2004 Dry Beans and Peas

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For additional BEP information consult

http://lubbock.tamu.edu/programs/crops/other-field-crops/black-eyed-peas/

Focus

- Black-eyed peas
- Pinto beans
- Principles may be applicable to other pea & bean crops including cowpea family

Yield Potential

- Black-eyed peas
  - Irrigated 1,500-3,000 lbs / acre
  - Dryland 500-1,500 lbs / acre
- Pinto beans
  - Irrigated 1,500-3,000 lbs / acre

Labeled Pesticides

- Limited
- Crop listings on label
  - Specific crop
  - Dry beans
    - Dry shelled beans
    - Includes black-eyed peas
  - Southern peas or cowpeas
    - Black-eyed peas

Sources of Label Information

- For crops like peas & beans of lesser acreage you may not readily know what chemicals are labeled
- Labels for herbicides, insecticides, fungicides, seed treatments, growth regulators, etc.—access through http://www.cdms.net, click 'Services' then 'Labels' then enter Brand name
  - After 'Labels' you can also search by active ingredient (looking for a generic?) through "Other Search Options" but will need to register for a free password
  - For further details on how to use this valuable website search for "Ready On-line Access to Chemical Labels" at http://lubbock.tamu.edu/programs/disciplines/weeds/ (by Calvin Trostle)

Soil Considerations

- Soil type
  - pH > 8.0 questionable
  - pH 7.8 – 8.0 borderline
  - pH < 7.7 preferred
  - Pintos more sensitive

Row Considerations

- Row width
  - 15-40 inches
  - Preferred
    - 30 inch single row
    - 40 inch double row?

Most Important Pest? (Weeds!)

P Westra

Weed Management Considerations

- Cultivation
- Hand hoeing
- Herbicides
  - Pre-plant incorporated (PPI)
  - Pre-emerge
  - Post-emerge

Popular Herbicides (2004)

- PPI
  - Trifluralin, Treflan, Prowl
  - Pursuit
- Pre-emerge
  - Pursuit, Sandea
- Post-emerge
  - Pursuit, Basagran, Select
  - Sandea ???

Overview

- Pursuit
- Sandea
- Basagran

KSU

Pursuit

Herbicide

Pursuit Herbicide

Key Weeds

Morningglory	Pre supp/Post
Black nightshade	Pre/Post
Cocklebur	PPI supp/Post
Spurred anoda	Pre/Post
Pigweed	Pre/Post
Sunflower	PPI/Post

Refer to label for additional weeds controlled & specific weed control information.

Pursuit Herbicide

Rotational Restrictions

Alfalfa	4 months
Corn	8.5
Cotton	18
Sorghum	18
Peanuts	0
Sunflower	18
Wheat	4
Others	Refer to label

Noted in months

Refer to label for additional crop restrictions

Sandea

Herbicide

Sandea Herbicide

Key Weeds

Cocklebur	Pre/Post
Kochia	Pre/Post suppression
Nutsedge	Pre suppression/Post
Pigweed	Pre/Post
Ragweed	Pre/Post
Sunflower	Pre/Post
Velvetleaf	Pre/Post

Refer to label for additional weeds controlled & specific weed control information.

Sandea
Herbicide

Key Weeds Not Controlled

- Nightshade spp.
- Morningglory
- Grasses
- Need effective combination for broad spectrum control

Morningglory

Sandea
Herbicide

Dry Beans & Peas

Application Timing

- Post plant, pre-emergent
  - 0.50-0.67 oz/acre
  - Limit irrigation to 0.25-0.50 inch
- Post-emerge ???

Application rates, timing, & methods vary by region.
Refer to label for specific use directions & precautions.

Sandea
Herbicide

Effectiveness

Lubbock

- Palmer amaranth
  - > 90% pre-emerge
  - > 90% post-emerge
    - Weed size < 1 inch

Sandea Herbicide

Relative Effectiveness

Cocklebur	F-G
Lambsquarters	G
Pigweed	E
Velvetleaf	F-G
Morningglory	P-F
Black nightshade	N

Results provided by Center for Integrated Pest Management

Sandea
Herbicide

Where Does it Fit?

