EFFECT OF TEMPERATURE ON SOYBEAN QUALITY USING SPOUTED BED TECHNIQUE

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The effect of temperature on moisture reduction rate and soybean qualities using a two-dimensional spouted bed dryer has been studied. Air velocity was varied in a range of 15.86-20.50 m/s, with a fixed hold-up of 25 kgs. The soybean with initial moisture levels varying between 28 and 32% dry basis was dried to 12-17% dry basis using inlet air temperatures of 120-150°C. The experimental results indicate that higher temperatures and higher moisture contents provide faster moisture reduction rate. The qualities of soybean have also been considered in terms of stress cracking, breakage, urease activity and protein solubility in 0.2% KOH. It is shown that the percentages of cracking and breakage depend on temperature, final moisture content and degree of collision of kernel with deflector. The percentages of stress crack and breakage lie in the range of 50-60% and of 3-24%, respectively. The urease activity and protein solubility are accepted with slightly changing in the protein quality.