for commencement of construction by the farmer.
- iv. The HO shall take completion certificate from the beneficiary and inform the same to O/o DHSO of concerned district.
- v. A joint inspection team with HO concerned, MI- Engineer & DHSO shall be constituted and inspect the Onion storage structure in the presence of promoter/beneficiary.
- vi. The Joint inspection team shall verify the structure physically, bills/ invoices and recommend for sanction of eligible subsidy in the prescribed JIT report format.
- vii. HORTNET filing of beneficiary details is mandatory.
- viii. The DHSO shall submit release proposals along with the joint inspection reports, photographs and DMC approval to the Director of Horticulture. The same proposals shall also be forwarded to ED login of HORTNET portal
- ix. Subsidy shall be released to the beneficiary from head office subject to availability of funds.

Director of Horticulture  
Telangana State, Hyderabad

9/21/09

14/21/9

3/3  
22/9/2009

**FORMAT TO CONDUCT FINAL AND JOINT INSPECTION OF ONION STORAGE  
STRUCTURE BY THE COMMITTEE UNDER POST HARVEST MANAGEMENT  
COMPONENT OF MIDH, TS.**

Name: .....

Place:..... District:.....

As per project report				As per the inspection and actual investment				
Item	Specifications /Details	Qty	Total Cost (Rs)	Item	Specifications /Details	Qty	Total Cost (Rs)	Remarks

**Certificates:**

- 1) This is to certify that Sri. /Smt. \_\_\_\_\_ has established Onion Storage structure as per project report and norms of MIDH.
- 2) This is to certify that all the original purchase bills of the items mentioned above have been verified and found correct.
- 3) This is to certify that Sri./Smt. \_\_\_\_\_ is eligible to avail subsidy of Rs. \_\_\_\_\_ and the same may be released.

Promoter

MIE

Horticulture Officer

DHSO