- Pigweed / Palmer ameranth
- Sunflower
- Nutsedge
- Cocklebur
- Crop rotations

UC Davis

Sandea
Herbicide

Crop Rotation

Alfalfa	9 months
Corn	1
Cotton	4
Sorghums	2
Peanuts	6
Sunflowers	18
Wheat	2
Others	Refer to label

Gowan recommends the following recropping intervals for crop safety. (Noted in terms of months.)

Basagran

Herbicide

Basagran
Herbicide

- Selective broadleaf herbicide
- Contact herbicide
  - Coverage critical
  - Weed size

Application rates, timing, & methods vary.
Refer to label for specific use directions & precautions.

Basagran
Herbicide

Key Weeds

- Spurred anoda
- Cocklebur
- Devilsclaw
- Morningglory
  - High rate 2 applications

Refer to label for specific use directions & precautions.

Post-emerge Herbicides

- Basagran, Pursuit, Sandea
  - Expect some crop stunting or discoloration
  - Dry beans and peas have shown to recover with little or no yield effect

Planting Recommendations

- Seed quality critical
  - Disease and weed free
- Soil temperature
  - Black-eyed peas > 65°
  - Pinto beans > 60°
- Planting depth
  - Black-eyed peas 1.5 inches
  - Pinto beans 2-2.5 inches

Planting Recommendations

- Seeding rate
  - Black-eyed peas (these seem higher than necessary—CT)
    - Irrigated 50-75 lbs / acre
    - Dryland 30-35 lbs / acres
  - Pinto beans
    - Irrigated 60-75 lbs/acre
    - Dryland not recommended

Soil Fertility

- Soil test
- General N requirements
  - Yield of 2,500 lbs./A: 150 lbs. N/A
  - Deduct available soil N (any nitrate in the top 24”)

Soil Fertility

- Phosphorous guidelines

Available P lbs / acre	Application Rate lbs / acre
0-10	40-60
10-30	20-40
>30	0-20

Inoculants for Legumes?

Crop-specific *Bradyrhizobium/Rhizobium*

- Seedbox powders are most common but limited testing in West Texas (Trostle) has found little to no improvement in nodulation let alone yield.
- ***Any inoculant labeled for “Cowpea” is the right strain for black-eyed peas, and this enables you to use superior granular and in-furrow liquid products, including those crop-specific for peanuts (of which there are many good products)
- Contact these manufacturers:
  - Novozymes (now a subsidiary of Monsanto)
  - INTX (now a subsidiary of Verdesian)
  - BASF (former Becker Underwood brand)

