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this issue

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Changing of the Guard

The prospect of a new growing season brings several changes to the Peanut Research Team. As many of you know Todd Baughman has left the Texas AgriLife Extension Service accepting a position with Oklahoma State University in Ardmore. In addition to Dr. Baughman's departure, 2012 marks the retirement of Senior Research Scientist James Grichar and Research Associate A.J. Jaks.

Todd Baughman, a native of southwest Oklahoma received M.S. and Ph.D. degrees from Oklahoma State University and Mississippi State University, respectively. After a short stint as a product development representative in industry, he was hired as an Assistant Professor and Extension Agronomist at the Texas AgriLife Research and Extension Center in Vernon in 1996. Todd was named the State Peanut Specialist in 2002, a title he held until accepting a Program Leader position with Oklahoma State in October of 2011. Baughman's efforts in the role of State Specialist included conducting research, educational programs and trainings related to all aspects of peanut production. Todd was the face of Texas peanut production representing growers at the state and national level. Todd is currently the past-president for the American Peanut Research and Education Society (APRES).

James Grichar, aka Mr. Peanut, or the Godfather has made significant contributions to Texas peanut producers for more than 30 years. Grichar is highly regarded for his expertise in weed control, as well as activities in agronomy and plant pathology. Through his research he has conducted numerous field studies targeted at improving weed or disease control, increasing yield and profitability. He is routinely called to share research results and ideas at approximately 20 meetings per year. James has over 130 referred publications, 4 book chapters, 54 Texas AgriLife Research publications, 48 popular articles, 242 proceedings, and over 270 other publications. Mr. Grichar has received numerous awards and honors during his career and has represented Texas peanut production in several facets most recently being named Fellow of APRES. James will remain active in peanut research and continue to contribute to Peanut Progress in his retirement.

A.J. Jaks was born and raised in Shiner Texas. After receiving B.S. and M.S. degrees from Texas State, he went to work for the Texas AgriLife Research Beeville/Yoakum Center. Working with plant pathologist Don Smith, Jaks was responsible for evaluating the efficacy of new fungicides for control of foliar and soilborne diseases.

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Todd Baughman

Symptoms of salt injury

Variety performance- Variety selection is one of the most economically important decisions peanut producers make.

James Grichar

A.J. Jaks

Peanut Production Update (Jason Woodward)

Changing of the Guard (Cont…)

A.J. also conducted studies evaluating the response of varieties to peanut leaf spot. Most recently he was involved in using fungicides in conjunction with spray advisories in attempts to improve on the initial fungicide application timing, maximize disease control and increase profitability. A.J. was involved in peanut research for approximately 35 years and remained active at the state and national level.

The Peanut Research Team would like to thank A.J., James and Todd for their commitment and contributions to the peanut growers of Texas. We wish them the best of luck in their new endeavours.

Another peanut season is upon us. As planting time approaches, it is time to make sure all planting equipment is calibrated and in proper running order. Decisions based on field selection, variety, irrigation, fertility and weed and disease control are critical in maximizing yield potential. This addition of Peanut Progress includes information on various topics including variety performance, irrigation and salinity issues, using inoculants, disease management, an update on the Texas AgriLife Breeding Program and earl season weed management.

Variety performance- Variety selection is one of the most economically important decisions peanut producers make. The development of varieties capable of maintaining yield and grade under a wide range of conditions is important so that profitability can be maximized. Drought conditions experienced throughout the state last year greatly impacted yields. Several trials were lost as peanuts were bailed for hay. However, yields were collected from a total of 11 trials (8 runner and 3 Virginia) conducted throughout the High Plains, Rolling Plains, Central and South Texas. From a runner standpoint, the varieties Red River Runner and Tamrun OL11 performed well across much of the state. Although in fewer trials, the varieties ACI-149, FloRun 107 and McCloud were above the test average in most cases. The performance of Flavor Runner 458, Georgia-09B and Tamrun OL07 was intermediate.

Red River Runner is a new release from Oklahoma State that has a pedigree similar to that of Tamrun OL07. This variety has the high oleic trait and improved tolerance to tomato spotted wilt and Sclerotinia blight when compared to Flavor Runner 458. Tamrun OL11, previously tested as TX-55308 exhibits a very high level of resistance to Sclerotinia blight and

Symptoms of salt injury

grades better than Tamrun OL07 (similar to Flavor Runner 458). FloRun 107 is a high oleic variety developed out of the University of Florida breeding program that performed in the top tier in 2 of the 3 trials in which it was evaluated. Georgia-09B is a high oleic variety released from Bill Branch at the University of Georgia. This variety has shown to have improved resistance to tomato spotted wilt and southern stem rot. The breeding line TX-1304 yielded well in trials conducted on the High Plains, out yielding other varieties by as much as 300 pounds per acre under low to moderate irrigation.

