

This is what Tillering all about!NCSU reports to Biobased USA, Getting More Than One "Plant" or "Shoot" from a Seed is Tillering, Soysoap Can Help Tillering For Increasing World Crop Production

NCSU: The capability of getting more than one "Plant", "Branches" "Head Rows" "Buds" "Root Mass" or "Shoot" from a seed is known as "tillering". It is commonly found in grass crops that have meristematic tissue above each node. These active growth sites can produce another stem (tiller) under the right conditions. Dicots such as soybean do not have the same type of meristems at their nodes so they do not produce more stems or tillers. Rather they have the capability of making branches at the nodes. Branches and tillers have similar function which is to provide more leaf area under good growing conditions and the sites for more fruit production.

NCSU: So what triggers a tiller? The crop University Plant Physiologist says that tillers are produced whenever the amount of photosynthates (sugars) produced by the plant photosynthesis exceed the amount of energy required to maintain plant function. In other words when the plant is producing lots of energy and does not require nearly that much energy to maintain its growth it then makes a tiller. So tillering is a sign of a healthy, actively growing plant that has lots of sunlight, plenty of nutrients, and cool evening temperatures.

NCSU: What you triggered might not be traditional tillering but better plant performance and nutrient uptake which caused the plants to grow better resulting in multiple tillers that are normally not achieved. These Oats and Milo Sorghum plants can produce multiple tillers but rarely do because they don't have the nutrients or growth to trigger these excess tillers.

Purdue: It is dependent on hormonal regulation (auxin, cytokinins, and gibberellins as influenced by certain nutrients balance (Mn, Cu, Zn, Fe, etc.

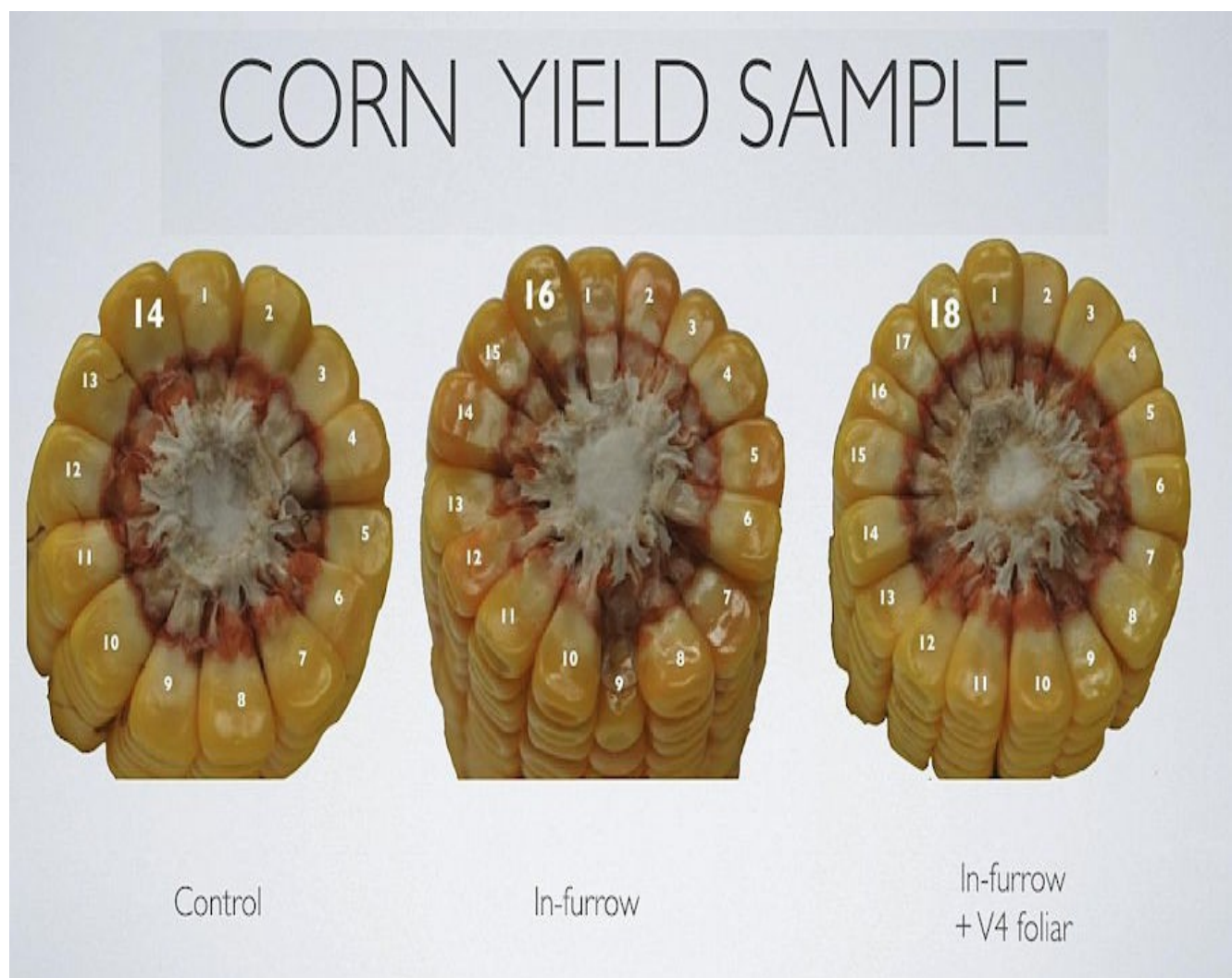
Biobased USA Observations We Have Seen That Fall Outside the Definition of Tillering!

