

Poster Presentations

The purpose of this presentation is to provide the basics for making and printing a poster for a scientific meeting.

Note:
You will be creating your poster as a single slide in PowerPoint.

This PowerPoint has been adapted by Cheryl Kaiser for the UK Department of Plant Pathology.

It is based on a presentation created by Dr. Robert Geneve, UK Department of Horticulture and used with his permission.

Stratification, hydrogen peroxide and germination temperature regime influence germination and dormancy release in eastern gamagrass [Tripsacum dactyloides (L.) L.]

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Introduction
Eastern gamagrass (*Tripsacum dactyloides* L.) is a warm season perennial grass recommended for forage, wildlife, and conservation use in Kentucky and across its native range (Fig. 1) (1). While widespread adoption of this species has been limited by establishment and stand establishment. Less than adequate establishment has been attributed to a combination of seed dormancy and low seed quality. Stratification and fall planting have been recommended to enhance release of dormancy (1, 2), but dormancy may not be completely released (2). Published research and preliminary investigation indicates synergistic application of H₂O₂ promotes germination and dormancy release of eastern gamagrass seeds (2). The objective of this study was to investigate whether germination temperature contributes to consistent seed germination following dormancy release by stratification or H₂O₂.

Materials and Methods
Two seed lots of Fall sown eastern gamagrass were provided by Jimmy May, J.H. May Companies Co., Auburn, KY. Seeds were harvested and cleaned in fall 2005 or 2006 and held in climate-controlled storage (17°C/20% RH) until used for studies in spring of 2007. Initial viability was determined on each lot prior to testing using a standard tetrazolium (TZ) staining protocol (3).
Stratification
Seeds harvested in 2005 were stratified in wetted cotton towels at 5 or 10°C for 18 weeks. Following stratification 4 replicates of 20 surface sterilized seeds were placed in glass Petri dishes lined with Whatman moistened with distilled water. Seeds were germinated at 20/10°C (16 hr dark/8 hr light). Germination was recorded at 7 day intervals. Distilled water was added to dishes as needed to maintain adequate moisture. Dormancy assessment (TZ) was conducted at the end of the test period.
Germination Temperature
A subsample of 2006 harvested seeds was stratified at 10°C for 8 weeks. Unstratified seeds were soaked in distilled water or 15% H₂O₂ for 18 hours at ambient conditions. Twenty surface-sterilized seeds for each treatment were placed in glass Petri dishes as specified previously. Four replicates of each treatment were randomly assigned to a constant (5 or 20°C) or alternating (10/5, 15/5, 10/5, 15/5, 20/5, 20/5°C) germination temperature regime. Treatments consisted of 9 hr light/15 hr dark daily, light was concurrent with higher temperatures in the alternating regimes. Germination was recorded at 7 day intervals. Dormancy assessment (TZ) was conducted at the end of the test period.

Results
Stratification between 2 and 8 weeks at 5°C or 10°C as well as H₂O₂ application enhanced germination speed, total germination and reduced dormancy compared to unstratified seeds (Fig. 2). Stratification was more effective than H₂O₂ for dormancy release, but the impact on germination speed was similar (Fig. 3). Germination temperature had a significant impact on germination percentage in both stratified and H₂O₂ treated seeds (Table 1). Alternating temperatures were generally more effective in promoting germination and reducing dormant seed than constant temperatures. Optimal germination occurred at 15/25, 15/20 or 20/20°C, where germination averaged approximately 64% for seeds stratified at 10°C for 6 weeks and 32% for seeds imbibed in 20% H₂O₂ for 18 hours. In contrast, seeds germinated at constant 15 or 20°C germinated at less than 12 and 15% for stratified and H₂O₂ treated seeds, respectively.

Table 1. Germination percentage in eastern gamagrass seeds imbibed with water or 15% hydrogen peroxide for 18 hours or stratified at 10°C for 8 weeks prior to germination at various night/day (16/8 hr) temperature regimes.

Germination temperature (°C)	water	hydrogen peroxide	Stratification (TZ)
5/5	10.0	10.0	10.0
10/5	12.0	10.0	22.0
15/5	12.0	10.0	22.0
10/15	12.0	10.0	42.0
15/15	12.0	10.0	42.0
20/15	12.0	10.0	42.0
15/20	12.0	10.0	64.0
20/20	12.0	10.0	64.0
15/25	12.0	10.0	64.0
20/25	12.0	10.0	64.0
SE	0.2	0.2	0.2

Figure 1. Eastern gamagrass seed production field, Auburn, KY.

Figure 2. Impact of stratification at 5°C or 10°C on final germination percentage of 18-week stratified seeds after 5 weeks at 20/10°C.

Figure 3. Impact of germination temperature on germination speed and hydrogen peroxide treated seeds germinated at 20/10°C.

Discussion
The seed lots used in this study were of consistently high viability and germination percentage. Germination percentage was generally similar to that reported for eastern gamagrass seeds in other studies (4). The results of this study indicate that germination percentage is a highly variable trait and that dormancy release is a highly variable trait. Germination percentage is a highly variable trait and that dormancy release is a highly variable trait.

Literature Cited

1. Finneseth, C.H., Geneve, R.L., Klein, J.D., and May, J.H. (2007) Eastern gamagrass (*Tripsacum dactyloides* L.) seed production and establishment. *Journal of Horticultural Science and Biotechnology*, **88**, 1-10.

2. Finneseth, C.H., Geneve, R.L., Klein, J.D., and May, J.H. (2007) Eastern gamagrass (*Tripsacum dactyloides* L.) seed production and establishment. *Journal of Horticultural Science and Biotechnology*, **88**, 1-10.

3. International Seed Testing Association (ISTA) (2002) *International Rules for Seed Testing*. Zurich, Switzerland: International Seed Testing Association.

4. Finneseth, C.H., Geneve, R.L., Klein, J.D., and May, J.H. (2007) Eastern gamagrass (*Tripsacum dactyloides* L.) seed production and establishment. *Journal of Horticultural Science and Biotechnology*, **88**, 1-10.

