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COOPERATIVE EXTENSION
University of California, Davis

# Extending Drought Limited Feed Resources

**P.H. Robinson**
***Dept. of Animal Science, UCCE***
***UC Davis, Davis, CA***

## Drought in CA Impacts CA – not the USA

- **Feed prices of CA grown feeds will rise, but not USA based feeds in general**
  - **expect very high alfalfa, wheat straw, corn stover, almond hulls and cottonseed prices due to in-state drought and competition**
  - **expect stable prices for grains, protein meals and distillers products due to their out-of-state origins**
- **Be open to new feeds, feeding practices and feeding strategies**
  - **overlooked local feeds may now make sense**
  - **feed conservation and efficiency become critical !**

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- **Be open to new feeds, feeding practices and feeding strategies**
  - overlooked local feeds may now make sense
  - feed conservation and efficiency become critical !
- **The California dairy challenge will always be a lack of feeds, not environmental regulations**

## Extending forages during Drought: The simple answers

- **Feed less forage**
  - but this implies feeding more of something else, what is that?
- **Buy more forage**
  - but this involves spending more money on feed, so what do you spend less on?
- **If not the simple answers, then what?**

# In General

**To extend forage supplies and prevent the need to purchase more:**

- **prevent losses of forage (and other feeds) you have purchased**
- **reduce forage feeding levels by:**
  - **finding new (overlooked), probably local, feeds**
  - **feeding more grain**
- **feed for maximum feed efficiency by the cows**

# Preventing Feed Losses

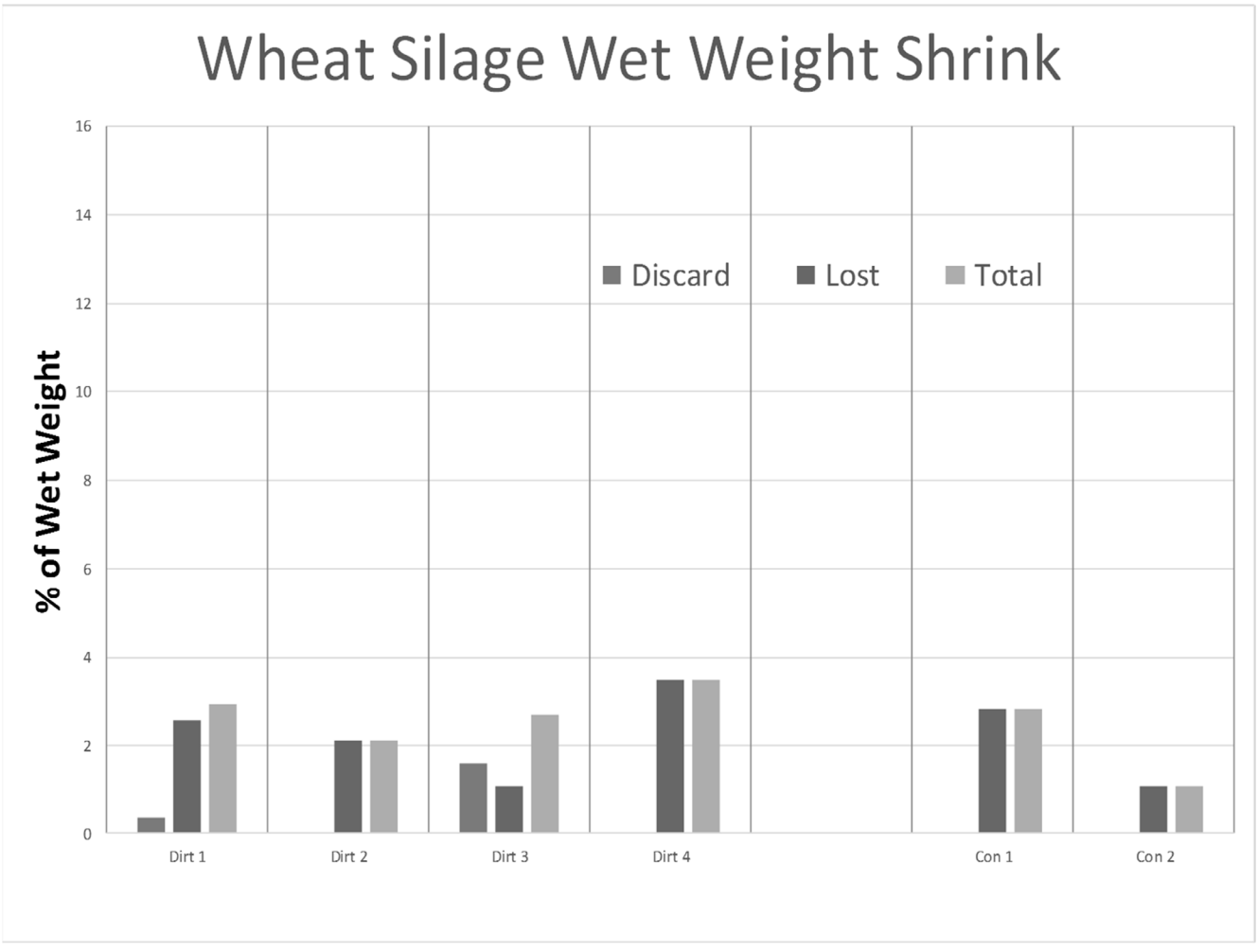
- **Go all out to reduce silage 'shrink' !**
  - **use lactic acid additives in cereal and alfalfa silage**
    - **but not in corn silage**
  - **double cover piles using inner thin plastic**
    - **reduces losses and spoilage**
  - **cover piles within 12 hours**
    - **cover as you go for large piles**
- **Reduce feed shrink *(feeds bought but not fed)***
  - **use covers and bays**
  - **only remove as much silage as needed**
  - **have the feeders clean up at the end of the day**

