

## What it does

When seeds are poorly distributed, either crop stand of plants becomes too dense or have unnecessary spaces in between when plants are too few. Weeds also grow and compete with the crop for nutrients.

## Why and where it occurs

Crop density is a problem of direct-seeded fields, especially when broadcast-seeded. Crops can be surface-broadcast (wet or dry), drill-seeded (using machines) or

broadcast and incorporated when sown on dry fields. Pre-germinated seed is typically used when wet direct seeding. Direct-seeded fields tend to have greater problems of lodging, especially when the seed is surface sown. When seeds are broadcast, fields can have patches of either too many or too few plants depending on the skills of the broadcaster and the soil conditions where the seed lands. Farmers often use high seed rates due to poor seed quality, to compensate for losses to rats, birds, and snails, and to increase crop competition with weeds.

## How to identify

Check the field for the following:

- Plant count too high (e.g., > 250 plants per m<sup>2</sup>) or too low (e.g., < 75) in direct-seeded fields
- When too close, plants could have thin stems and possibly lodge
- When too few plants, there would be spaces in the crop, weeds could grow and yield potential could be lost

Pattern of damage is usually uneven across the field.

Various problems causing problems of crop establishment (e.g., cloddy soil, seed too deep, soil too soft at seeding, poor emergence in low spots in fields, heavy rainfall at seeding, soil crusting, poor seed quality, low seed rate, water stress, muddy water at seeding, clogged seeder and/or pests such as ants, birds and rats that remove seed at planting. To confirm the cause of problem, check or ask the farmer about seed rate and how the crop was planted.

## How to manage

- For good establishment, manage water properly and ensure well leveled water, allowing water to settle
- Ensure an appropriate seed rate with even distribution of seed
- Crop stand should be of the order of 100-200 plants per m<sup>2</sup>, use seed rates between 40-60 kg per ha

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Plant count is either too high or too low; weeds can grow where there are spaces between plants