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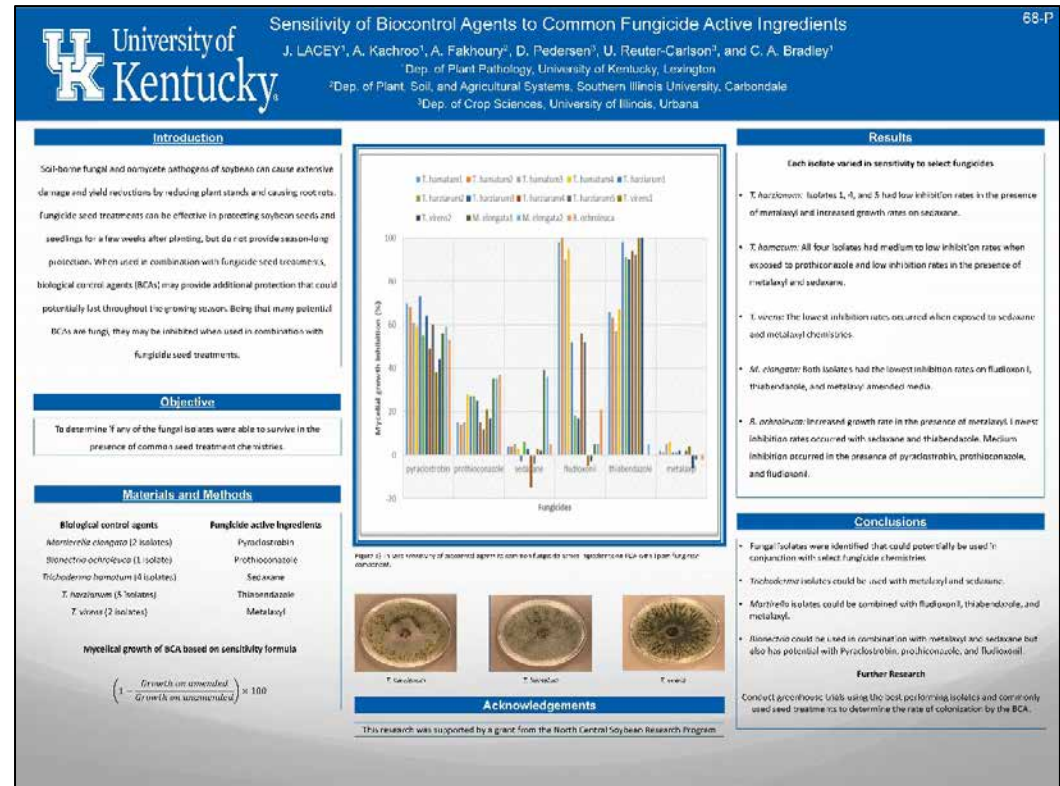
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Research poster organization

Basic poster organization generally includes sections for:

- Introduction
- Materials and methods
- Results
- Conclusions
- Literature cited/References

Acknowledgements and funding source may also be included.



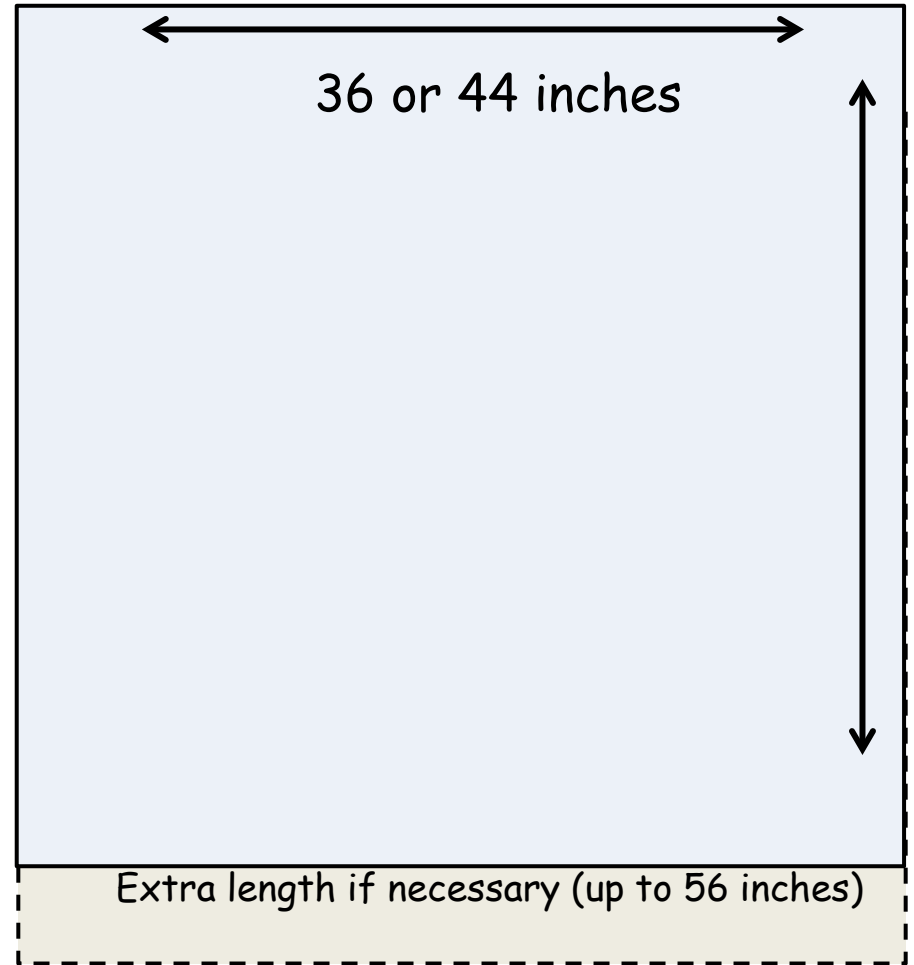
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Poster size

You will have fewer issues printing your poster if you set up the desired print size **before** beginning to create the poster.

Start by finding out what the size requirements are for the meeting you will be attending.

