

# Evaluation of Palisade 2EC on Spring Wheat

## ICB1016

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Palisade 2EC (*trinexapac-ethyl*) is a plant growth regulator for grass species. Trinexapac-ethyl inhibits the formation of gibberellic acid preventing growth of the internodes of the plant leading to shorter plants and reduced risk of lodging (Nagelkrik 2012). Palisade 2EC is marketed by Syngenta.

### Methods

The purpose of this study was to evaluate the effects a new formulation of Palisade 2EC at different application rates and timings on spring wheat. The study was established at the Spillman Agronomy Farm near Pullman, WA. Treatments were applied at two separate timings, Feekes 6 and Feekes 10, with one split application at both timings, detailed in Table 1 and Table 2. The study was conducted in a randomized complete block with 4 replications. Plots were 10' by 30' long.

Spring wheat stunting was visually rated 20, 36, and 56 (application A) days after treatment. Visual percent heading of spring wheat was rated 20 days after treatment of application timings A, Table 1. Plots were harvested using 5' header combine on August 30, 2016. Percent data were arcsine square-root transformed. All data were subjected to an analysis of variance using the statistical package built into the Agricultural Research Manager software system (ARM 8.5.0, Gylling Data Management).

### Results

Spring wheat was significant stunting 20 days after application A compared to nontreated and both treatments of UAN (32 and 64 fl oz A<sup>-1</sup>). Palisade 2EC applied at 0.114 lb ai A<sup>-1</sup> had the greatest percent stunting, 45%. Palisade applied at 0.081 lb ai A<sup>-1</sup> had significantly less stunting, 13%, than the higher rate of Palisade although similar stunting was observed with the split rate of Palisade 0.045 lb ai A<sup>-1</sup> (Table 2).

Percent spring wheat stunting 53 days after treatment for application A and 36 days after treatment for application B were similar for all treatments, less than 9%, except for Palisade 2 EC (0.114 lb ai A<sup>-1</sup>) applied at Feekes 6 which had a significantly greater percent stunting, 35% (Table 2).

The percentage of spring wheat heading 17 days at treatment was significantly less for all applications including Palisade 2EC (0.045, 0.081, and 0.114 lb ai A<sup>-1</sup>) at the Feekes 6 application timing. Palisade 2EC at a rate of 0.114 lb ai A<sup>-1</sup> (application A) had the least percent heading of 46%. Next was Palisade 2EC at a rate of 0.081 lb ai A<sup>-1</sup> (application A) with a percent heading of 82% and last was the split application of Palisade 2EC (0.045 lb ai A<sup>-1</sup>, application A) with a percent heading of 91%. While all other treatments had percent headings of 100% 17 days after treatment.

Application timing and rate did not significantly effect on yield or test weight (Table 2).

### Literature Cited

Nagelkrik M. 2012. The effect of Palisade 2EC plant growth regulator on the performance of soft winter wheat. Michigan State Extension, East Lansing, MI 4882

**Table 1. Treatment application details**

<b>Study Application</b>	<b>A</b>	<b>B</b>
Date	June 1, 2016	June 20, 2016
Application volume (GPA)	15	15
Crop Stage	Feekes 6	Feekes 10
Air temperature (°F)	66	76
Soil temperature (°F)	58	64
Wind velocity (mph, direction)	7, SW	7, SW
Cloud cover (%)	0	0

**Table 2. Spring wheat percent heading, plant heights, and yield following applications of Palisade 2EC at different timings and rates. Means followed by the same letter are not statistically significantly different ( $\alpha=0.05$ ).**

<b>Treatment</b>	<b>Application Code</b>	<b>Rate</b>		<i>June 20, 2016</i>	<i>June 20, 2016</i>	<i>July 26, 2016</i>	<i>August 30, 2016</i>	
		<b>fl oz/A</b>	<b>lb ai/A</b>	<b>Stunting</b>	<b>Heading</b>	<b>Stunting</b>	<b>Yield</b>	<b>Test weight</b>
				<b>%</b>	<b>%</b>	<b>%</b>	<b>bu/A</b>	<b>lb/bu</b>
Nontreated				-	-	-	59	60
Palisade 2 EC	A	5	0.081	13 b	82 c	9 a	50	59
UAN	A	32						
Palisade 2 EC	A	7	0.114	45 a	46 d	35 b	48	59
UAN	A	64						
UAN	A	32		0 c	100 a	3 a	54	60
UAN	A	64		0 c	100 a	0 a	56	59
Palisade 2 EC	B	5	0.081	0 c	100 a	3 a	46	61
UAN	B	32						
Palisade 2 EC	B	7	0.114	0 c	100 a	0 a	51	60
UAN	B	64						
Palisade 2 EC	A	2.75	0.045					
UAN	A	32		5 bc	91 b	6 a	46	60
Palisade 2 EC	B	2.75	0.045					

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