

भारत सरकार

कृषि एवं किसान कल्याण मंत्रालय
(कृषि, सहकारिता एवं किसान कल्याण विभाग)
दलहन विकास निदेशालय
छठवीं मंजिल, विन्ध्याचल भवन
भोपाल-462004 (म.प्र.)

**Government of India**

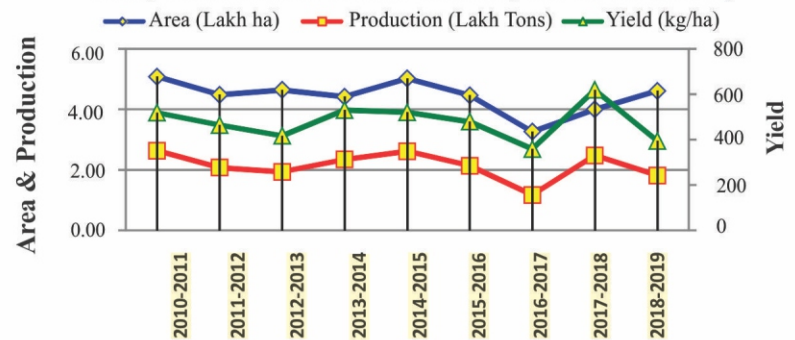
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**HORSEGRAM
(KULTHI)**

Scientific Name:
Macrotyloma Uniflorum

Area : 4.27 Lakh ha
Production: 2.04 Lakh tonnes
Yield: 478 kg/ha
(Avg. of 2014-15 to 2018-19)
**Ever Highest Production –
2.63 Lt. (2010-11)**

Area, Production & Yield of Kulthi (2010-11 to 2018-19)**Major States (Avg.: 2014-15 to 2018-19)**

(Area in lakh ha; Production in lakh tonnes; Yield in kg/ha)

| Major States | Area | % Contri | Prod. | % Contri | Yield |
|------------------|-------------|--------------|-------------|--------------|------------|
| Karnataka | 1.59 | 37 | 0.65 | 32 | 406 |
| Tamil Nadu | 0.69 | 16 | 0.45 | 22 | 650 |
| Andhra Pradesh | 0.53 | 12 | 0.21 | 10 | 395 |
| Chhattisgarh | 0.46 | 11 | 0.16 | 8 | 357 |
| Jharkhand | 0.23 | 5 | 0.16 | 8 | 703 |
| All Above | 3.50 | (82%) | 1.63 | (80%) | 466 |
| All India | 4.27 | | 2.04 | | 478 |

Major Districts (2018-19)**Except Tamil Nadu (2017-18)**

| Major States | Major Districts |
|------------------|--|
| Karnataka (91%) | Chamarajanagar, Mysuru, Mandya, Tumakuru, Chikmagalur, Ramanagaram, Kolar, Haveri, Koppal, Chitradurga |
| Tamil Nadu (93%) | Krishnagiri, Dharmapuri, Vellore, Thiruvannamalai, Thiruppur, Salem, Karur, Dindigul, Coimbatore |
| A.P (98%) | Chittoor, Ananthapuram, Srikakulam, YSR Kadapa, Vizianagaram, Prakasam, Krishna |
| C.G (100%) | Rajnandgaon, Gariyaband, Janjgir, Bijapur |

Economic Importance:

Horse gram is an important crop of south India. This crop is generally grown when the cultivator is unable to sow any other crop for want of timely rains and also grown in vacant space of citrus orchard. Horsegram is known as the cheapest source of vegetable protein.

Crop Products:

- Consumed as whole grains, sprouted form as well as dal in a variety of ways.
- Savoury products- Papad, Curry and whole meals.
- Used as a source of food, feed, fodder, green manuring.
- Medicinal Uses- Curing cough bronchitis, Kidney trouble, irregular periodicity of menstrual cycle.