Our poster printer paper comes in rolls that are 36 inches or 44 inches wide; at least one of the poster's dimensions must be no wider than the paper roll. The other dimension cannot be longer than the PowerPoint limit of 56 inches.



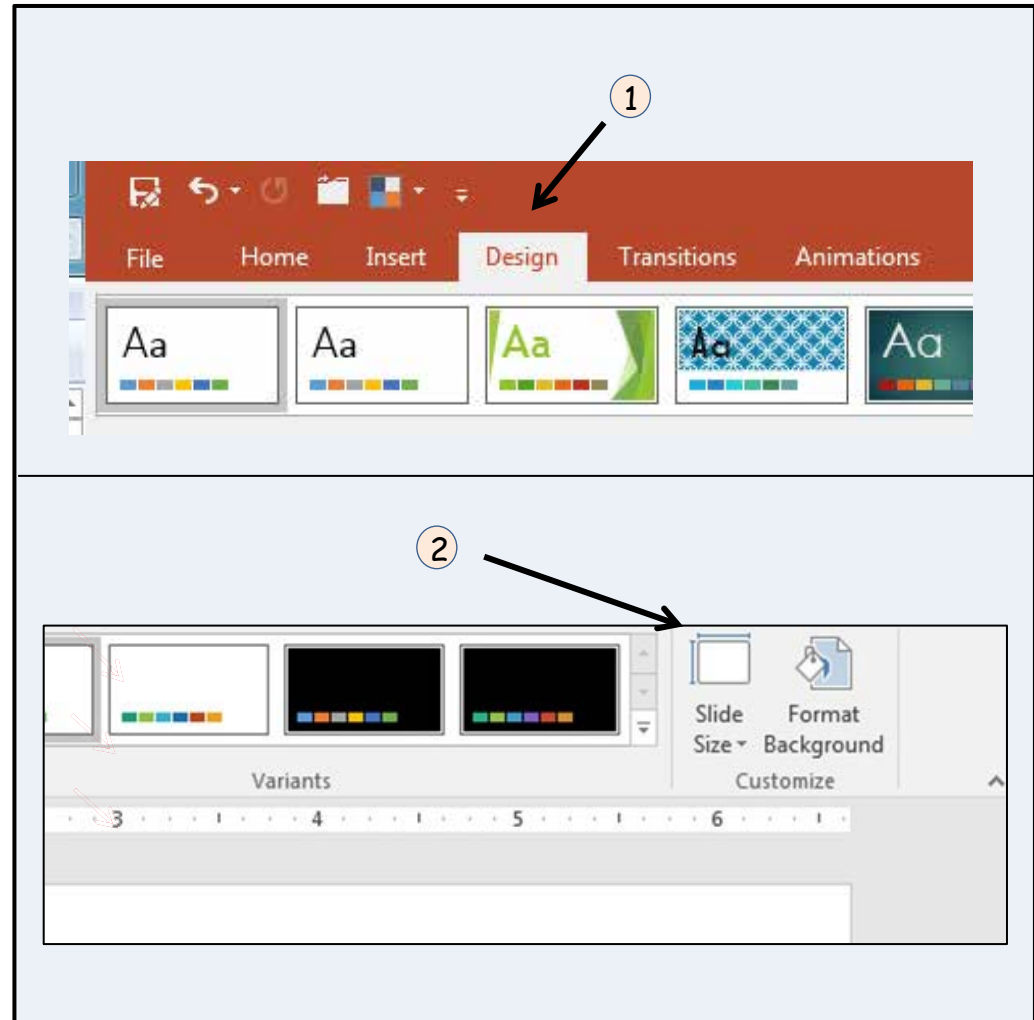
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Setting poster size

To set the poster size in PowerPoint:

(1) Go to the <Design> tab at the top left of the PowerPoint program page.

(2) Select <Slide Size > at the far right.



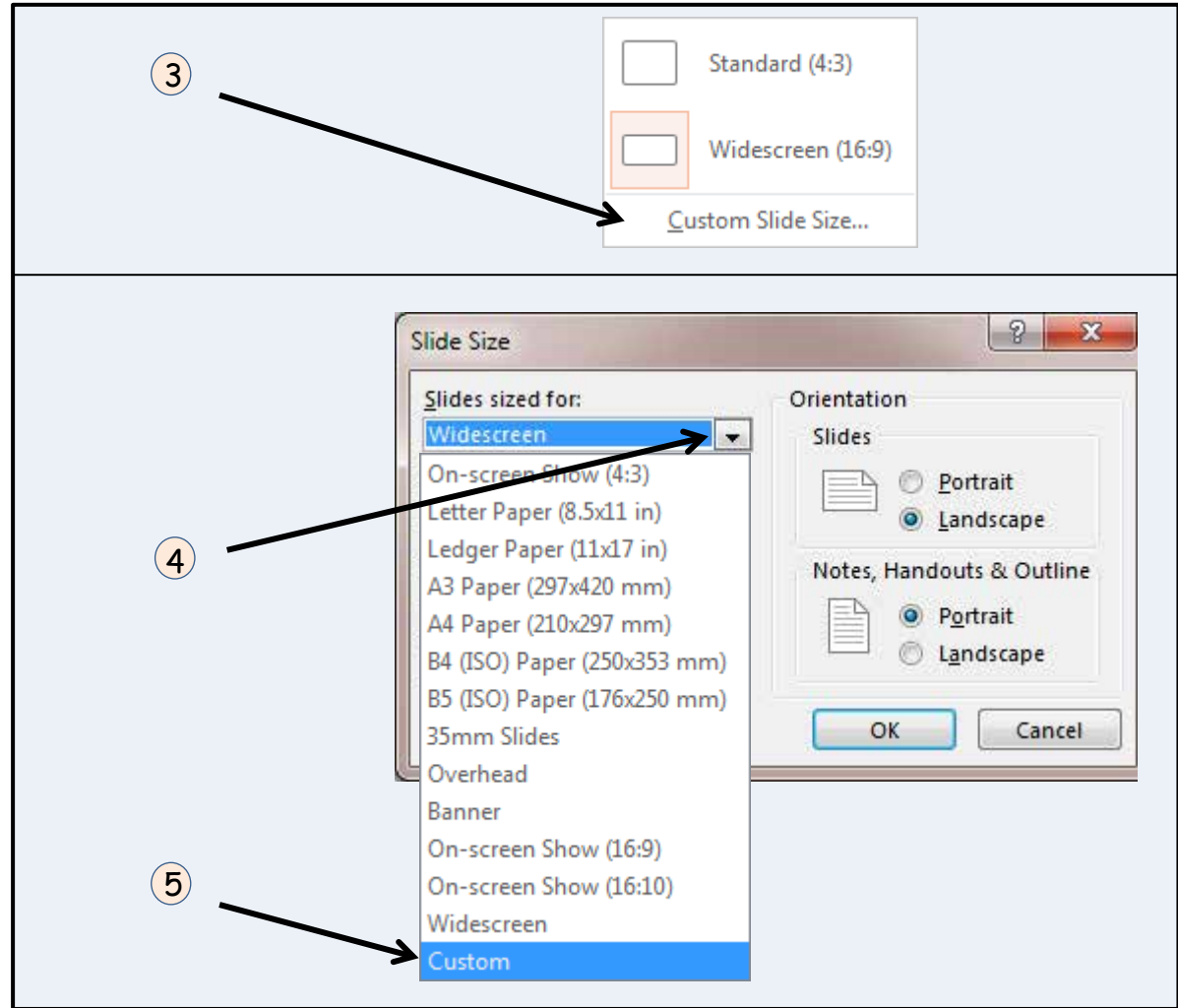
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Setting poster size (cont'd)

