



Science Links Japan

JST Japan Science and Technology Agency

## Japanese journal of crop science

The Crop Science Society of Japan [Info](#) [Link](#)[TOP](#) > [Journal List](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN: 1349-0990

PRINT ISSN: 0011-1848

### Japanese journal of crop science

Vol.65 , No.3(1996)pp.430-436

[\[ Full-text PDF \(990K\) \]](#) [\[ References \]](#)

#### Effects of Mixed Coating of Oxygen Generating Chemicals and Several Kinds of clay on Seedling Emergence in Direct Sowing of Paddy Rice

Yasunori NAKAJIMA, Minoru SEKI and Shigenori TAKAHASHI

- 1) Aichi-prefecture Agricultural Research Center
- 2) Aichi-prefecture Agricultural Research Center
- 3) Aichi-prefecture Agricultural Research Center

[Published: 1996/09/05]

[Released: 2008/02/14]

#### Abstract:

The effects of mixed coating of seed with oxygen-generating chemicals containing 16% calcium peroxide ( $\text{CaO}_2$ ) and clay on the seedling emergence of rice (*Oryza sativa* L.) from flooded soil were examined. The emergence of seedlings was improved by coating seeds with oxygen-generating chemicals and clay mixed coating compared with only a single coating of oxygen-generating chemicals. However, the effect of mixed coating was different with clay. Diatomaceous earth 1 and Japanese acid clay 1 of the montmorillonite group showed a larger effect on emergence than clay of the kaolinite group. From the observation of flooded soil mixed with 0.3% methylene blue, where the oxidized area becomes blue, the size of the oxidized area around the seed was found to be larger for the mixed coating than for the single coating. The size was related to the collapse of the mixed coating materials in water. The mixed coating of the oxygen-generating chemicals and diatomaceous earth 1 or Japanese acid clay 1 showed a large effect on the maintenance of the oxidized area around the seed. It was found that the intensity of staining of the oxidized area around the seed with methylene blue was more closely associated with emergence than was the size of the oxidized area. In particular, diatomaceous earth 1 showed a large effect on the inhibition of the soil reduction around the seed. Additionally, a small amount (from 25 to 50%) of diatomaceous earth 1 showed a large effect on the emergence of seedlings.

#### Keywords:

Calcium peroxide, Clay, Emergence of seedling, Direct sowing into flooded soil, Soil oxidation, Paddy rice

[\[ Full-text PDF \(990K\) \]](#) [\[ References \]](#)