Bailey-Parmer Co. Nodulation Observations (Trostle), early 2000s

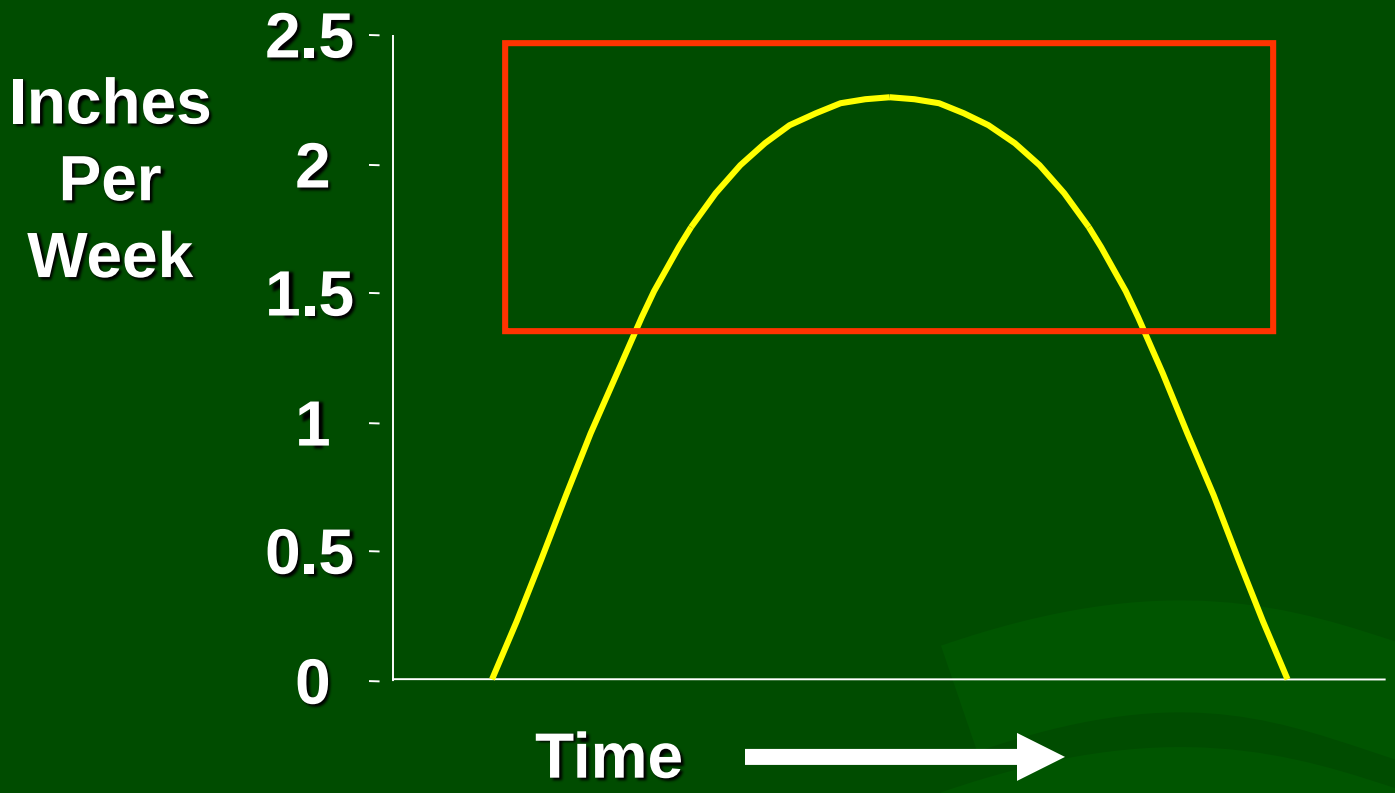
- During a late summer county crop tour we asked for locations of area black-eyed pea fields. None had received inoculant
  - Fields that were in BEP for the first time in recent memory: average 4 nodules per plant (this would be minimal)
  - Fields regularly in BEP at least every 4 years (and no knowledge of previous crop-specific inoculant application): 15 nodules per plant (considered moderate nodulation)
  - Bottom line: it would be potentially helpful to inoculate virgin ground (no BEP before)
  - Farmers in the Texas South Plains that report using in-furrow liquid on BEP have noticed greatly improved nodulation often like they have never had before (since 2009)

