

College of Horticulture  
V.C.S.G. Uttarakhand University of Horticulture and Forestry  
Bharsar, Pauri Garhwal

**RURAL HORTICULTURE WORK  
EXPERIENCE  
COMPONENT- INDUSTRIAL TRAINING**

**Submitted To-  
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# Rural Horticulture Work Experience

Component-

**Industrial Training**



# ▶ Definition

- ▶ Industrial Training refers to a program which aims to provide supervised practical training within a specified timeframe. This training can be carried out either in government organisations or in the private sector.

## ▶ **Aims of Industrial Training**

- ▶ The main aim of the Industrial Training program is to produce graduates who are ready to face the working world.
- ▶ The program also aims to produce the knowledgeable, skilled and experienced graduates, demanded by employers, who are able to apply the knowledge acquired at university to the working world.

► **Industrial Training From  
Uttarakhand Seeds and Tarai  
Development Corporation Ltd.  
Haldi, Pantnagar.**



## ▶ **Guidelines Under-**

- ▶ **Dr. Deepak Pandey (Chief Seed Production Officer)**
- ▶ **Dr. Chandra Mohan**
- ▶ **Dr. Mohit Sharma (Incharge of Haldi Plant)**
- ▶ **Dr. B.B. Mishra (Incharge V.S.P.P.)**
- ▶ **Mr. P.S. Mehra (Incharge of S.T.L.)**

# Introduction



- ▶ Established on June 29<sup>th</sup>, 1969 by G.B. Pant University of Agriculture and Technology, Government of India and Farmer of Tarai area.
- ▶ As a result of division of state of Uttar Pradesh this was named as Uttaranchal Seeds and Tarai Development Corporation Ltd. On 27<sup>th</sup>.12.2003.
- ▶ Now owing to change of state name the corporation's name also stands changed as Uttarakhand seeds and Tarai Development Corporation Ltd. Since 23.09.2009.
- ▶ The corporation's contribution to "GREEN REVOLUTION" received all around acclamation and applause.





# Mission

- ▶ The mission of UKS & TDC is to act as an effective instrument in accelerating the farm production, productivity per unit area thus, improve the socio-economic status of the rural areas.
- ▶ Make available quality seed timely and in adequate quantity at reasonable and economical price in its marketing territories; through public, cooperative and private network of distributors and dealers.

- ▶ **Maintain organisation, systems and procedures to ensure quality of seeds grown procured, processed and packed, stored and marked.**

# ► Objectives

- ▶ **To make available improved quality seeds.**
- ▶ **To increase productivity.**
- ▶ **To improve the economic status of farmer.**
- ▶ **Human Resource development**
- ▶ **Export**

## ▶ **Definition of Seed**

- ▶ **Botanically seed is fertilized ovule consist of intact embryo, stored food and seed coat which is viable and has got the capacity to germinate.**

▶ **Types of Seeds  
and their Tag  
colour-**

# TYPES OF SEEDS

## TAG COLOUR

NUCLEUS SEED



No Colour

BREEDER SEED



Golden Yellow tag

FOUNDATION  
SEED



White tag

CERTIFIED  
SEED



Blue tag



# TAGS OF FOUNDATION SEED AND CERTIFIED SEED

**उत्तराखण्ड स्टेट सीड एण्ड ऑर्गेनिक प्रोडक्शन सर्टीफिकेशन एजेन्सी**  
 उत्तरीय तल, कृषक भवन, मधुश्री बाईपास, रिग रोड, नेहरू ग्राम, देहपावून, उत्तराखण्ड

**FOUNDATION SEED**  
**आधारिय बीज**

**Treated with CARBENAZIN**

किसान द्वारा बीज का उपयोग पूर्णतः उसके जोडिम पर होगा तथा प्रमाण पत्र धारक बीज किस्म की हानि के प्रति उसको लिए उत्तरदायी नहीं होगा। किसी भी व्यक्ति को दूदी सीड अथवा प्रमाणपत्र से छेडाऊनी बिन्धे हुए बीज का कब नहीं करना चाहिए। यह बीज निर्धारित मानकों के अनुरूप प्रमाणित किया गया है तथापि बिजेता का यह उत्तरदायित्व है कि यह बीज विक्रय निर्धारित न्यूनतम मानकों के अनुरूप ही करें।

**मन्वीन रीज सिंह**  
 बीज प्रमाणीकरण निरीक्षक

(बीज एवं हठ बीज प्रमाणीकरण निरीक्षक)

