1. **Notification Requirements and Sign Specifications for Commercial and Public Applicators in Iowa.** Jeni Lara (Jenifer.Lara@Iowaagriculture.gov, 515-281-8506) – Iowa Department of Agriculture and Land Stewardship, Pesticide Bureau
   a. Urban Pesticide Application – Notification Requirements and Sign Specification for Commercial and Public Applicators in Iowa - [https://store.extension.iastate.edu/Product/3604](https://store.extension.iastate.edu/Product/3604)

2. **Rotary Fertilizer Calibration Basics.** Nick Christians (nchris@iastate.edu, 515-294-0036) and Adam Thoms (athoms@iastate.edu, 515-294-1957) – Iowa State University Department of Horticulture
   b. Learn the basics or spreader calibration - [https://www.gcsaa.tv/video/learn-basics-spreader-calibration-excerpt-svw](https://www.gcsaa.tv/video/learn-basics-spreader-calibration-excerpt-svw)
   c. Calibration Example Math

   28-0-3 Fertilizer – 28% Nitrogen by Weight

   The intended application rate is 1 lb N/1,000 ft²

   \[ x(0.28) = \text{1 lb N} \]

   \[ x = \frac{1}{0.28} \]

   \[ X = 3.57 \text{ lb of fertilizer needed per 1,000 ft² to apply 1 lb N/1,000 ft²} \]

   \[ \frac{3.57 \text{ lb fertilizer}}{1000 \text{ ft}^2} = \frac{x}{325 \text{ ft}^2 \text{ test strip area}} \]

   \[ 1000x = 3.57 \times 325 \]

   \[ 1000x = 1160.25 \]

   \[ x = \frac{1160.25}{1000} \]

   \[ X = 1.16 \text{ lb of fertilizer needs to be applied to the test strip area to achieve a rate of 1 lb N/1,000 ft²} \]

   d. Economic Fertilizer Calibration Scenario – Fertilizer Cost $41.69/50 lb bag
a. **Normal Walking Speed**
   i. Applied 1.16 lb of fertilizer to the test strip
   ii. Applied 356.9 lb of fertilizer to 10 yards (100,000 ft²)
   iii. Applicator needed 7.13 bags to complete the applications
   iv. Total Application Cost = $296.60

b. **Slow Walking Speed**
   i. Applied 2.27 lb of fertilizer to the test strip
   ii. Applied 698.4 lb of fertilizer to 10 yards (100,000 ft²)
   iii. Applicator needed 13.96 bags to complete the applications
   iv. Total Application Cost = $580.73
   v. *This applicator applied the product over the intended rate resulting in more product needed and a higher cost of application. If this applicator was applying a pesticide product, it is likely they were applying above the labeled rate, which is against the law.*

c. **Fast Walking Speed**
   i. Applied 0.70 lb of fertilizer to the test strip
   ii. Applied 215.4 lb of fertilizer to 10 yards (100,000 ft²)
   iii. Applicator needed 4.3 bags to complete the applications
   iv. Total Application Cost = $178.88
   v. *This applicator did not apply enough product to achieve the intended rate of application. If this applicator were applying a pesticide product, the application may not have been at a sufficient rate to effectively managed the pest issue.*

3. **Preventing Ornamental Damage from Lawn Pesticide Applications.** Matt Kruse (mkruse@ultralawn.com, 319-378-0386) - UltraLawn
   c. Types of Drift
      a. Particle Drift
         i. Liquid or dust physically moves off target and can be seen
         ii. Usually occurs during or shortly following application
      b. Vapor Drift or Volatilization
i. Evaporates or turns into vapor and moves while it’s invisible
ii. Can occur or continue to occur a day or 2 after application
d. How can you reduce instances of drift:
   a. Read and follow all label directions – many pesticide labels will information on when to apply to avoid drift.
   b. Keep the boom height low.
   c. Avoid spraying during low humidity/high temperature periods which cause evaporation.
   d. Improve droplet size by: using more carrier (water) per acre, reduce spray pressure, increase spray droplet size, check into improved spray nozzles.