(3) Select <Custom Slide Size> from the menu.

(4) Click the down arrow.

(5) Select <Custom> from the dropdown menu.



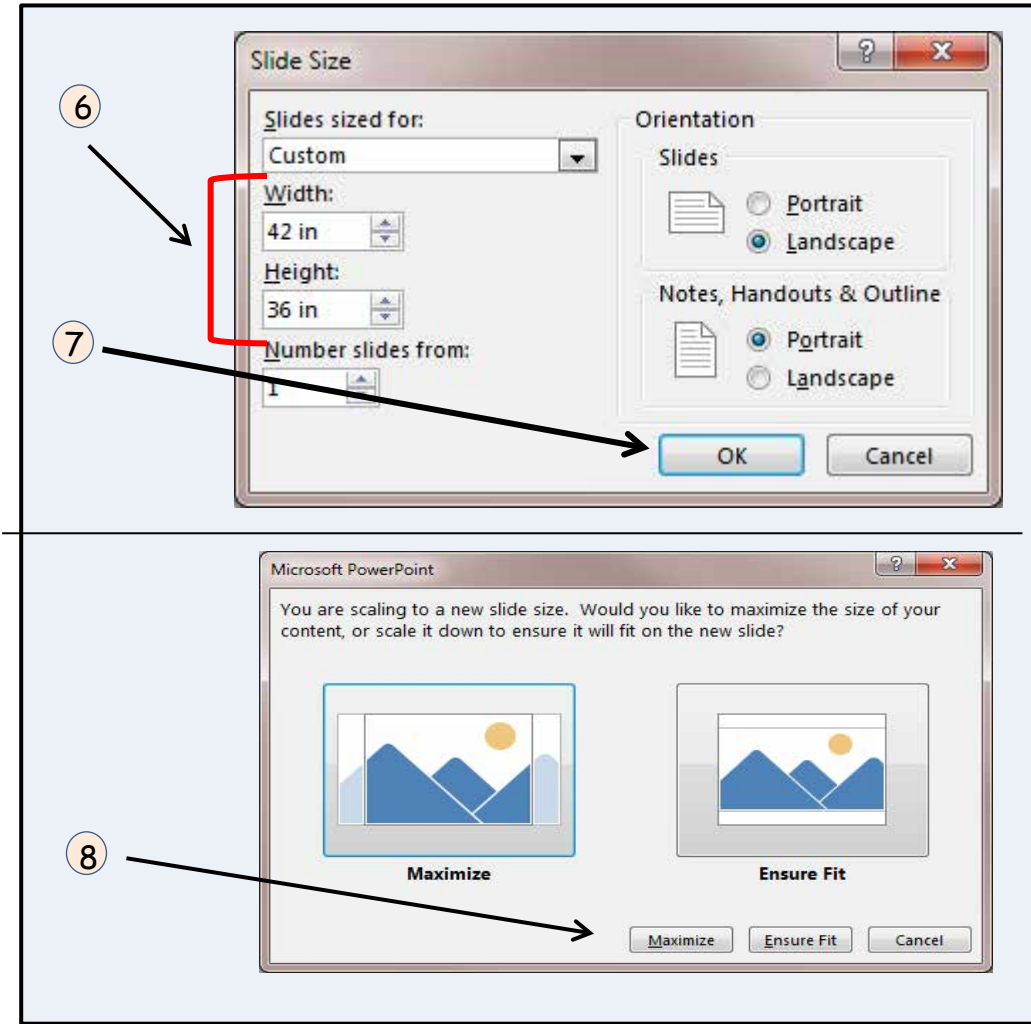
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Setting poster size (cont'd)

(6) Enter the width and height for your poster.

(7) Click <OK>.

(8) Choose <Maximize> or <Ensure Fit> (This selection is important if you have already created your slide and are changing the dimensions, but it should not matter with a blank slide).



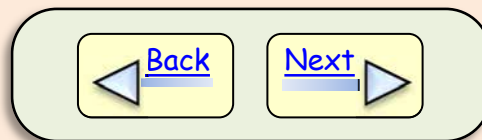
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Whoopsies!! Wrong poster size!

If you inadvertently create your poster so it is too large for the poster printer paper, you will need to reduce the slide size in PowerPoint. However, it is important to keep the same aspect ratio (ratio of height to width) or the slide will be distorted. To do this, calculate the new dimensions based on the original slide ratio.