## What silage shrink should you be happy with?

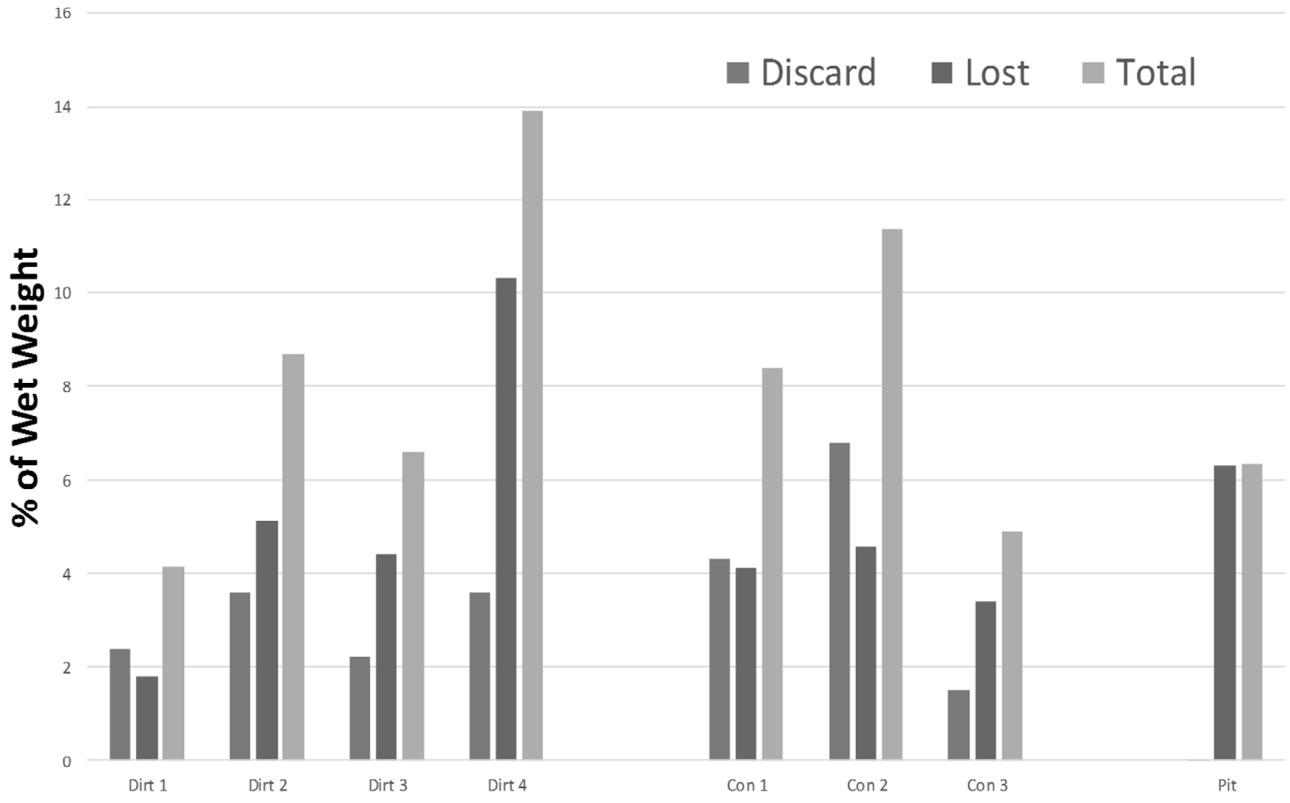
- **What numbers for shrink do you hear?**
  - **10 to 20% of wet weight?**
- **What numbers for shrink do you assume?**
  - **8 to 10% of wet weight?**
  - ***10% shrink on a 4,000 ton corn silage pile is ~ 130 tons of DM***
- **What shrink values are attainable?**
  - **our current study is measuring that in corn and wheat piles**