Lastly it was reported to us in North Carolina Christmas trees that we were able to grow a 6 foot premium grade Christmas tree in just 2.5 years were its always taken 5 years.

How did it become a premium quality normally there are 3 to 4 buds as I recall be limb, but on our trees that grew this fast there were 10 to 12 buds. The Christmas tree grew the first year where about 24 inches where in the past they only grew 12.

Corn Production 2 more Rows of Corn per ear! Biobased USA Observations We Have Seen That Fall Outside the Definition of Tillering!

Below is a good example of Corn Tillering and providing the farmer with 15 to 30 more bushels and acre by adding 2 to 4 more rows per ear!



Lastly I wanted to switch back to Corn something near and dear to your heart. We have always gotten 15 bu more per acre of corn. Sometimes we get 30 bushels. How will what we have seen is corn grows 2 extra rows. If its seed variety is 14 it becomes 16 row corn, if its 16 we get 18 and if its 18 w get 20 row. On rare occasions we have seen 4 extra rows.

So is it possible that we have taken Tillering to a new level or created another way for plants to grow that can achieve more production. We started with plants, shoots and stalks. We have done this for 20 years. But we have seen more rows on corn, in the heads of wheat, oats and barley we have seen the heads have 6 vs 4 rows, and more branches on limbs and trees.

We apologize for calling things wrong as I have but I am a layman and thanks for correcting me. But when you do the additional things we have done like branches, 2 to 4 extra rows on corn, More lateral, hair and deeper tape roots, and heads have extra rows on wheat, barley and oats. What do you call this as it seems to outside the definition of Tillering?

Oats, Wheat and Barley Production. Biobased USA Observations We Have Seen That Fall Outside the Definition of Tillering!

At Biobased USA we have seen this on a few crops and thanks to now understanding it we can change our application program along with our covalent bonding procedures to increase crop production. Here are 2 examples of how our product and application program was able to increase production. No wonder that we doubled normal production on Oats to 133 bu an acre or Barley to 103 bu an acre or Wheat to 160 bu acre.

Pico Ag 25B Grain Sorghum (Milo) Treated and Untreated!

PicoAg 25B was used 1.25 oz per acre in furrow once so a 2.5 gallon jug treated 255 acres at \$1.51 per acre and got at least 5 times the Milo Grain Sorghum as the untreated!



PicoAg 25B Treated and Untreated Sorghum



PicoAg 25B Treated Grain Sorghum (Milo)!



PicoAg 25B Untreated Grain Sorghum (Milo)!