A total of 7 Virginia entries were evaluated in 2011. Few differences in yield were observed among the entries; however, the breeding lines NC-8085 (from North Carolina State) and AU-1101 (from Auburn) were atop all three trials. The varieties Georgia-08V and Florida Fancy performed equal to or better than Gregory and AT07-V at all locations. Yields for Florida Fancy were slightly reduced when evaluated in a field with a history of severe Verticillium wilt. Overall, grades for runners and Virginia's were low as a result of the extreme temperatures experienced that lead to a delay in pegging. A complete report of 2011 peanut production and disease management trials can be found at: http://peanut.tamu.edu/library/pdf/2011NPBTPPB_FINALREPORT.pdf

Irrigation and salinity issues- One thing that 2011 reminded us of is the importance of irrigation at bloom. More frequently timed irrigation during this stage seemed to help maintain humidity within the canopy, cool the soil and improve pegging. Barring any irrigation issues afterwards improvements in yield were achieved. Likewise, salinity issues negatively affected yield under the conditions experienced last season. This resulted from a lack of supplemental rainfall, which is needed to leach salts out of the root zone. While some precipitation was received across much of the state producers should be mindful of soil conditions prior to planting.

Using inoculants- A balanced fertility program is key to maximizing peanut yields. In general, peanuts respond well to residual soil fertility associated with rotational crops, such as cotton. Being a legume, peanut requires little nitrogen fertilizer and can obtain most of its N needs from nitrogen-fixing bacteria, which colonize the roots. Several formulations of these bacterial inoculants (also known as Bradyrhizobium) are commercially available. Bradyrhizobium can survive in the soil as either native populations or a result of prior applications of an inoculant; however, in west Texas it is recommended that applications of fresh inoculant be made when planting. Inoculants are comprised of living bacteria and should

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Peanut Disease Outlook (Jason Woodward)

Peanut plants are capable of compensating for low plant densities; however, it is important to acquire an adequate stand. Several factors contribute to stand establishment such as seeding rate, seed quality, planting depth, soil temperature as well as seedling disease. Preliminary results from trials conducted on the High Plains have shown that seeding rates of three to four seed per foot provided yields similar to the maximum six seed per foot. While these results suggest that reductions in seeding rates can be made, additional testing is required before drastic changes are made.

Several things must be taken into consideration when reducing seeding rates. For example, higher seeding rates should be utilized for seed lots or varieties with low germination. Furthermore, these lots should be planted under optimum conditions. Seed should be planted into a firm moist seed bed with temperatures above 65 °F and a favorable 5 day forecast. Peanut seed can germinate relatively deep in the soil; however, prolonged time to emergence may lead to sporadic stands. If dry conditions are experienced at planting and supplemental irrigation is required for establishment, the addition of cool irrigation water may delay emergence and exacerbate seedling disease.

Weed Management (James Grichar & Peter Dotray)

For successful season-long weed management in peanut, several important points need to be considered before planting and during the growing season to anticipate and stay ahead of weed problems. These strategies include:

1. Know the weeds in your fields. Successful weed management starts with knowing the types and kind of weeds in each of your fields. Do not assume that the same weeds are present in each of your fields especially if fields are located across a large area.

2. Be aware of all weed control options that are available. We generally think of herbicides as the only option for weed control. However, other options include physical (hoeing, hand pulling), mechanical (cultivation), cultural (row spacing, crop rotation, variety selection, time of planting, planting density), biological (use of insects, etc), and preventive (prevent weed seed dissemination with equipment). Herbicides in conjunction with other methods are sometimes the only option to remove problem weeds from a field.

3. Know what your herbicides can and cannot do! Many growers often fall into the trap that all herbicides are alike; however, they can be very different especially with respect to spectrum of weed activity, water solubility (movement in the soil), amount and length of soil activity, movement in the plant, volatility, crop tol-

Symptoms of Pythium seedling disease

erance, and off-target movement potential. Always read and follow label instructions and pay close attention to rotational crop restrictions, weed size, and the addition of spray adjuvants (crop oil concentrate, fertilizers, non-ionic surfactant, etc.).

4. Start with a clean seedbed. Winter weeds and early-emerging summer weeds should not be present at the time peanuts are emerging. Early-season weed competition (4 to 6 weeks after planting) is most critical and have the greatest impact on peanut yield. Weed competition can slow peanut growth and compete with the crop for water and nutrient.

5. Dinitroaniline herbicides are a good foundation for effective weed control. The 'yellow' herbicides (Prowl H2O, Sonalan, and Treflan) are very effective on annual grasses and small-seeded broadleaf weeds when applied at the proper rates and are properly incorporated. Remember these herbicides need to be properly incorporated (mechanical or water) to work properly. Uniform incorporation of these herbicides is critical to ensure germinating weeds come in contact with the herbicide prior to emergence. With the exception of Prowl H2O, both Treflan and Sonalan need to be incorporated with 24 hours of application to the soil surface to work properly. Prowl H2O is better at withstanding harsh conditions after application without product loss due to volatilization, etc.; however, under the hot, dry, and windy conditions that may be found in south Texas during planting do not expect Prowl H2O to remain on the surface for a long period of time. The sooner Prowl H2O is incorporated (mechanically or with irrigation) the better. With overhead irrigation, it is necessary to apply from 0.75 to 1.0 inch of water for proper incorporation of the yellow herbicides.

