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Pasture on Demand: Can Hydroponics Supply Efficient Feed During a Drought?

The purpose of this project is to determine if sprouted wheat could supply feed with a good feed value during times of drought and when hay prices are high. Does the number of sprouting days affect the feed value of the wheat? The hypothesis of this project is that ten day old wheat sprouts will have the best feed value, when grown in a hydroponics setting.

The experiment involved measuring seeds. Then watering the seeds in a jar for 2 days. The seeds were then put in a tray and spread out evenly. After germination, the sprouts were collected at different times (10 days, 6 days, 2 days and dry) then sent to a lab for protein, dry matter, moisture and starch/NFC analysis tests.

The hypothesis proposed was partially correct. The 10-day old sprouts had the most protein. They had an average of 20.31% protein, but only had 31.44% starch/NFC. The sprout protein level from highest to lowest were: 10 day, 6 day, 2 day and then dry. The starch/NFC levels from highest to lowest were: 2 day, dry, 6 day and then 10 day old sprouts.

These results showed that the 10 day old sprouts contained the most protein, but the 6 day old sprouts contained a high amount of protein and starch. The 2 day sprouts and dry sprouts had twice the amount of starch/NFC then the 10 day old sprouts. Based on the experiment results, hydroponics can supply feed with a protein and starch/NFC similar to alfalfa hay.