



小农户稻谷储存技术与装备

Technology and equipment of smallholder
farm storage for paddy

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交流内容 CONTENTS

01

稻谷的 储藏特点

Paddy storage character

02

农户稻谷储 藏总体要求

General requirment of
smallholder farm storage
for paddy

03

小农户储藏 技术与装备

Technolgy &equipment for
small scale farm storage

一、稻谷的储藏特点 Paddy storage character



- **稻谷不耐高温。**过夏的稻谷容易陈化，烈日下暴晒的稻谷，或暴晒后骤然遇冷的稻谷，容易出现“爆腰”现象。
- Paddy isn't heat resistant, easy aging, easy crack after exposed to strong sunlight.

- **稻谷储藏水分不宜过低。**稻谷水分偏低，加工时碎米率将增加，口感也会降低。
- The moisture should not be too low in storage. If paddy moisture content is too low, paddy broken rate will increase in processing, taste also reduces.





二、小农户稻谷储藏总体要求

General requirement of smallholder farm storage for paddy



对稻谷的要求 requirement for paddy

干燥
dry



场地干净
Keep space tidy
安全水分以内
within safe water content

饱满
well-filled



充分成熟后收割
Harvested after Well-filled
籽粒饱满
well-filled

干净
clean



杂质清理干净
clean off impurity



对仓房、装具的要求 requirement for barn & equipment

做好仓房内清洁卫生
Keep tidy inside bin

装具底部能防潮
The bottom of facility should have moisture-proof pad.
仓房底部应垫防潮材料
The floor of bin should have moisture-proof layer.



二、小农户稻谷储藏总体要求

General requirement of smallholder farm storage for paddy



做好隔离 Separation

有虫粮和无虫粮分开

Grains with pests separated from none-pests grains.

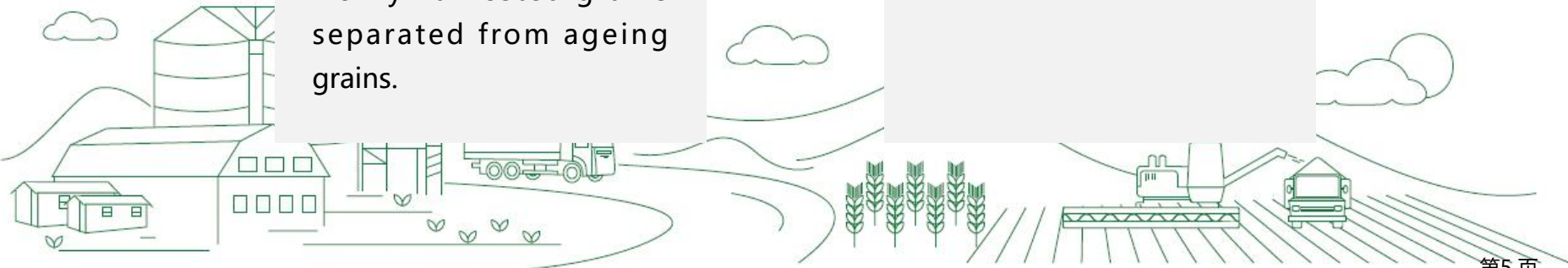
陈粮与新粮分开

Newly harvested grains separated from ageing grains.

定期检查 Periodic Check

发现问题及时处理

Problems are found and tackled timely .





(一) 装具及标准 Facility and standards

彩钢板组合仓

Pre-painted Steel Farm Bin

- 材质为**0.4毫米厚彩钢板**

0.4mm thick pre-painted steel sheet

- 价格约**400-500元/套,每立方米造价为260-350元**

Price about 400-500RMB/set, cost 260-350RMB/m³

- 容积**1.5m³**, 装粮数量约**1吨**

Volume 1.5m³ to store about 1 ton grains

- 适合储藏**安全水分**的稻谷

Suitable for storage of paddy with safe water content





彩钢板组合仓

Pre-painted Steel Farm Bin

该仓一般为3层，高度约1.35米

The bin generally have 3 floors,
1.35 meters high



原因 Reason

- **节省材料，因地制宜**
Save materials, fit for local conditions
- **考虑到装粮方便和安全**
Consider for easily and safe loading

特点 Characters

- **防潮、防鼠、美观、耐用。**
Moisture-proof, rodent control, nice-appearance and durable.
- **便于规模化、流水线加工生产。**
Facilitate large-scale and assembly line processing



彩钢板组合仓

Pre-painted Steel Farm Bin



“ 该仓不宜超过三层。 Don't overlay more than 3 rings.

“ 应选择干燥、平整、通风良好的地点，不宜放在卧室、厨房、畜舍、禽舍等处。

The space must be dry, tidy and ventilated, should not be put in bedroom, kitchen, live-stock shed.

“ 仓底应配备防潮垫。 The moisture proof pad in bottom.

“ 不能将其中装有粮食的重物压在彩钢仓的筒壁上。

Don't put heavy bag on silo.

“ 不用时不能装有有毒东西，以免污染粮食。

Don't put polluted things.

“ 该仓只能在室内使用。 Use indoor only.



