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Course name :

**Crop Production Technology-II
(ASAG 2204)**

Course credit :

(2-1-0)

Lecture 7

Topic: Lentil



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7.1 LENTIL

Lens culinaris/ Lens esculanta

Papilionaceae

- 4th most important pulse crop of the world.
- Globally it shares 5% of pulse area.
- Origin : Central Asia (India, Pakistan)
- **Two types of lentils**

Masur/ Malkamasur – large seeded – Africa, Central Asia

Masuri – small seeded- India, Pakistan, south and west Asia.

- Major lentil producing countries: **Canada (39%), Turkey, India , USA, Etiopia, Syria**
- Highest yield : Egypt, USA



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7.2 AREA AND DISTRIBUTION OF LENTIL IN INDIA

Area: 1479 thousand ha

Production: 1031 thousand t

Yield: 697 kg/ha

**Important states: UP, MP, Bihar, West Bengal
UP and MP produces 70% of national
production.**

**Highest productivity: 911 kg / ha in West
Bengal**

7.3 Economic Uses of Lentil



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- It is mostly grown as pulse as and used in the form of dal.
- Seeds are roasted and eaten. Roasted seeds are sometimes used as an ingredient for table snacks.
- Protein content is about 24-26% which is more than Tur, Urad, Mung and Gram.
- It contains 1.3% fat, 3.2% fibre, 2.2% minerals and 57% carbohydrate. Rich in calcium, iron and niacin.
- Unripe pods are used as vegetable.
- Dried husk, stalks and broken grain is used as cattle feed.
- In Kashmir valley, it is grown for green manuring in paddy
- It is used as cover crop to control soil erosion.



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7.4 CLIMATE

- Cool season (rabi) crop. Opt. temp 18-30 °C.
- Tolerant to frost and severe winter to a greater extent.
- Moderately tolerant to acidity and alkalinity.
- Sensitive to water logging.
- Requires cool temperature during vegetative stage and warm temperature during maturity.

7.5 AGRO TECHNIQUES

- 1 ploughing followed by 1 or 2 harrowing is adequate.
- In heavy soils 1 deep ploughing followed by 2-3 harrowings should be given.
- In light soils, less tillage is needed to prepare an ideal seedbed.

Seed rate: 40-50 kg/ha



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7.6 VARIETIES

JL 1, VL Masoor 4, Sapna (LH 84-8), L 4076, Salimar mashur 1, Pusa lentil 4, Priya (DPL 15), Pusa vibhav, Sapna, Subrata, Mallika, Sapanana, Garima, WBL-58, Sheri, Narendra Masoor, Pant Lentil 5, Noori, Asha, Ranjan, Jawahar Lentil-3, Pant L5, Pant L 6.

7.7 Cropping systems

- Rice-lentil
- Maize –lentil
- Cotton –lentil
- Sorghum- lentil,
- Groundnut - lentil



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7.8 TIME OF SOWING

- Middle of October is the most suitable time for sowing.
- Delay in seeding causes reduction in yield the rate of reduction can be minimized by relatively closer spacing and use of higher seed rate.
- The magnitude of delayed sowing and yield loss is large after mid November.
- Sowing should be done at shallow depth of 3-4 cm.
- Seeds should be treated by fungicides and after one week inoculated by Rhizobium bio-fertilizer.



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7.9 SPACING

- Bold seeded : 50 kg/ha with spacing 30cm x10 cm
- Small seeded : 30 kg/ha at spacing of 30cm x5 cm.
- Late sown small seeded: 40kg/ha; 20cm x 5 cm.

7.10 Nutrient management

Application of 5-15 t/ha FYM is beneficial.

20-30kg N ; 50-60 kg P₂O₅/ha

25 kg /ha of ZnSO₄ will meet the needs Zn for lentil crop.

Foliar application of 0.5 % ZnSO₄ can correct the zinc deficiency.



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7.11 WATER MANAGEMENT

- Lentil crop is mostly sown under unirrigated conditions.
- It can tolerate drought to some extent.
- 15 cm water is sufficient.
- By giving 1 or 2 irrigations when winter rains are not properly distributed , higher yields can be obtained.
- 1st irrigation should be given at 45 DAS and 2nd if needed at pod filling stage.
- More irrigation may adversely affect crop performance.



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7.12 WEED MANAGEMENT

- First 30-60 DAS is the critical period for weed competition.
- Major weeds are **Chenopodium album (bathua)**, **Melilotus alba (senji)**, **Cirsium arvense (Kateli)**.
- Hand weeding at 25-30 and 45-50 DAS is to be done
- Pre emergence herbicides such as pendimethalin , fluchloralin can effectively control the weeds.



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7.13 HARVESTING AND PHT

1. Masur crop become ready for harvesting within 100 to 120 days after sowing.
2. It is harvested by cutting the plants near to the ground before it is dead ripe.
3. The plants are dried in sun for one week on threshing floor.
4. Threshing is done by beating the plants with stick and winnowed to clean off seed from chaff.
5. The green pods are picked for vegetable purpose.

7.14 YIELD

20-25q/ha.