For example, if your original slide is 45 by 54 inches, but you want the 45-inch side reduced to 44 inches; you then must calculate the other dimension.

- (a) Calculate the ratio of the original slide: divide 45 by 54 (equals 0.833)
- (c) Determine the other dimension: divide 44 by 0.833 (equals 52.82)
- (c) The new dimensions are 44 by 52.82
- (d) Double check your ratio: divide 44 by 52.82 (equals 0.833)
- (e) Set the new slide size (see previous slide)



Poster Presentations

Choosing poster colors

It is best to avoid using a background color or background image for your entire poster because of the amount of ink that must be used.

Instead, reserve color for highlighting, headings, borders, logos, and color images.

A black font color on a white background is easiest to read.

University of Kentucky
College of Agriculture,
Food and Environment

Tracking Corn Diseases Across Kentucky in 2016

Andrew Gennett, Conner Raymond, and Carl Bradley

Abstract
Food security is obtained from the cooperation between all facets of agricultural production working together in unison. Extension provides an important role between researchers and producers, while conducting field research and interfacing with the public. During the growing season we performed scouting on the premise that real time occurrence mapping of diseases would allow for more effective disease management. While building distribution maps, we collected samples for use in molecular and pathogen detection research. Thus, we served to assist the farmers through disease detection, and the scientist through providing samples for their study of economically important disease..

Methodology

- Study: Disease Symptoms and Pathogen Signs
- Scout: Coverage, Evaluations, and Documentation
- Laboratory: Growth Chamber, Microscopy, Diagnostics

Distribution

- Twitter: Real time disease observation reporting
- Handout: Information about Twitter and IPIPE website
- County Extension Agents: Connection to farmers infrastructure
- Disease Diagnostic Lab: Southern Rust confirmation Disease reports

References

Identification

Common Rust <i>Puccinia sorghi</i>		vs.	Southern Rust <i>Puccinia polysora</i>	
Dark Red	Color		Lighter tan-orange	
Sparse Both sides	Density Location		Tight One side	
Round	Spore Shape		Elliptical	

Results

Knowledge of local pest and pathogen populations influences all aspects of current and future disease management practices

Sharing disease observations provides valuable insights into regional distributions

Cataloguing yearly observations builds histogram of fields, regions, and populations thus predictions become more accurate

IPM

- High resolution mapping allows for improved disease management
- Pathogen progression tracking leads to more effective chemical application
- Becoming better stewards of our land, environment and food

KEY
Gray - Scouted County
Red - Confirmed Report



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Choosing font type & size

Block type fonts (e.g. Arial) work well with posters because they are easy to read.

Font size matters ... Refer to the guidelines to the right when selecting font sizes.

Remember: A poster is a visual medium, and images and figures can be more informative than many lines of text.

Suggested font sizes in Arial

The title should be greater than 72

Your name should be around 50-60

Headings should be around 48

Text should be at least 40

Images and figures should be large enough to see from several feet away (~5 inches high).



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Preparing the text


Text can be prepared in PowerPoint or it can be imported from Word using Word's copy and paste function.

It is best to divide the poster into columns (generally, 2 to 3).


You can divide the poster into sections by inserting text boxes.

Leaving "white space" between columns and major sections will be more visually appealing.

Management of Black Shank on Burley Tobacco with Oxathiapiprolin



Chris Ammerman,¹ Emily Pfeufer,² and Robert Pearce³
¹University of Kentucky, Grant County Cooperative Extension
²University of Kentucky, Department of Plant Pathology, Lexington
³University of Kentucky, Department of Plant and Soil Science, Lexington



INTRODUCTION


Black shank, caused by *Phytophthora nicotianae*, is the most damaging disease of burley tobacco in Kentucky. Along with sound cultural practices, soil and/or transplant water applications of fungicides are key management recommendations for growers. Until recently, the only fungicides labeled for use on tobacco for control of black shank were all in Fungicide Resistance Action Committee (FRAC) group 4. Although resistance to this group of fungicides has not yet been reported, there is potential for development of resistance with the repeated use of a single mode of action. In this study, two fungicides with different modes of action are investigated.

The purpose of these studies was to evaluate the efficacy of oxathiapiprolin (OXT) applied in transplant water and to soil after transplanting in two fields with histories of black shank compared to the current grower standard, RG (FRAC group 4). These studies compared management of black shank between OXT and RG treatments in addition to measures of plant safety.

OXT demonstrated a level of suppression similar to RG (TPW or soil directed at transplanting, 1st cultivation, layby) when applied at 19.2 oz/A in TPW only or at 19.2 oz/A in TPW treatment followed by applications of 9.6 oz/A and 3.8 oz/A at 1st cultivation and layby. Combinations of OXT at 3.8 oz/A and RG at 8 oz/A in TPW and the same rates at layby were also effective and equivalent to RG. RG was effective as a single treatment in TPW in the Clark County study but not in Grant County due to higher disease pressure.

TABLE 1 (left right): Treatment names, rates, and application timings for the 2013 black shank fungicide trials in Clark and Grant Counties, KY.

Treatment	Rate(s)	Application Timing
Untreated		
RG_IL	8 oz/A	TPW
RG_TL	16 oz/A	Layby
OXT_TPW_High	19.2 oz/A	TPW
OXT_TPW_Low	19.2 oz/A	TPW
OXT_IL_High	19.2 oz/A	TPW
OXT_IL_Low	9.6 oz/A	TPW
OXT_TL_High	3.8 oz/A	Layby
OXT_TL_Low	3.8 oz/A	Layby
OXT_IL_TL	3.8 oz/A	TPW
OXT_IL_TL	3.8 oz/A	Layby
OXT_IL_TL	7.7 oz/A	TPW
OXT_IL_TL	7.7 oz/A	Layby
RG_ILoff	19.2 oz/A	TPW-off-plant
RG_ILoff	16 oz/A	Layby
RG_ILoff	8 oz/A	TPW



OBJECTIVES AND METHODS

The purpose of this study was to evaluate the efficacy of OXT in management of black shank, as applied to a moderately resistant burley tobacco variety. Applications were made in soil-directed sprays, transplant water, and post-transplant drench at rates of 3.8 oz/A, 7.7 oz/A, 9.6 oz/A, 19.2 oz/A, and 38.6 oz/A compared to RG at labeled rates of 1 pt/A applied broadcast and incorporated and 0.5 pt/A in transplant water and 1 pt/A broadcast. Mancozeb was also included in one treatment (MD). These rates were selected to identify the most efficacious dose for acceptable control of disease and for return on investment.

