

Summer moong

Suitable varieties: Variety 'Pusa Vishal' and other low input requiring and resistant varieties to insect pest and diseases can also be grown.

Sowing time: Followed by barley + mustard, summer moong can be sown optimally up to second week of April.

Seed rate: 20 kg/ha.

Spacing: Row to row 30 cm and plant to plant 10 cm distance should be maintained.

Nutrient management:

Vermicompost @ 2.0 t/ha should be top dressed before second irrigation.

Biofertilizers like *Rhizobium* @ 200g/10kg seed as seed treatment and Phosphorus Solubilizing Bacteria (PSB) @ 10 kg/ha should be applied as soil treatment.

Water management: Besides the pre-sowing irrigation moong crop can be raised successfully by applying 2-3 irrigations during summer.

Weed management: Being weed smothering crop, weed in summer moong is not a problem. However, need based one manual intercultural operation can be done.



ORGANIC PACKAGE FOR RICE - BARLEY + MUSTARD - SUMMER MOONG SYSTEM



Productivity and economics of rice-barley + mustard-summer moong cropping system under organic cultivation (2006-07 to 2012-13)

Crop/System	Grain yield (kg/ha)			
	Conversion period		4 th year	5 th year
	Mean of first 2 years	3 rd year		
Rice	3625	4120	4260	4470
Barley+Mustard	2120+84	2483+120	2560+334	2830+385
Summer moong	790	800	871	886
Rice-barley + mustard-moong (Rice Equivalent yield)	8236	9123	10001	10577
The gross returns from the organic production of rice-barley + mustard-summer moong system were ₹ 1,41,713/ha with ₹ 62252/ha as cost.				

Investigators

Dr N. K. Jat
Dr Sudhir Kumar
Dr R.S. Yadav
Dr Prem Singh
Dr Kamta Prasad



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किसानों का हमसफर
भारतीय कृषि अनुसंधान परिषद



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Institute Technology Management Unit

Project Directorate for Farming Systems Research,
Modipuram, Meerut-250 110, Uttar Pradesh
www.pdfsr.ernet.in, E mail: directorpdfsr@yahoo.com

Network Project on Organic Farming
Project Directorate for Farming Systems Research
(Indian Council of Agricultural Research)
Modipuram, Meerut-250 110, Uttar Pradesh

Rice



Suitable varieties: 'Saket-4' and other low input requiring and resistant varieties to insect pest and diseases.

Sowing time: The appropriate time for transplanting of rice is first week of July.

Seed rate and nursery raising: Optimum seed rate for nursery raising of rice is 25 kg/ha.

Transplanting and Spacing: Normally 25 day old seedlings should be transplanted in well puddled field at row to row /plant to plant distance of 20 and 15 cm, respectively.

Nutrient management:

Well rotten FYM @ 10.0 t/ha should be incorporated into the soil at least 20 days before puddling.

Vermicompost @ 5.0 t/ha should be top dressed before second irrigation.

Biofertilizers like *Azotobacter* (nitrogen fixer) and Phosphorus Solubilizing Bacteria (PSB) each should be added @10 kg/ha in soil after final land preparation.

Water management: Depending upon the amount and frequency of rains during the growing season 10-12 irrigations (5 cm water/ irrigation) should be applied intermittently.

Weed management: To control the weeds effectively in rice, field should be well puddled. The weeds can be effectively controlled manually by two hand-weeding at 20 days interval.

Plant protection:

Solar seed treatment for 2-3 hours during May-June for seed borne diseases like bacterial leaf blight.

Seedling treatment with *Pseudomonas fluorescence* culture @ 4 kg/ha and *Trichoderma harzianum* culture @ 5 kg/ha for soil borne diseases.

Foliar application of garlic + green chillies paste (1:1) @10 kg/ha for gundhi bug.

Field release of Tricho-cards (*Tricogramma japonicum*) 5-6 times @ 30 cards/ha for stem borer and leaf folder.

Foliar spray of *Pseudomonas fluorescence* at dough stage for sheath blight.

Barley + mustard (4:1)



Suitable varieties: Barley variety 'Azad' with mustard variety 'Pusa Bold' and other low input requiring and resistant varieties of crops to insect pest and diseases.

Sowing time: In rice-barley + mustard-summer moong cropping system, barley + mustard can be sown optimally up to first week of November.

Seed rate: Optimum seed rate for sowing barley is 80 kg/ha and for mustard is 4 kg/ha. In intercropping (4:1) 60 kg seed of barley and 2 kg seed of mustard will be sufficient. Organically certified seed should be preferred for sowing.

Spacing: In barley, row to row 20 cm and plant to plant 5 cm distance should be maintained while, in in each 5th row in the field at same row distance mustard can be sown keeping plant to plant spacing of 10 cm.

Nutrient management:

Well rotten FYM @ 8.0 t/ha should be incorporated into the soil at least 20 days before puddling.

Vermicompost @ 4.0 t/ha is top dressed before second irrigation.

Biofertilizers like *Azotobacter* (nitrogen fixer) and Phosphorus Solubilizing Bacteria (PSB) should be applied each @10 kg/ha in soil after final land preparation.

Water management: Crop should be irrigated at critical crop growth stages. Five irrigations including pre-sowing irrigations are sufficient for raising barley+ mustard intercrops.

Weed management: Weeds under organic cultivation of barley + mustard can be easily managed by two manual intercultural operations depending upon the severity of weeds.

Plant protection:

Use certified seeds and grow resistant varieties for covered smut

Early/timely sowing of mustard to avoid white rust.

Spray neem based insecticides for mustard aphid.