Cloddy soil

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What it does

Cloddy soils cover seeds too much. Clods cause problems in emergence, and limit water absorption for germination.

Why and where does it occur

The cloddy soils can be a problem in all dry direct-sown fields. It generally occurs because the soil is tilled when it is too dry.

How to identify

Check the field for the following symptoms:

- Soil clods much larger than seed size at planting
- Poor crop emergence in dry seeded fields

The pattern of damage is usually general across the field.

Various factors that may cause problems of crop establishment are undulating topography, cloddy soil, too deep seeding, too shallow seeding, too soft soil at seeding, poor emergence in low spots in fields, heavy rainfall at seeding, soil crusting, poor seed quality, low seed rate, poor water/irrigation management, water stress, muddy water at seeding, clogged seeder and/or pests such as ants, birds and rats that remove seed at planting.

To confirm cause of problem, check or ask farmer if clod size is much larger than seed size at the time of dry seeding.

Why is it important

Good planting or crop establishment lays the foundation for good yield.

Cloddy soil can greatly reduce crop stand in dry direct-seeded fields. Its economic effect can be direct in terms of stand and yield reduction or indirect in terms of increased tillage costs due to breaking down of clod size.

How to manage

When soil is tilled too dry, it will typically result in large dry hard clods, which are difficult to break down.

For dry direct-seeding, tillage is best done when soil moisture is below field capacity and well above permanent wilting point.

- Till sandy soils at a higher percent of available moisture than clayey soils.
- Secondary tillage should follow primary tillage within a day or two for clayey soils with a little wider window of opportunity for sandy soils.
- Rainfall or irrigation can break clod size down.

Rice Fact Sheet

Assam Agribusiness and Rural Transformation Project (APART)

The World Bank is the funding agency of APART
Department of Agriculture, Assam is the nodal department for implementation of APART
ARIAS Society is the State level coordinating and monitoring agency for APART
Assam Agricultural University is the leading Agricultural University of the State and implementing agency of APART, imparting research and scientific support.
International Rice Research Institute (IRRI) is the rice global leader providing technical and hand-holding support in the implementation of APART