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## HOW FAST DO SOYBEANS DRY DOWN DURING THE PREHARVEST TIME?

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*How much time should farmers schedule for soybean dry down this growing season?*

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*By: Rafael Martinez-Feria, Sotirios Archontoulis and Mark Licht, Iowa State University*

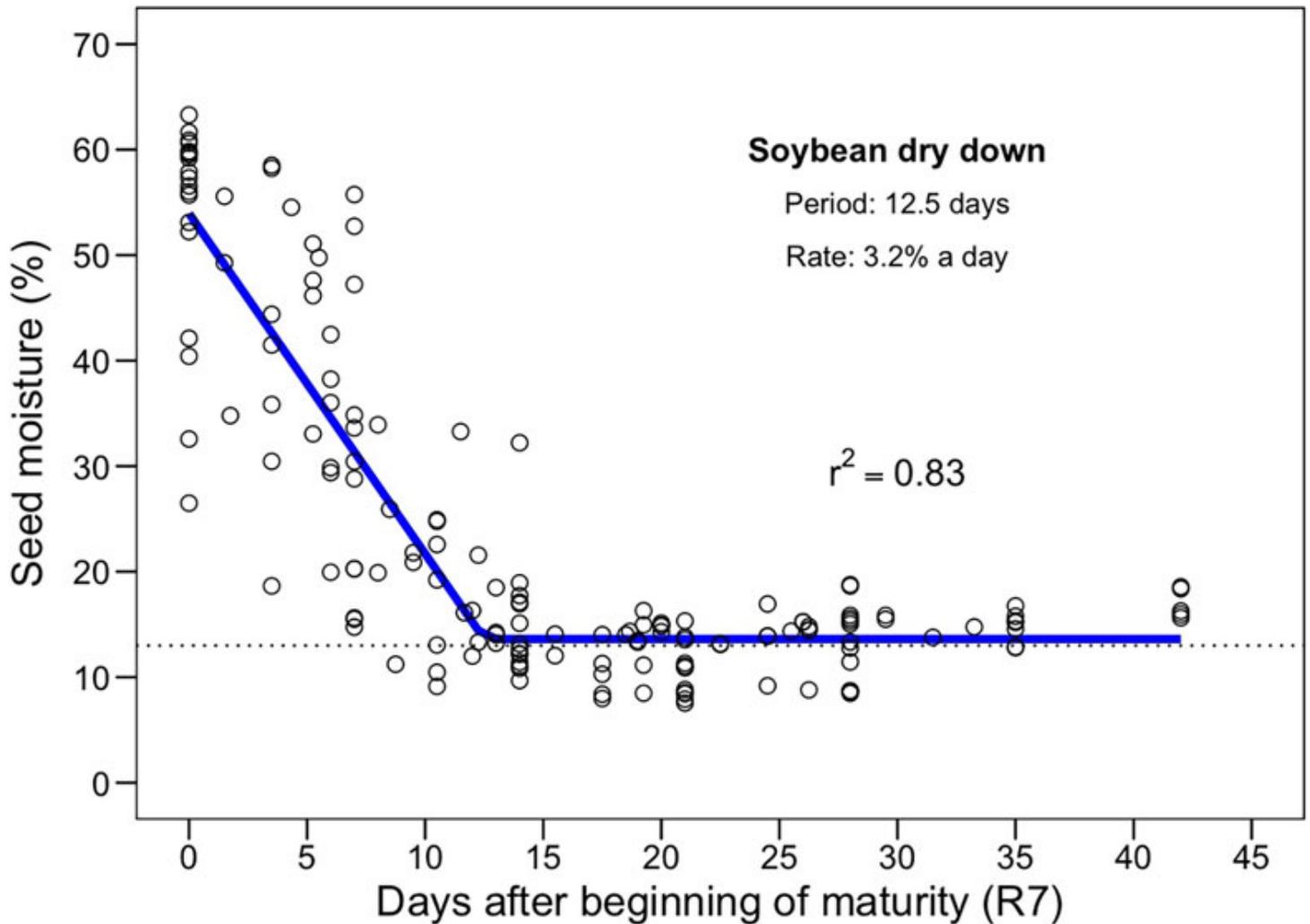
Soybean fields are nearing maturing across Iowa with minimal delay compared to 2016 due to cool temperatures. However, soybean sensitivity to day length speeds up crop development towards physiological maturity. During this time, senescence is occurring and carbohydrates are being converted to oils. Soybean seed moisture changes very little and remains near 60 percent during the de-greening period. As the pods turn to mature color at the beginning of maturity stage (R7), seed dry matter accumulation is complete and seed moisture rapidly decreases.

To quantify the rate of soybean dry down (percent seed moisture decrease per day until constant seed moisture) and investigate how planting date and maturity group affect the dry down rate we utilized a field experiment near Ames, IA. The experiment contained four planting dates and four maturity groups over three years. For this dataset soybean pods were collected to determine soybean grain moisture from September through October. The data analysis indicated that soybean dry down rate is affected by maturity group selection, planting date, and year (data not shown).

During the first 12 days following maturity, the average dry down rate was 3.2 percent per day, which is about five times faster than that of corn. After that period, the dry down rate significantly slows down or stops completely, stabilizing at about 13 percent moisture.

Soybean seeds are prone to take up moisture from the atmosphere under cold and humid conditions, which can delay dry down. Additionally, in conditions where the atmosphere has a high vapor pressure deficit (warm temperatures with low humidity) soybean grain dry down can reach 9 to 10 percent grain moisture.

Paying attention to when the soybean crop reaches maturity can help farmers schedule harvest activities. Under average weather conditions, soybean will reach 13 percent moisture in about 12 days following maturity. However, if weather conditions are conducive, grain dry down can be achieved in as early as 9 days after maturity.



Average seed moisture dry down (blue line) across 4 soybean varieties representing a range of maturity groups at 4 planting dates from 2014 to 2016 near Ames, IA. Horizontal dashed line represents 13% grain moisture, open circles are actual data.

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**For media inquiries, please contact Aaron Putze, ISA Communications Director at [aputze@iasoybeans.com](mailto:aputze@iasoybeans.com)**

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