किसान	WHEAT	प्रजाति	UP - 2572
बीज की मात्रा (किग)	20Kg	उत्प. म.	APR 16-33-31-60
प्रमाणपत्र नं०	8 D & 4 B	प्रमाणपत्र निर्गत तिथि	08 SEP 2016
परीक्षण की तिथि	22 AUG 2016	किसत की तिथि	21 MAY 2017
बीज उत्पादक	U. K. SEEDS & T.D.C HALDI (U.S. NAGAR)		

(प्रजाति बीज शुष्क एवं ठंडे भंडार गृह में भंडारित किया गया है।)

**उत्तराखण्ड स्टेट सीड एण्ड ऑर्गेनिक प्रोडक्शन सर्टीफिकेशन एजेन्सी**  
 उत्तरीय तल, कृषक भवन, मधुश्री बाईपास, रिग रोड, नेहरू ग्राम, देहपावून, उत्तराखण्ड

**CERTIFIED SEED**  
**प्रमाणित बीज**

**Treated with Thiram**

किसान द्वारा बीज का उपयोग पूर्णतः उसके जोडिम पर होगा तथा प्रमाण पत्र धारक बीज किस्म की हानि के प्रति उसको लिए उत्तरदायी नहीं होगा। किसी भी व्यक्ति को दूदी सीड अथवा प्रमाणपत्र से छेडाऊनी बिन्धे हुए बीज का कब नहीं करना चाहिए। यह बीज निर्धारित मानकों के अनुरूप प्रमाणित किया गया है तथापि बिजेता का यह उत्तरदायित्व है कि यह बीज विक्रय निर्धारित न्यूनतम मानकों के अनुरूप ही करें।

**15 Cr**

(बीज एवं हठ बीज प्रमाणीकरण निरीक्षक)

किसान	WHEAT	प्रजाति	UP - 2572
बीज की मात्रा (किग)	20Kg	उत्प. म.	APR 16-33-31-70
प्रमाणपत्र नं०		प्रमाणपत्र निर्गत तिथि	
परीक्षण की तिथि	SEP 2016	किसत की तिथि	9 Month
बीज उत्पादक	U.K. Seed & T. D. C. Haldi (U. S. Nagar)		

(प्रजाति बीज शुष्क एवं ठंडे भंडार गृह में भंडारित किया गया है।)

7.5 cm

# ► Steps involved in Producing seed-

**A. Searching of Farmer**

**B. Field Inspection**

**C. Distribution of seeds to registered farmer**

**D. Field Inspection**

- a. At vegetative stage
- b. At flowering stage
- c. At maturity stage

**E. Seed Sampling**

- a. Before Processing
  - 1. Viability test
  - 2. Moisture test
  - 3. Germination Test
  - 4. Purity test

**F. Processing of seeds**

**G. Seed sampling**

- a. After processing
  - 1. Viability test
  - 2. Moisture test
  - 3. Germination test
  - 4. Purity test
- If sample is OK than seed is Marketed

# ▶ **Division of Corporation-**

- ▶ **Production**
- ▶ **Processing**
- ▶ **Finance**
- ▶ **Marketing**
- ▶ **Human Resource**

# ► Production

## Breeder Seed to Foundation Seed

1. Allotment of Breeder seed- It is obtained from GOI, ICAR and Uttarakhand Govt.
2. Breeder seed is lifted from allotted institutes by Staff of Corporation.
3. Quality Testing is done to ensure quality of seed before releasing to farmers.
4. Breeder Seed are distributed to identified growers, Pantnagar University, KVKs, Govt. Seed Farm for producing Foundation Seed.
5. Field inspection of Foundation Seed plots / fields is done by a seed production officer.
6. Rouging, plant protection measures etc. are taken.
7. Field inspection by Certification Agency and technical staff of UKS & TDC is arranged.
8. Field Sampling is done after harvest of seed from farmers field for quality analysis.
9. Intake letters were issued to growers whose field samples are ok.
10. Before processing sampling is done at plant at the time of intake by concerned plant Incharge.
11. After processing, sampling & testing as well as Grow-out Test is conducted by Certification Agency as well as Seed Testing Lab of UKS & TDC.
11. Packing and storage.

# Foundation Seed to Certified Seed

## Steps Involved:

1. Seed is distributed to & Identified Growers for producing Certified seed.
2. Field inspection / monitoring of certified seed fields is done.
3. Rouging, Plant Protection measures, Cultural Practices etc are ensured.
4. Field inspection by Certification Agency and technical staff of UKS & TDC is arranged.
5. Field Sampling is done after harvest of seed from farmers field for quality analysis.
6. Intake letters were issued to growers whose field samples are ok.
7. Before processing sampling is done at plant at the time of intake by concerned plant Incharge.
6. Processing of raw seed is done under the supervision of Certification Agency and technical staff of UKS & TDC.
7. After processing, sampling & testing is done by Seed Certification agency and UKS & TDC.
8. Packing and storage.