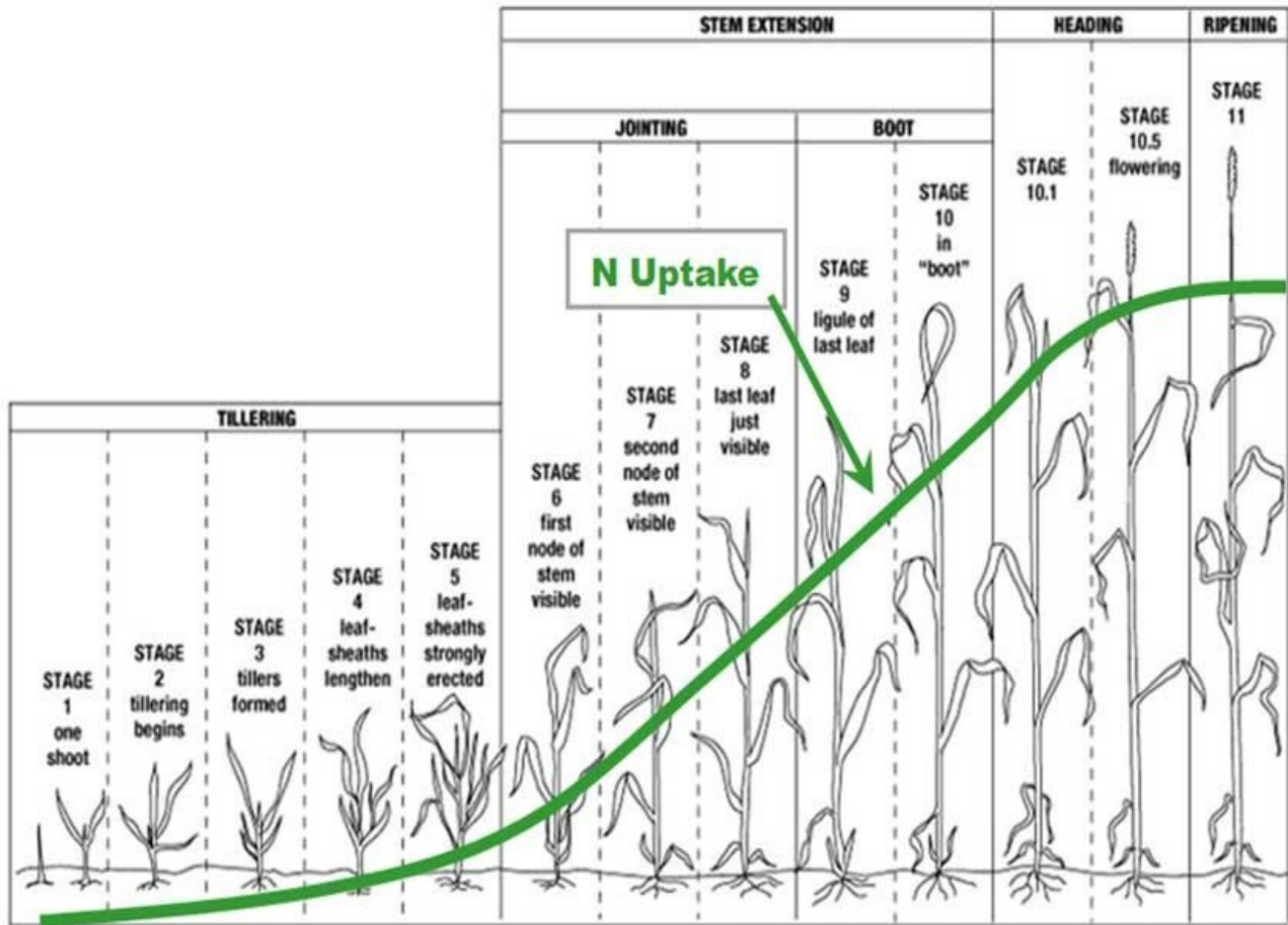


PicoAg 25B Treated Oats! BARLEY: These trials were on Barley field and farmer got 102 bushels acre and twice the straw, NC extension office certified Farmer never had more than 70 bushels acre. Farmer got NCSU validate 104+ bushels acre bearded barley, Farmer had never got more than 70 bushel area





When the plants need Nitrogen its already gone after 28 days



Source: S.A. Ebelhar, University of Illinois.

Nitrogen Management Key to Getting Max output when growing a crops! If only all farmers thought this way! But do they really apply Nitrogen days after 28 to about 110 when growing any crops from Vegetables to Major Crops, No!! Tillering isn't just stalks and heads, its also Tillering in Root Mass for Lateral, Taps, Limbs and Hair Roots.

I love this graph. You want to grow 100 bushels beans and more wheat, barley and oats. This has to be the first step and applying 4 times might just work as it does for sure on rice and vegetables. The Nitrogen is long gone from day 28 to 105 and its needs to be there during vegetative modes!