New Varieties:

| Year | Varieties |
|------|--|
| 2010 | VL gahat-19, Cridalatha (CRHG-4) |
| 2011 | Indira Kulthi 1 (IKGH-05-01) |
| 2012 | Gujarat (Dantiwada) Horsegram-1 (GRHG-5) |
| 2014 | Cridaharsha (CRHG-19) |
| 2016 | Pratap Kulthi-2 (AK-53), Cridavardhan (CRHG-22), SHG-0628-4, |
| 2017 | C.G kulthi-3 (BHG-03), Chhattisgarh Kulthi-2 (BHW-1) |

State-wise Recommended Varieties:

| State | Recommended Varieties |
|----------------|-----------------------------------|
| Rajasthan | KS-2, Pratap Kulthi (AK-42) |
| Andhra Pradesh | Palem-1, Palem-2, Paiyur-2, PHG-9 |
| Tamil Nadu | Paiyur-2 |
| Karnataka | PHG-9, GPM-6, CRIDA-1-18 R |
| Gujarat | Pratab Kulthi-1 (AK-42), GHG-5 |
| Uttarakhand | VL- Gahat-8, VL Gahat-10 |
| Chhattisgarh | Indira Kulthi-1, (IKGH01-01) |



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Sowing Season: Kharif & Rabi
Sowing Time : **Grain-** Late August to November ;
Fodder- June-August
Spacing : Kharif : 40-45 cm ; Rabi: 25-30 cm.
Seed Depth : 1.5 to 2 cm
Seed rate :
Broadcast- 40 kg/ha for grain & Fodder.
Line Sowing- 20-30 kg/ha and about 5 cm plant to plant spacing.
Seed Treatment: 2 g/kg Bavistin or Trichoderma viridi 4g/kg seed.
Culture & Micronutrient : Rhizobium and PSB culture (5 -7 gm/kg seed).
Irrigation : Irrigation should be apply at before flowering and pod formation stage.

Soil type: The crop can be grown on wide range of soils from light to heavy soils which are free from alkalinity. Only 1-2 ploughings followed by planking provides desirable seed-bed.

Climate: Horsegram is extremely drought-resistant crop. Moderately warm, dry climatic conditions are suitable for its optimum growth. The temperature range of 25-30°C and relative humidity between 50 and 80% is optimum for its growth.

Plant Nutrient Management: 20 kg N, 30 kg P₂O₅/ha as a basal at sowing time.

Weed Management: Due to luxuriant growth an early weeding/hoeing is enough for weed. Application of Pendimethalin @ 0.75-1 kg a.i./ha as pre emergence application. After that, one hand weeding at 20-25 days after sowing.

Application of fertilized should be based on Soil Test Report.

Cropping System:
 Crop is grown as pure crop as well as mixed crop with sorghum, pearl millet, pigeon pea, sesame or niger.

Harvesting/Threshing & Storage:
 As usual with other kharif pulses of Vigna group, clean seed should be sun dried for 3-4 days to bring their moisture content at 9-10% to be safely stored in appropriate bins.

Storage :
 Fumigate the storage material before onset of monsoon and again after the monsoon with ALP @ 1-2 tablets per tonne. The small quantity of the produce can also be protected by mixing inert material (soft stone, lime, ash, etc) or by smearing edible/non-edible vegetable oils or by mixing plant products like neem leaf powder at the rate of 1-2% wet-weight basis.

Yield: By adopting improved package of practices one can harvest 6-10 qtls of grain/ha depending upon the monsoon behaviour.

Insect-Pest Management:

| Insect Pest | Management |
|--------------------------------------|---|
| Aphids, Jassid | Spray of Oxydemeton methyl 25 @ 1 ml/liter. |
| Pod borer | Spray of NPV @ 250 LE/ha. or Quinolphos 25 EC @ 2 ml/liter water. |
| Yellow Mosaic Virus vector-white fly | i. Grown resistant varieties. ii. Destroy the infected plants. iii. Spray of Oxydemeton methyl 25 @ 2 ml/liter water and repeat after 15 days (if necessary). |

Disease Management:

| Disease | Control Measures |
|----------|--|
| Root rot | i) Seed treatment with Carbindazim 2gm/ kg of seed. ii) Avoid early sowing in infested areas. |

Recommendation to Achieved Higher Production:

- Deep summer ploughing once in 3 years.
- Seed treatment should be done before sowing.
- Application of fertilizer should be based on soil test value.
- Weed control should be done at right time.
- Adopt integrated approach for plant protection.