实施《农户小型粮仓建设标准》

implement Standard for small-scale bin construction

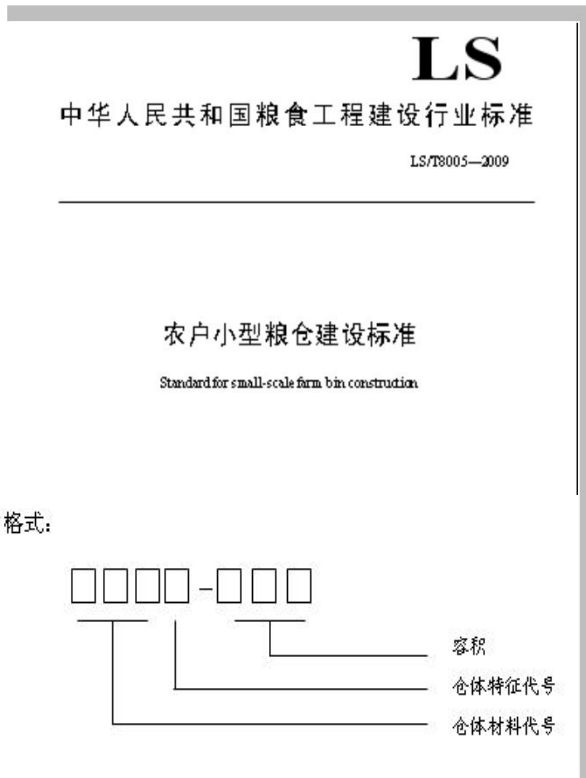
《农户小型粮仓建设标准》（LS/T8005-2009）已于2009年6月正式颁布实施，该标准是我国第一个与农户储粮相关的行业标准。
The first related standard had been issued and implemented in June 2009



《农户科学储粮专项管理办法》规定

National Special Management System for Scientific Farm Storage :

所有配置的农户粮仓必须符合《农户小型粮仓建设标准》
All farm storage bin must comply with this standard



- 示例： (1) JSBZ-015 : 表示金属板类彩钢板组合仓，容积为1.5 m³。
(2) JSWG-100 : 表示金属网类钢骨架矩形仓，容积为10.0 m³。

(二) 技术及工艺 Technology and process

稻谷 Paddy

安全水分储藏

Safe water content storage

- 装具彻底清扫后入粮，粮仓周围清扫干净。 store rice after clean bin, keep surroundings tidy
- 密封装具，防止老鼠、害虫和湿气侵入。 Seal bin
- 采用拌保护剂防虫；压盖粮面防治蛾类成虫。 Use protectant

偏高水分稻谷应急储藏

water content reduction of Slightly-high water content paddy

- 可选择带有通风功能的彩钢板组合仓。 Choose bin with ventilation function
- 使用时，须取下粮仓的仓盖才能通风。 Ventilation after remove the cover

高水分稻谷干燥

water content reduction of High water content paddy

- 可采用袋式干燥技术降低水分。 use bag drying method
- 能不同水分含量稻谷分别干燥。 fit for different water content paddy



偏高水分稻谷应急储藏

water content reduction of Slightly-high water content paddy

采用风压600Pa，风量 $5\text{m}^3/\text{min}$ 的离心风机(功率200W)，通风110h左右，可以将新收获的稻谷水分从18%左右降至13.5%左右，对稻谷裂纹率无影响，可以解决农户偏高水分稻谷在应急条件下的降水，从而达到安全储藏要求。

Mechanical ventilation with single tube fan in emergency to reach safe storage for paddy without cracked.



单管机械通风降水

single tube fan used to reduce rice water content



三、小农户储藏技术与装备

Technology & equipment for smallholder farm storage



高水分稻谷降水 High water content paddy
【袋式干燥】 bag drying

对于高水分稻谷，可通过袋式干燥，将水分降至安全储藏水分

As for grains with high water content, use bag drying method to reach safe water content





三、小农户储藏技术与装备

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袋式干燥 bag drying

袋式干燥不受天气条件影响，干燥量弹性大，能分水分粮食分别开干燥，最大限度提升干燥品质、降低能耗、保持干燥品质，适合农户集约化高水分粮食干燥的需要。

Bag drying isn't affected by weather, fit to rice with high water content for farm intensive treat

加热器及配套参数表

Heater and related parameter table

指标 indicators	5P加热器 5P heater	12P加热器 12P heater
额定输入功率 The power input	4.5kW	13 kW
额定制热量 heating capacity	16 kW	40 kW
设计处理量 The design capacity	7.5t	15t
风机风量 The volume of fan	7000 m ³ /h	15000 m ³ /h
热风温升 heating rate	7°C	8°C

典型条件下袋式干燥能耗情况表 Energy consumption for bag drying in the typical condition

粮种 species	每袋重(kg) weight of Each bag	初始水分(%) origin water content	通风 /加热 (h) ventilate/heating time	干后水分(%) after heating Dry	单位风(m ³ /h.t) unit air volume	单位能(kW.h/t.1%) unit energy consumption
paddy	640	24.2	43/33	12.5%	0.30	4.42



注意事项 Caution

农户储粮禁止使用磷化铝进行熏蒸杀虫!

Don't use PH₃ for farm storage

小农户储粮，必须使用适用于农户储粮的防虫药剂

must use protectant suitable for smallholder farm storage



- ✓ **杀虫谱广** Broad spectrum
- ✓ **微胶囊缓释技术，有效期长** Sustained release of microcapsules with long term of validity
- ✓ **高效低毒，用量少，符合国家卫生标准** High efficiency and low toxicity
- ✓ **没有安全隐患** Without security threat



➤ **建议利用植物源防虫的措施，如利用花椒、椿树叶、菖蒲和艾草等防虫技术**

Plant sources are used to prevent insects, such as prickly ash, tree leaves, calamus and wormwood, etc.



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汇报完毕 · 感谢倾听
Thanks for your attention!

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