

# Innovative Ispaghol machinery

پاکستان زرعی تحقیقاتی کونسل

Ministry of National Food Security and Research



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## Design and development of machinery

- ABEI got a project form Agricultural Linkages Program (ALP), PARC to resolve ispaghol processing problems
- The design and development work of ispaghol processing machinery was stated in 2016
- Machines for all processing steps were manufactured at ABEI, NARC, Islamabad
- This is first-ever development of ispaghol processing machinery in Pakistan

# Process of new ispaghol processing machinery



Thresher



Seed pre-cleaner



De-bearder



Seed fine-cleaner



De-hudker cum wonnower



Air classifier

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# 1. Ispaghool thresher

- Ispaghool seed thresher is designed and developed at ABEI
- Field testing and evaluation was carried out for Ispaghool and Kalongi threshing and encouraging results were found
- Threshing capacity is 100 kg/h



## 2. Pre-cleaner of ispaghol seeds

- Stones and weeds are separated from ispaghol seed using this machine
- Its capacity is 50 kg/h



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### 3. De-bearder

- Its rubs the seed and breaks undesirable foreign materials from ispaghol seed
- Its capacity is 250 kg/h



## 4. Ispaghol fine-seed cleaner

- It cleans the seed and removes straw and other foreign materials
- Its capacity is 120 kg/h



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## 5. Ispahgol de-husker cum winnower

- It de-husks the ispaghol seed and segregates the husk from unhusked ispaghol seed and *gully*
- A set of 15 units is normally required for complete de-husking of ispaghol seed
- De-husking capacity of the complete set is 160 kg seed per hour





## 6. Ispaghool husk air classifier

- It further removes any impurities present in the husk
- It classifies husk into three categories, i.e., complete husk, broken husk and powder by centrifugal force and cyclone separation principle
- Its capacity is 40 kg husk per hour



## Comparison of ispaghol processing plants

Innovative machinery plant	Small plant	Big plant
Ispaghol de-husker cum winnower	8	15
Ispaghol seed pre-cleaner	1	1
Ispaghol seed fine-cleaner	1	1
Ispaghol classifier	1	1
Required labourers	3	3
Processing capacity in 10 hours	800-1000 kg	1600-2000 kg
Production of husk	160-200 kg	320-400 kg

## Conclusions

- Cultivation of ispaghol crop will be increased
- Profit of ispaghol growers and processors will be increased
- Demand of multi-national companies will be met
- A sizeable foreign exchange will be earned by its export
- Trade activities will be flourished
- Economic opportunities will be increased

Thank you very much for your attention!

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