# ► Processing

- ▶ **Sampling-** Sample size is according to crop.  
Sampling is done two times
- ▶ 1. Before processing
- ▶ 2. After Processing

Crop	Submitted Sample	Working Sample
Pea	1Kg	900gm.
Chilli	150gm.	50gm.
Brinjal	150gm.	50gm.
Okra	1000gm.	140gm.
Cole Crops	100gm	10gm.



## ► Moisture %-

- It is done by Moisture meter.
- Moisture % in Pea is 10%, in Okra is 9% and in Wheat is 12%.



# ► Physical Purity Test-

- Purity test is checked by manually. In this we check the Other crop seed, other distinguish variety, other weed seeds etc.
- Physical purity of Pea is 98%, okra is 99% and carrot is 95%.







Other Variety Seeds



# ▶ Viability Test-

- ▶ Seeds were soaked in water for 24 hrs.
- ▶ Seeds are cut slanted
- ▶ Tetrazolium solution is prepared (0.2% solution)
- ▶ Seeds are dipped in solution for 2 hrs.
- ▶ Viable seeds are coloured (Red colour).
- ▶ If Viability is 5% more than Germination% is good





# ► Germination Test-

- For germination test use Filter Paper with Butter Paper
- Two replications are taken (100 seeds each replication)
- Replications are placed in Incubator according to crop (Tropical, Temperate)
- After 4-5 days check the germination.











# ▶ Processing Unit

**RAW SEED**



**PRE-CLEANER**



Remove impurities



**GRADER**



Remove under-sized or over-sized seeds



**INDENTED CYLINDER**



Remove broken grains



**SPECIFIC GRAVITY  
SEPARATOR**



**SEED TREATER**



**PACKAGING AND STORAGE  
OF GRADED SEED**

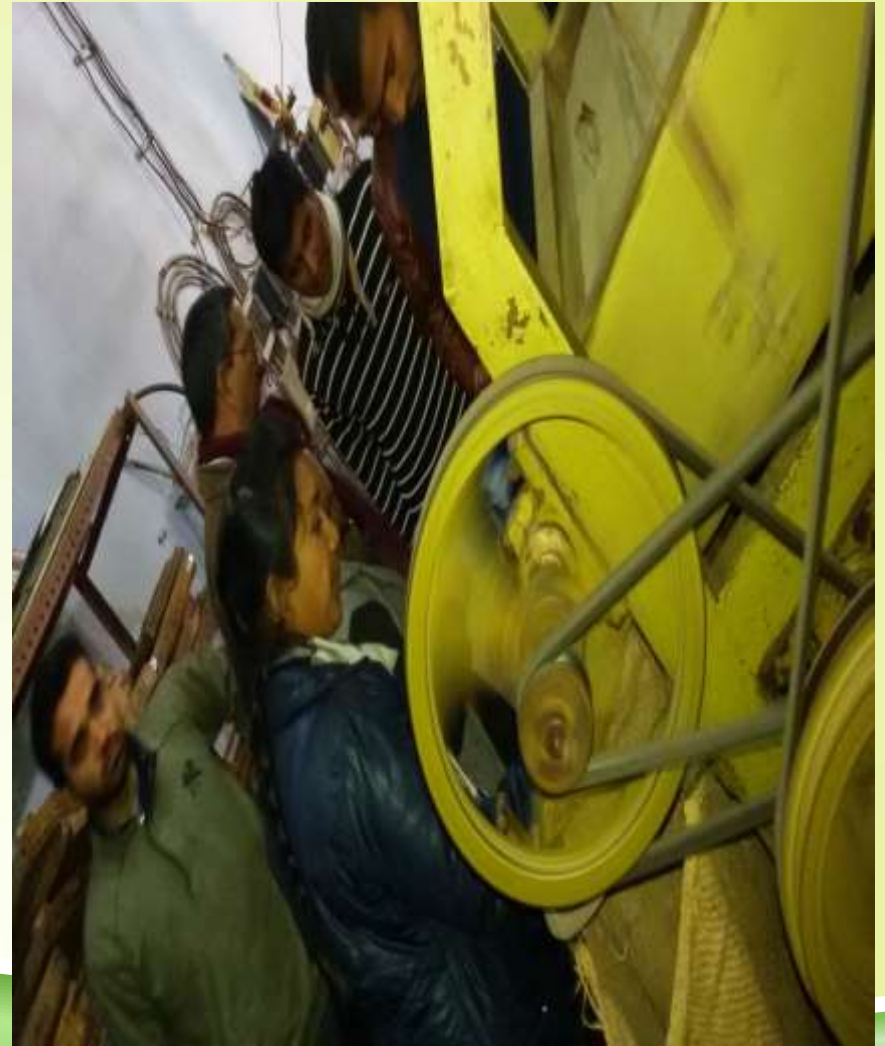
- ▶ Machines involved in seed processing unit-
- ▶ Destoner- It is used to remove the stone from the seed.