Location. The trial was conducted in 2013 on land in Grant County, near Dry Ridge, KY.

Plot size & design. The experiment was conducted as a randomized complete block design with 4 replications. Plot size was two rows x 25 ft of 1N 86 with "4" level resistance to races 0 and 3 of *P. nicotianae*. Each two-row plot was bordered by one row of NCBH-129.

Field Preparation. Plots were inoculated with *P. nicotianae*. 100 cc of dried wheat grains previously inoculated with *P. nicotianae* were scattered onto border rows between plots.

Treatments. OXT was applied as a drench of 3.8, 7.7, 9.6, 19.2, and 38.6 oz/A simulated transplant water. Each plant was drenched with a 4.8 oz solution to achieve application volume of 245 gal/A. OXT was also applied at 3.8 oz/A and 9.6 oz/A broadcast and incorporated RG was applied at 0.5 and 1 pt/A along with an untreated control. A CO₂ powered backpack sprayer (filled with 8004 flat fan nozzles) was used to apply broadcast treatments at an application volume of 25 gal/A.

Evaluation. Area under disease progress curve (AUDPC) was used to measure severity of disease, and was calculated from 4 ratings (number of symptomatic plants per plot) made between planting and harvest. Tobacco was harvested and cured according to standard practices. Data were subjected to analysis of variance; mean separation was performed using Fisher's Protected Least Significant Difference ($P = 0.05$).

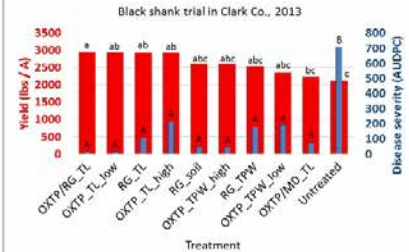


Fig. 2. Effect of Oxathiapiprolin applied at different rates on burley yield and the severity of black shank, Clark County, KY, 2013. Means with the same letter are not significantly different according to Fisher's Protected LSD ($P = 0.05$).

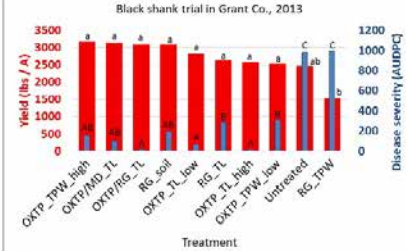


Fig. 3. Effect of Oxathiapiprolin applied at different rates on burley yield and the severity of black shank, Grant County, KY, 2013. Means with the same letter are not significantly different according to Fisher's Protected LSD ($P = 0.05$).

CONCLUSIONS

OXT demonstrated a level of suppression similar to RG (TPW or soil directed at transplanting, 1st cultivation, layby) when applied at 19.2 oz/A in TPW only or at 19.2 oz/A in TPW treatment followed by applications of 9.6 oz/A and 3.8 oz/A at 1st cultivation and layby. Combinations of OXT at 3.8 oz/A and RG at 8 oz/A in TPW and the same rates at layby were also effective and equivalent to RG. RG was effective as a single treatment in TPW in the Clark County study but not in Grant County due to a higher disease pressure and more applications for suppression would be necessary.

In conclusion, OXT appears to function as an alternative to RG and may be useful in a pest management program focused on alternating chemistries.

ACKNOWLEDGMENTS AND FUNDING SOURCE

The authors would like to acknowledge cooperators Kenneth Anderson (Clark County) and Howard Brewer (Grant County) and Extension Intern John Wall. Special recognition to DuPont for funding the study.

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Adding tables

Tables can be generated in PowerPoint, but they are often easier to create in Excel and copied into PowerPoint. Tables can also be created in Word, but Excel is really the best way to go.

Table 1. Possible sources for overwintering inoculum. No *Colletotrichum* was recovered.

Sample type, variety, sample number	Number of <i>Colletotrichum</i> isolates recovered		
Fallen fruit, Honeycrisp, n=30	0		
Fallen fruit, Red Stayman, n=30	0		
Fire blight cankers, Honeycrisp, n=20	0		
Fire blight cankers, Red Stayman, n=20	0		
Fire blight cankers, Golden Delicious, n=20	0		
Bud scales, Honeycrisp, dormant, green tip, pink n=10	0	0	0
Bud scales, Red Stayman dormant, green tip, pink n=10	0	0	0
Bud scales, Golden Delicious, dormant, green tip, pink n=10	0	0	0

