Promoting Food Security through Combating Soil Degradation in the Asia-Pacific
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Black soil conservation machinery and equipment in China

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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
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**

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
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
Thank You !