- ▶ Pre cleaner- Remove impurities which are smaller than seed size.  
Pre cleaner helps in around 60% cleaning



# GRADER - SEPARATES ACCORDING TO THE SHAPE AND SIZE





► **Indent Cylinder-** It is used for removing the cut grains.



► Gravity separator - The gravity separator employs a floatation principle. In this separation, seeds are vertically stratified in layers on the deck according to density (Weight).



- ▶ Treater – Used to treat the seeds with fungicide like Thiram (2gm./Kg.)
- ▶ Bagging And Tagging – Used to stitch the bags and tag application.



# ► Information in Tags-

- Lable No.
- Crop Name
- Variety Name
- Lot No.- Intake month, Year, State Code, Plant Code
- Date, Month & Year of Test
- Valid upto-
- Germination minimum
- Physical purity
- Net weight
- Chemical Name by seed is treated

उत्तराखण्ड स्टेट सीड एण्ड ऑर्गनिक प्रोडक्शन सर्टीफिकेशन एजेन्सी  
तृतीय तल, कृषक भवन, मरूसी बाईपास, रिंग रोड, नेहरू ग्राम, देहरादून, उत्तराखण्ड

FOUNDATION SEED  
आधारीय बीज

Treated With  
**CARBENDAZIN**

FIS I F33160046113

कृषि	WHEAT	प्रकृति	UP-2572
बीज की मात्रा (किग)	20Kg	लॉट नं.	APR 16-33-31-60
प्रमाणन नं.	80848	प्रमाणन तिथि (दिनांक)	08 SEP 2016
परीक्षण की तिथि	22 AUG 2016	वैधता की तिथि	21 MAY 2017
बीज उत्पादक	U. K. SEEDS & T.D.C HALDI (U.S. NAGAR)		

(बनारों बीज शुष्क एवं उबें भंडार गृह में संवर्धित किया गया है।)

# ► Storage-



## ▶ **Mobile Processing Plant-**

- ▶ It works at farmers' field where less amount of seed is available.
- ▶ Capacity of Mobile plant- 5q/Hr.
- ▶ Machines are same as processing plant in Mobile processing plant in a miniature form





**Intake  
seed**



**Seed  
lifter**





**Seed Grader  
with outlet**

# ▶ Indent cylinder





**Treater**

## ▶ Other Machineries-

# ▶ Seed Dryer

- ▶ It is used for removing the excess moisture of the seed
- ▶ Capacity of dryer- 2q.





## ▶ **Seed packaging Machines-**

▶ Different sizes packing Machines are available

▶ These are used according to weight of seed

▶ Packaging Weight- 1-2Kg

▶ 0.5-1Kg

▶ 250-500gm

▶ 1-200gm







- ▶ **Visit to Haldi Processing Plant-**
- ▶ **Plant Incharge- Dr. Mohit Sharma**
- ▶ **In Haldi plant mainly field crops (Wheat, Rice, Maize) are processed**
- ▶ **Capacity of Haldi plant is- 1,60,000q.**



- ▶ Vegetable seed processing Plant (V.S.P.P)
- ▶ Plant Incharge- Dr. B.B. Mishra





▶ **Seed Testing Lab**

▶ **Incharge of S.T.L.- Mr. P.S. Mehra**



# ▶ **Marketing Centres in India-**

▶ **Uttar Pradesh**

▶ **Bihar**

▶ **Jharkhand**

▶ **West Bengal**

▶ **Punjab**

## ▶ **What We Learn-**

- ▶ We learn the processing procedure of seeds
- ▶ We learn the information regarding Seed testing lab
- ▶ We learn the information Regarding Foundation seed and certified seed production
- ▶ We learn the Intake procedure of seed
- ▶ Learn about the machinery used in processing plant





**Thank you**

- ▶ [www.k8449r.weebly.com](http://www.k8449r.weebly.com)
- ▶ [www.anilrana13014.weebly.com](http://www.anilrana13014.weebly.com)