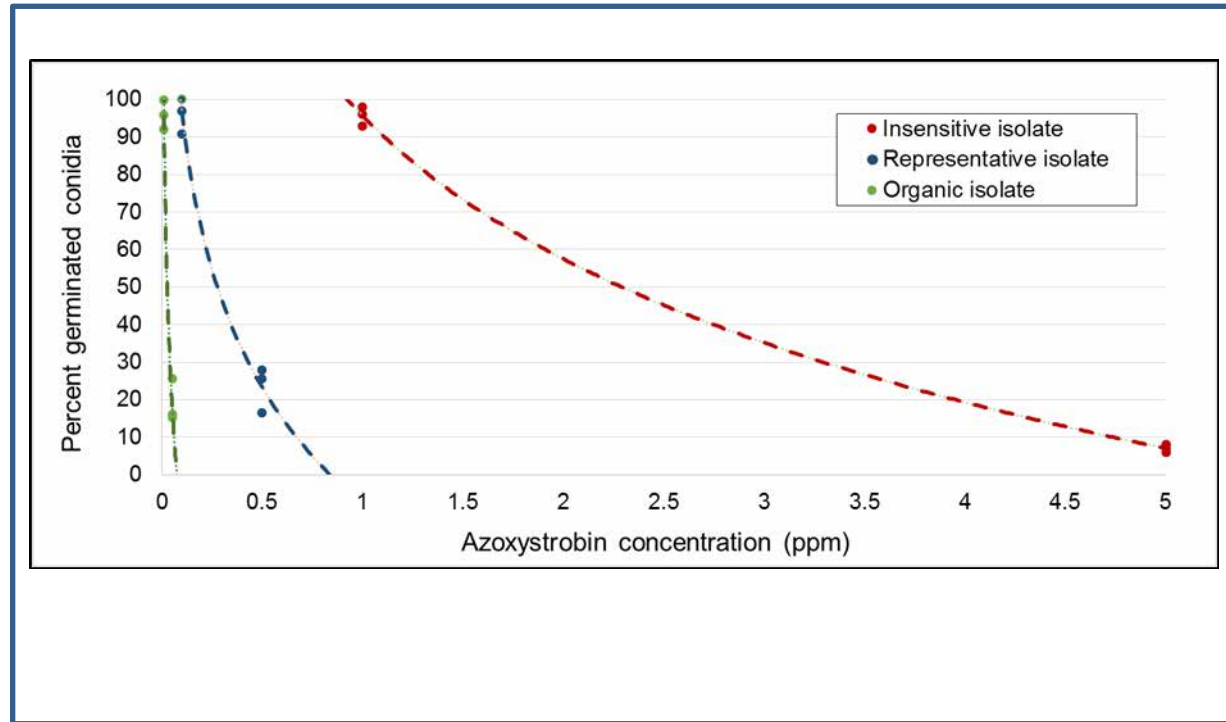


Poster Presentations

Preparing figures

Figures can be generated in PowerPoint, but they are usually easier to create in Excel or some other program designed for this purpose.

Figures can be imported into Power Point using the copy and paste function, or you can save figures as JPEG (JPG) image files and insert them.



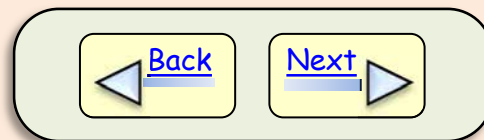
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Image size & quality

Since posters require large pictures, it is important to have sharply focused, high-resolution images that can be enlarged to the desired size.

Take pictures with a good camera to ensure a high resolution. A plain, contrasting background will help images stand out. Avoid shadows by using uniform lighting.

Label the objects in your picture to provide more interest and enhance comprehension.

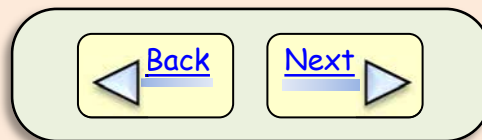
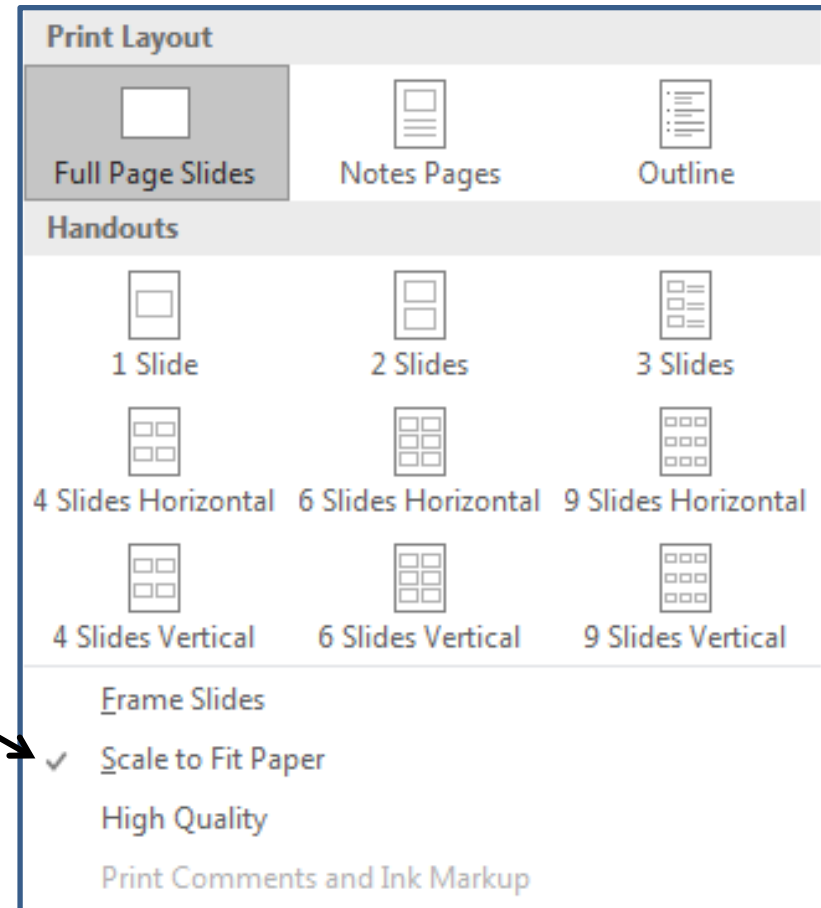


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Preview the poster before final printing

Prior to printing, you and at least one other person should carefully proofread the finished poster.

You can print a smaller version on 8.5 by 11 inch paper by selecting the "Scale to Fit Paper" option.



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Printing the final poster (in-house)

Posters can be printed in-house on the department poster printer in room 216.

Please let office staff know at least 2 weeks in advance of printing so they can check supply levels and order any that are needed.

If you will need assistance with printing the poster, please schedule time with an office staff member a minimum of 48 hours in advance of the time you will need the poster completed.