4. Pruning for Tree Health and Pest Prevention. Jeff Iles (iles@iastate.edu, 515-294-3718) – Iowa State University Department of Horticulture
   a. Pruning Trees: Shade, Flowering, and Conifer – Sustainable Urban Landscapes - https://store.extension.iastate.edu/Product/6191
   d. Principles of Pruning: Included Bark - https://hortnews.extension.iastate.edu/2020/01/principles-pruning-part-3-included-bark
   e. Overview of Oak Wilt - https://hortnews.extension.iastate.edu/oak-wilt

5. Rose Management for Pest Prevention. Cindy Haynes (chaynes@iastate.edu, 515-294-4006) – Iowa State University Department of Horticulture and Sarah Rummery (srummery@iastate.edu, 515-294-0305) – Remain Gardens at Iowa State University
   a. Cultural Practices to Prevent Pest Issues in Roses
      a. Selection of disease resistance cultivars at planting.
      b. Cover roses if needed during the winter time, keeping in mind cover too early can result in increased disease pressures.
      c. Properly cutting back the roses.
      d. Ensure proper fertilization during the spring to increase overall plant vigor.
      e. Proper dead heading.
      f. Regular spray maintenance for insects and diseases.
      g. Mulching to reduce splash back on the roses as well as reduce weed pressures.
   b. Diseases Discussed in Today’s Program
   c. Insect Problems Discussed in Today’s Program
b. Thrips - [https://entomology.ces.ncsu.edu/thrips-2/](https://entomology.ces.ncsu.edu/thrips-2/)

d. Avoid pesticide applications to roses during heavy pollination periods to protect bees and pollinators

e. Keys to Rose Management
   a. Select the right rose
   b. Maintain proper cultural practices
   c. Manage insects and diseases through timely pesticide applications

6. **Commercial Pesticide Applicator Insect Update.** Donald Lewis (drlewis@iastate.edu, 515-294-1101) – Iowa State University Department of Entomology
   b. Asian Longhorned Beetle
      i. What and Where is the Asian Longhorned Beetle - [http://iowatreepests.com/alb_home.html](http://iowatreepests.com/alb_home.html)
      ii. How to Identify the Asian Longhorned Beetle - [http://iowatreepests.com/alb_identify.html](http://iowatreepests.com/alb_identify.html)
   c. Brown Marmorated Stink Bug - [https://hortnews.extension.iastate.edu/brown-marmorated-stink-bug](https://hortnews.extension.iastate.edu/brown-marmorated-stink-bug)
   d. Japanese Beetle - [https://hortnews.extension.iastate.edu/japanese-beetle](https://hortnews.extension.iastate.edu/japanese-beetle)
      i. Japanese Adult Beetle Controls
         1. Tolerate the damage
         2. Screening and Handpicking
         3. Spray early and often (nothing will work in a single application for adult Japanese Beetles)
            a. Pyrethroids
               i. Deltamethrin, cyfluthrin, bifenthrin
               ii. Knockdown and residual activity even without full coverage
            b. Carbaryl
               i. Good knockdown and residual activity
            c. Antifeedants
               i. Azadirachtin
               ii. Kaolin clay (Surround)
            d. Bioinsecticides
               i. Pyola – short term protection
               ii. beetkeGone Bt-g
      ii. Annual White Grub Insecticide Treatment
1. Preventative Applications Mid-May through Early-August
   a. Chlorantraniliprole: Acelepryn & Scott’s Grub-X
   b. Clothianidin: Arena
   c. Cyantraniliprole: Ference, Mainspring GNL
   d. Dinotefuran: Zylam
   e. Imidacloprid: Merit, Zenith, etc.
   f. Thiamethoxam: Meridian
   g. *Bacillus thuringiensis galleriae*: GrubGONE G

2. Curative Controls Early August through September
   a. Trichlorfon – Dylox
   b. Carbaryl – Sevin
   c. Clothianidin – Arena
   d. Thiamethoxam – Meridian, etc.
   e. Chlorantraniliprole – Acelepryn
   f. Cyantraniliprole – Ference, Mainspring
   f. Minute Pirate Bugs - https://hortnews.extension.iastate.edu/2017/10/minute-pirate-bugs-are-biting-argh

7. **Turfgrass Herbicide Update.** Adam Thoms (athoms@iastate.edu, 515-294-1957) – Iowa State University Department of Horticulture
   c. Drive XLR8 (Quinclorac) - https://betterturf.bASF.us/products/drive--xlr8-herbicide.html
   d. Identifying Crabgrass vs. Goosgrass - https://njaes.rutgers.edu/fs1309/
   e. Pylex (Topramezone) - https://betterturf.bASF.us/products/pylex--herbicide.html
   g. Tenacity (Mesotrione) - https://www.greencastonline.com/labels/tenacity