

Equilibrium Moisture Content

What is equilibrium moisture content?

The equilibrium moisture content (EMC) is the final moisture content of the grain or seed after being stored for some time.

Why is equilibrium moisture content important?

During storage, the final moisture content of grain will be determined by the temperature and relative humidity of the air that has surrounded the grain. If the grain is not protected against the humidity in the air, particularly during the rainy season when the relative humidity is very high, the grain moisture content will rise and this will lead to deterioration in both grain and seed quality.

The following table shows the EMC of paddy under different storage conditions. The underlined & colored areas represent the desirable environmental conditions for safe storage of paddy or rough rice in the tropics. Grain needs to be stored at less than 14% moisture and seed at less than 12%.

Relative Humidity	Storage Temperature (Celsius)						
	22°C	24°C	28°C	32°C	36°C	40°C	44°C
50%	11.2	10.9	10.7	10.5	10.2	10.0	9.9
55%	11.7	11.5	11.2	11.0	10.8	10.6	10.4
60%	12.3	12.0	11.8	11.6	11.4	11.2	11.0
65%	12.7	12.6	12.4	12.2	12.0	11.8	11.6
70%	<u>13.5</u>	13.3	13.1	12.8	12.6	12.5	12.3
75%	14.3	<u>14.0</u>	<u>13.8</u>	13.6	13.4	13.2	13.0
77%	14.6	14.3	<u>14.1</u>	<u>13.9</u>	13.7	13.5	13.4
79%	14.9	14.7	14.5	14.3	<u>14.1</u>	<u>13.9</u>	13.7
81%	15.3	15.1	14.9	14.6	14.5	14.3	<u>14.1</u>
83%	15.7	15.7	15.3	15.1	14.9	14.7	14.5
85%	16.1	15.9	15.7	<u>15.5</u>	15.3	15.1	15.0
87%	16.6	16.4	16.2	16.0	15.8	15.6	15.5
89%	17.2	17.0	16.8	16.6	16.4	16.2	16.1
91%	17.9	17.7	17.5	17.3	17.1	16.9	16.7

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