UK **Adventitious Root Formation in Tomato Mutants**
Katie Kittrel, Sharon Kester, and Robert Geneve
Department of Horticulture, University of Kentucky, Lexington, KY 40546

Introduction

The role of plant hormones during adventitious rooting has been studied for many years, yet their specific interaction(s) during rooting is still difficult to determine. It is accepted that auxin is the key hormone responsible for initiating adventitious roots. The other major hormones – gibberellin (GA), abscisic acid (ABA), and ethylene - have been shown to promote, have no effect or inhibit rooting depending on the species or rooting environment.

The objective of this research was to study hormone interactions during adventitious rooting in tomato leaf discs taken from stock plants with mutations for hormone synthesis or perception. Leaf discs were chosen because they fail to root without exogenous auxin application and exogenous hormones were easily applied in the *in vitro* rooting medium.

Materials and Methods

Tomato mutants deficient in gibberellin (*gib-1*) and abscisic acid (*not*) production or ethylene perception (*Nr*) were grown under greenhouse conditions with a day/night temperature of 24/20°C.

To approximate normal phenotypes in *gib-1* and *not*, stock plants were sprayed with 10 µM GA₃ once per week or 50 µM ABA every three days, respectively. A gibberellin deficient phenotype was attained by germinating seeds in Petri dishes with 34 µM paclobutrazol (gibberellin biosynthesis inhibitor) prior to moving seedlings to pots in the greenhouse.

The third leaf was harvested from stock plants at the seven-leaf stage. Six-mm diameter leaf discs were cut over a mid-vein and surface sterilized. Five leaf discs were placed on MS media treated with 25 µM IBA alone or in combination with 50 µM GA₃, ABA, or ACC. There were four dishes per treatment and roots were counted after 14 days.

Results and Discussion

Gibberellin is generally thought to be inhibitory to rooting. For tomato leaf discs, exogenous GA₃ inhibited auxin-induced rooting. However, since there were no effects on rooting in the gibberellin biosynthesis mutant (*gib-1*) or wild type stock plants dwarfed by reducing gibberellin biosynthesis with paclobutrazol, it does not appear that endogenous gibberellin plays a significant role in mediating auxin-induced rooting in tomato.

ABA inhibited rooting in leaf discs in wild type as well as all the mutant backgrounds.

However, in the ABA deficient *not* mutant, auxin-induced rooting was reduced and this reduction could be complemented with exogenous application of ABA to *not* stock plants. The mutant data suggests that ABA could have a direct physiological role in rooting, but the impact of stock plant water stress in the ABA mutant could also account for the observed differences in rooting.

Ethylene inhibited rooting. However, its endogenous role as a rooting inhibitor is doubtful given the reduced rooting in the ethylene perception *Nr* mutant.


Table 1. Rooting in tomato leaf discs in mutants for gibberellin (*gib-1*), abscisic acid (*not*) and ethylene (*Nr*) treated with a combination of indolebutyric acid (IBA) and various growth regulators.

Growth regulator	Genotype							
	Wild type		<i>gib-1</i>		<i>Not</i>		<i>Nr</i>	
	%	Number	%	Number	%	Number	%	Number
IBA (25 µM) alone	95a ^a	14.8a	95a	15.8a	70b	9.7c	85b	6.0d
IBA (25 µM) plus								
GA ₃ (50 µM)	65c	1.7e	100a	3.9d				
GA ₃ stock plant			100a	12.5b				
Paclobutrazol	90a	15.3a						
ABA (50 µM)	60c	4.1d	35d	2.2e	40d	1.6e	30d	0.6e
ABA stock plant	95a	16.6a			90a	13.4b		
ACC (50 µM)	70b	10.5b			80b	6.1d		

^a means followed by the same letter were not significantly different at the 5% level by Tukey's HSD test.

Conclusion

The results with the hormone mutants often contradicted conclusions drawn by exogenous application of hormones alone. The combination of a genetic approach complimented with exogenous application of hormones to stock plants and rooting media provided a more powerful tool for interpreting the endogenous physiological roles for these hormones in rooting.



Tomato stock plants

Wild type, gib-1, not, Nr



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Printing posters (UK-approved vendors)

You can also have your poster printed at an outside vendor. If the cost will be paid with UK funds, a UK-approved vendor must be used. Be sure to check for an updated list of approved vendors on UK's website.

Generally a PDF is preferred by local printing vendors, so save your PowerPoint as a PDF file before submitting.

Companies under UK contract that will print posters

Company Name & Website	Hours of Operation	Cost*	Notes
Advertiser Printers, Inc (API) http://www.apiprint.com 1890 Shooting Parkway, Suite 170 859-260-8649	Mon-Fri 8 AM to 5 PM available as needed for rush jobs	\$75 for 36 X 42 inch poster	High resolution PDF preferred; other formats ok e-mail to jbarton@apiprint.com or use FTP, DropBox, WeTransfer, etc. 2 to 3 day turnaround time; delivers finished product
Copy Express http://copyexpresslex.com 1255 Eastland Drive 859-255-2679	Mon-Fri 8 AM to 5 PM	depends on size	Needs PDF Files can be sent via their FTP site, Dropbox, or e-mail Will deliver finished product
Ricoh Document Service Center http://www.uky.edu/dsc/ UK locations in: White Hall Classroom (257-1813) Medical Center (257-3392) WT Young Library (257-9376)	Mon-Fri 8 AM to 5 PM; WT Young office closed from 1 PM to 2 PM	\$5 per square foot	Needs PDF already sized Will deliver finished product Requests 24 hours notice
Southland Printing http://www.southlandprint.com 1079 Majuan Rd, Lexington 859-276-1965	Mon-Fri 8 AM to 5 PM; Wade is in office by 6 AM	\$4.50 per square foot; \$5 for shipping tube	Needs high resolution PDF; will deliver finished product Send to john@southlandprint.com AND graphics@southlandprint.com; John writes up the order while graphics processes the order; Requests 2 to 3 days notice, but can do next day
Thoroughbred Printing http://www.thoroughbredprinting.com 904 North Broadway, Suite 100 859-226-4510	not listed on Web site		Needs high resolution PDF; e-mail if under 14MB, or larger files can be uploaded to FTP or Dropbox 1 to 3 day turnaround time Will deliver finished product

*Oct 2017

