



— 28 - 31 MARCH 2022 —

**ASIA-PACIFIC FORUM ON
SUSTAINABLE DEVELOPMENT**

**Promoting Food Security through
Combating Soil Degradation in the Asia-Pacific**

30 March 2022, 12.15-13.45 Bangkok time

*Black soil conservation machinery
and equipment in China*

Luo Xiwen

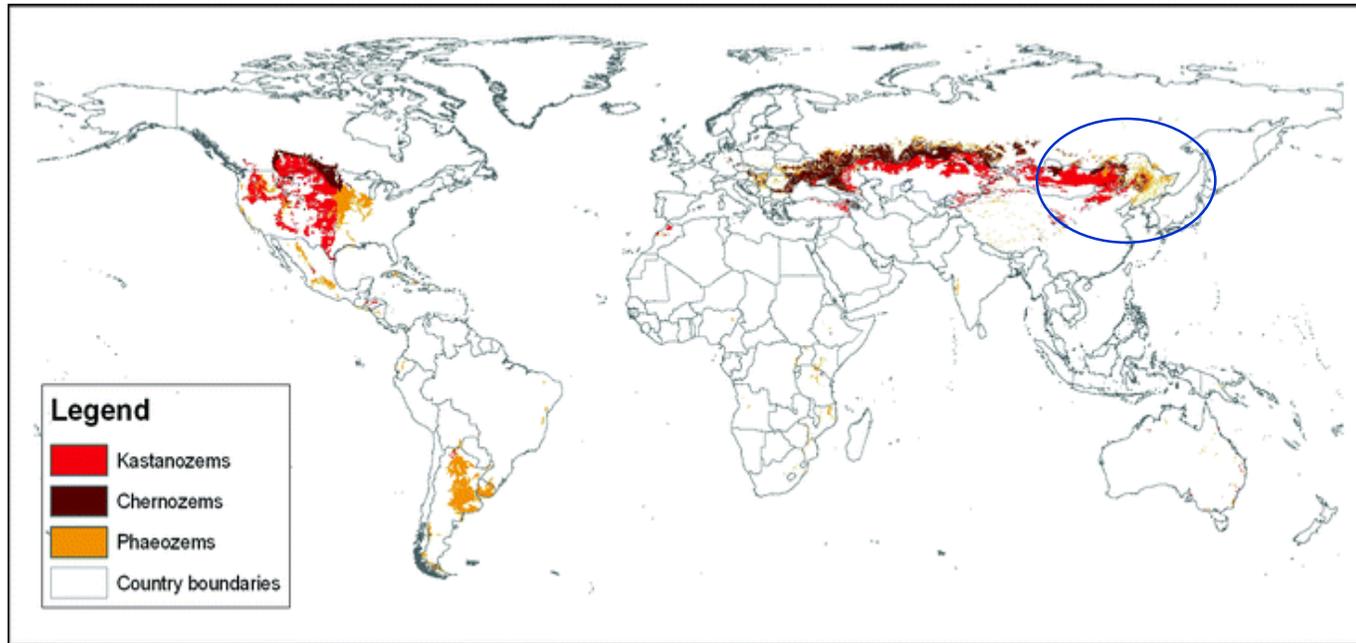
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Outline

1. Black soil in the world
2. Stubble Chopper
3. Machines for Reduced Tillage
4. No till seeders
5. Sprayers

Black soil in the world



- **In China , 25% grains**
- **Becomes thin**
- **Fertility decrease**

China has one of the biggest area of black soil in the world

Long Term Plan for Black Soil Protection

中国的黑土地保护规划



China Central government has made Long term Plans for black soil protection:

1. Plan for Black soil protection
2. Plan for Black soil Conservation tillage

Stubble Chopper



Short Stubble Covers on soil

Strip Tiller



Makes clean strip for the coming planting on stubble cover field

Harrow 耙



Disk Harrow
圆盘耙



Chisel Plow
弹齿耙耙地



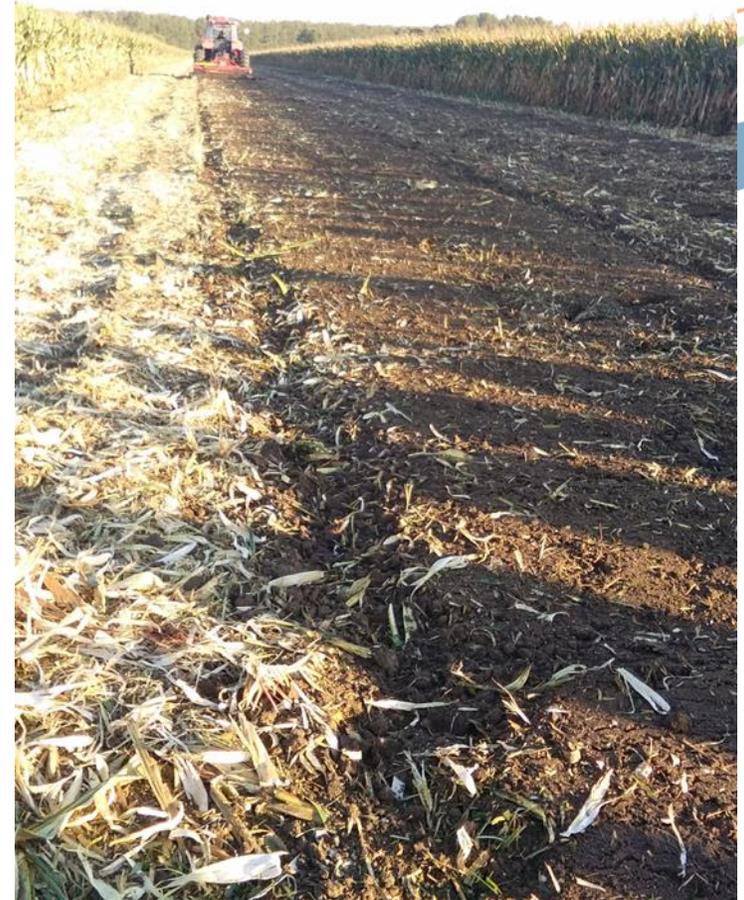
Mix stubble with soil, level soil surface, reduce stubble cover rate
利用圆盘耙或者弹齿耙将秸秆和土壤搅拌，以减少覆盖率，并适当平整土地

Subsoiler 深松机

Break hard pan and loose surface soil with subsoiler
深松打破犁底层，并且疏松表土层

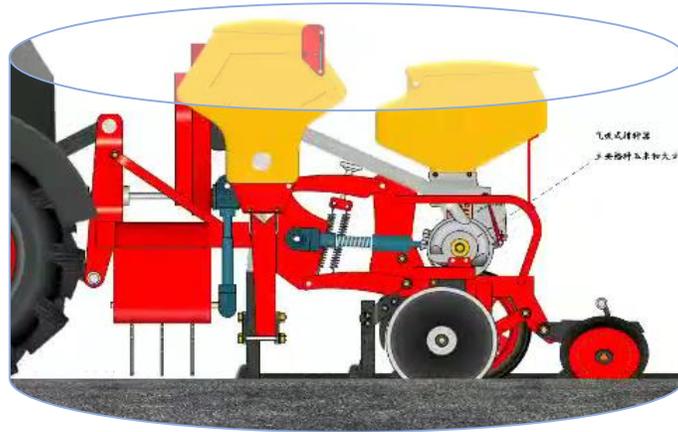


Shallow Rotary Hoe 浅旋耕



Powered shallow tillage to mix most stubble into surface soil
旋耕将较多秸秆混埋到地表以下

No till Seeder with disk opener 圆盘切草免耕播种机



No stubble block; Narrow furrow; lower soil disturbance
圆盘开沟器，没有秸秆堵塞，开窄沟，动土量小

No till Seeder with disk opener 圆盘切草免耕播种机



Powered strip till seeder 驱动防堵少耕播种机



Use powered knife to do strip till and make a clean zone for the coming sowing
以驱动部件带状耕作土壤，没有秸秆堵塞，形成清洁播种带，进行播种

Sprayer 喷药机



Robot
行间喷药机器人



High-clearance Sprayers
高架植保机



plant protection UAV
植保无人机



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Thank You !