Irrigation

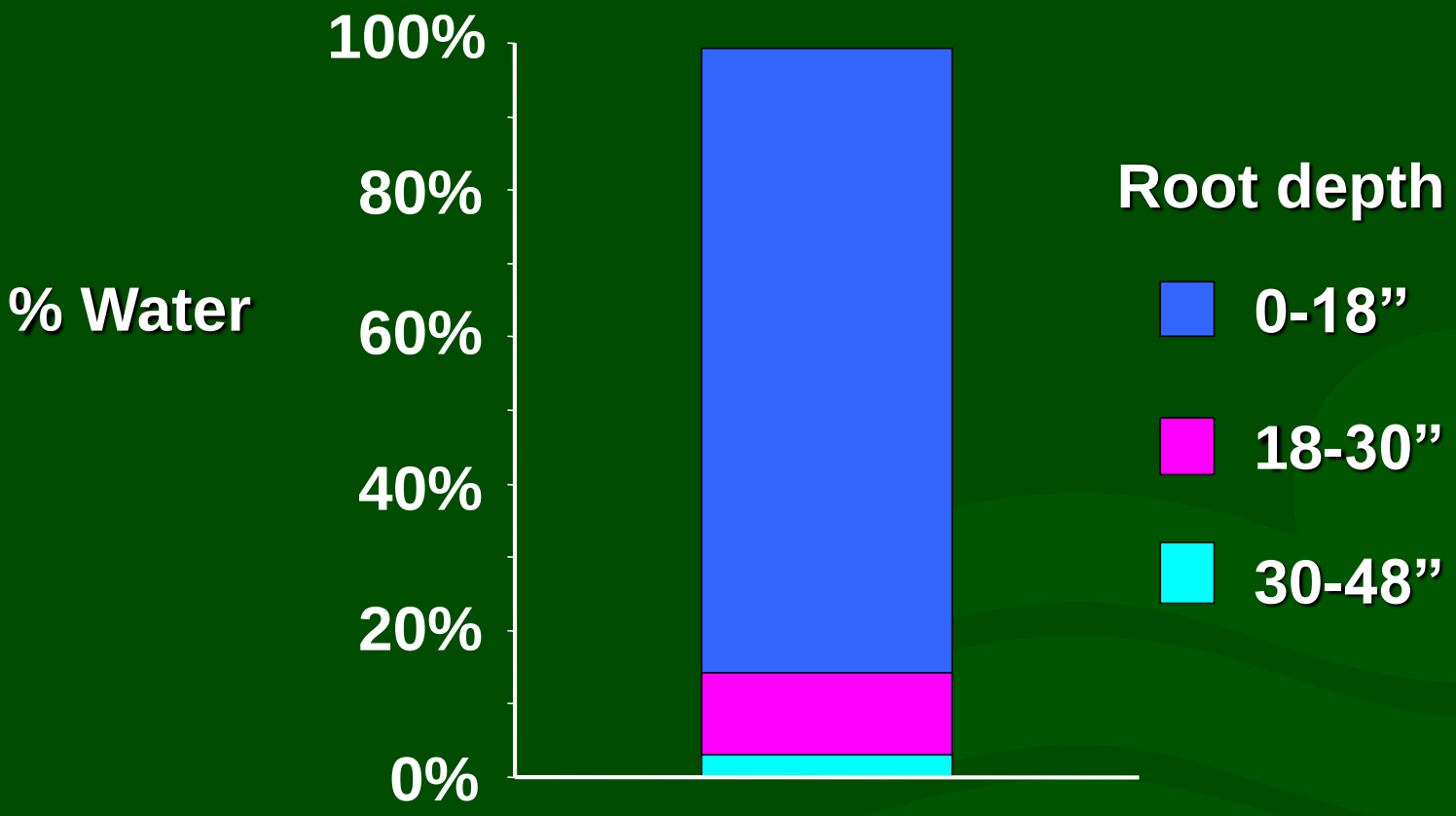
Irrigation Considerations

- Less overall water requirements
- High demand for short time
- Capacity
  - < 4 gpm/A limited
  - 5 or more gpm/A optimum

Water use



Moisture Source



Irrigation Management

- Start with a full profile
- Fine sandy loam = 1.8 inches / foot
  - Top 18 inches of soil = 2.7 inches
- Do not let moisture fall below 50%
- See tips for BEP irrigation "*Optimum Irrigation for Black-Eyed Pea in the Texas High Plains*," at http://lubbock.tamu.edu/programs/crops/other-field-crops/black-eyed-peas/

Harvest Options

- Direct harvest system
  - Apply harvest aid
  - Combine
- Windrow system
  - Swath
  - Combine

Harvest Concerns

- Harvest loss
- Quality loss
  - Cleanout
  - Splits
  - Slow cylinder / rotor speed
  - Spike tooth cylinder

Other Concerns

- Crop insurance
- Must be double-cropped to stay in compliance (USDA FSA)
  - Approved double-crop counties
  - Payment reduction if not
  - Un-allotted acres

TX High Plains Contractors

- For an annually updated list of contractors for BEP consult the annual hail out/re-plant/late plant guide “Alternative Crop Options after Failed Cotton…” (Trostle), http://lubbock.tamu.edu