6. Are additional soil-applied herbicides needed? The 'yellow' herbicides are effective against many annual grasses and small-seeded broadleaf weeds; however, these herbicides are relatively ineffective against annual broadleaf weeds such as morningglory, sunflower, and cocklebur species. Valor and Dual Magnum are effective herbicides used preemergence in peanut.

7. Properly timed postemergence herbicides can be very effective. The success of postemergence herbicides is largely dependent on weed size and coverage, which often go hand in hand. Postemergence herbicides are not effective when applied to weeds larger than stated on the label. Use appropriate carrier volume to ensure complete coverage of the weed and use a crop oil concentrate or other adjuvant to reduce surface tension and provide better translocation of the herbicide into the plant. Also, weeds that do not

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Weed Management (cont…)

Peter Dotray
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come in contact with the herbicide will not be controlled. Not all postemergence herbicides have broad spectrum weed control; therefore, match the herbicide with the weed(s) that you are trying to control. Postemergence herbicides are more effective when applied to non-stressed weeds. Remember, controlling weeds early is when you can achieve your biggest bang for your buck, the time when weed competition is at its peak.

8. Crop injury from herbicide use. Some postemergence herbicides such as Cobra or Ultra Blazer will result in chlorosis and necrosis of peanut leaf tissue while herbicides such as Cadre or Pursuit may result in some leaf yellowing soon after application but will disappear within 10 to 14 days after application. This type of injury typically results in no effect on peanut yield. 2,4-DB (Butyric or Butoxone) plus crop oil will cause some foliar injury (leaf elongation, and plant epinasty), but has not been found to cause any yield loss. It is very important to understand the potential causes of herbicide injury. These causes of injury include improper sprayer calibration, improper incorporation, excessive herbicide rate for the soil type, failure to adhere to crop rotation restrictions, interaction with other pesticides or spray adjuvants, application to crops under stress, off-target drift of herbicides unto sensitive crops, and the improper cleaning out of spray equipment may all be factors in peanut injury and potential yield loss.

9. Scout fields in which weeds have not been killed with properly used herbicides. Although weed resistance has not become a major issue in peanut production, growers need to watch for weed control that decreases over time. A buildup of resistant weeds does not occur quickly so be watchful of poor control over time. Using only one type of herbicide chemistry in a field over time can increase the likelihood or resistance buildup. Also, using a certain type of herbicide may result in weed shifts. New, difficult-to-control weeds should be a top priority so small infestations do not become big problems.

10. Control of difficult-to-control weeds starts in the fall after peanut harvest. After peanut harvest is a good time to work on control of perennial weeds. Systemic herbicides such as Roundup, 2,4-D, and Clarity can be very effective because these herbicides are absorbed by leaves and can move below ground to disrupt storage tissue. This disruption should allow for fewer plants to emerge the following spring.

Texas AgriLife breeding program (Michael Baring)

The Texas AgriLife peanut breeding program, comprised of Michael Baring, Mark Burow and Charles Simpson, is preparing to release several breeding lines as new varieties or germplasm lines within the next year. The program released Tamrun OL11 in July of 2011. This variety is well suited for the West Texas growing region and has performed well under Sclerotinia blight conditions. Tamrun OL11 has resistance to Sclerotinia blight equal to that of Tamrun OL07 and it grades equal to or better than Flavor Runner 458 which is about two percentage points higher than Tamrun OL07 on average. Seed availability for 2012 will be limited to approximately 300 acres, but will be for seed increase only.

The peanut breeding program has also applied for release of three other breeding lines for 2012 as new varieties. The first is TxL061816, which we propose to be released as 'Tamrun OL12'. This breeding line is being released as an early maturing runner-type peanut, which matures approximately two weeks earlier than other commercial runner cultivars. The second is PR-2, which we propose to release as 'Webb'. If approved, this will be the first high oleic, root-knot nematode resistant variety released by our program. Webb also has moderate resistance to Sclerotinia blight. The third is breeding line TxL054520-34, which is a Spanish-type that yields on average 500 lbs/a better than OLin, grades two percentage points higher than OLin and matures approximately one week earlier. Small seed increases of each of these lines were planted in 2011, but we were barely able to recover the seed amounts that we planted due to the severe drought. Small seed increases of each of these three lines will be planted again in 2012.

The program has also developed several populations of high oleic, Virginia-type breeding lines and will probably select a candidate for release out of this group of materials within the next year. The next generation of releases will be focused on combining multiple disease resistances with early maturity as well as higher grades and yields in our runner-type breeding materials. Further down the line we are screening and crossing materials for drought and salt tolerance, but this will take time to develop a line with yield and grade characteristics suitable for release.

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This newsletter is for you the producers and other members of the peanut industry. If you have any questions, comments or suggestions the newsletter please contact Jason Woodward @ 806.632.0762 or jewoodward@ag.tamu.edu.

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http://peanut.tamu.edu

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