# What is wet weight shrink?

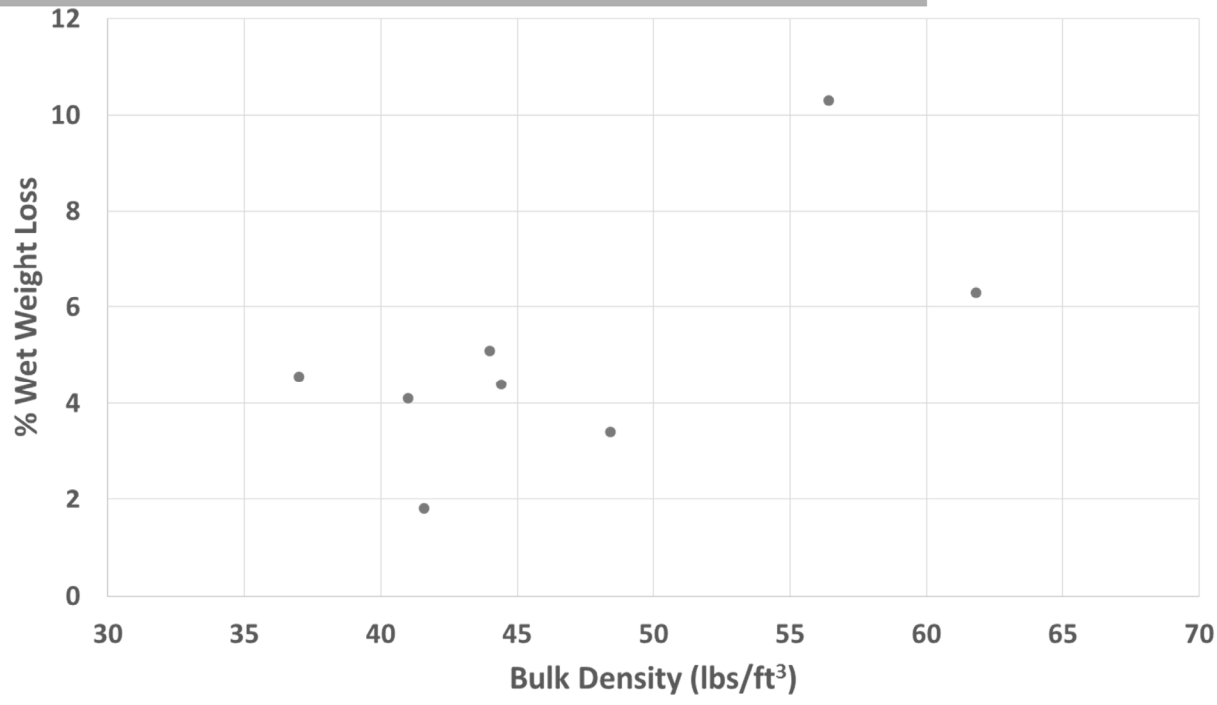
- **Forage ensiled which is not fed**
  - **total weight to the mixer divided by total weight ensiled**
- **Forage ensiled which is not fed or recovered as spoilage**
  - **total weight to the mixer + spoilage divided by total weight ensiled**



# Corn Silage Wet Weight Shrink




# Corn Silage:
# Wet Density vs. Wet Weight Loss



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# Find new (overlooked), probably local, feeds

- **Corn and wheat silages are not magic**
  - **you can reduce ingredient minimums in diet formulation**

- **Seasonal feeds such as vegetable and fruit wastes**
  - **carefully examine bulk buys in season**
  - **put the word out that you are interested in oddball stuff**
  - **ensile them with lower quality forages such as straws**
    - **can work well in sausage bags**

- **Consider rice straw**
  - **UCCE research has resulted in good success with double chop rice straw**

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## Double Chop Rice Straw in a Heifer TMR

## SUMMARY OF DAIRYMAN RESPONSES

| | Sickle Chop | Slicer Bailed |
|---|---|---|
| Particle length uniformity[a] | 4.8 | 6.6 |
| Color[a] | 7.8 | 8.0 |
| Texture[a] | 7.6 | 7.2 |
| Mixability[a] | 4.2 | 6.0 |
| Mixing time affected[a] | 6.0 | 6.[illegible] |
| Sorting (10=no sorting)[a] | 5.8 | 7.0 |
| Leftover RS eaten[a] | 6.4 | 8.4 |
| Overall experience[a] (Start) | 6.1 | 7.1 |
| Overall experience[a] (End) | 5.4 | 7.0 |
| How likely to use again[a] | 5.4 | 7.8 |

a = 0 to 10 (0=poor, 10=excellent)



## Feed More Grain – Is the Near Future the Past?

- Corn is ~$225/ton vs.
  - cottonseed is $545/ton
  - alfalfa hay is $350/ton
- Use more corn grain in diets
  - but be aware of impacts on cows of high starch consumption

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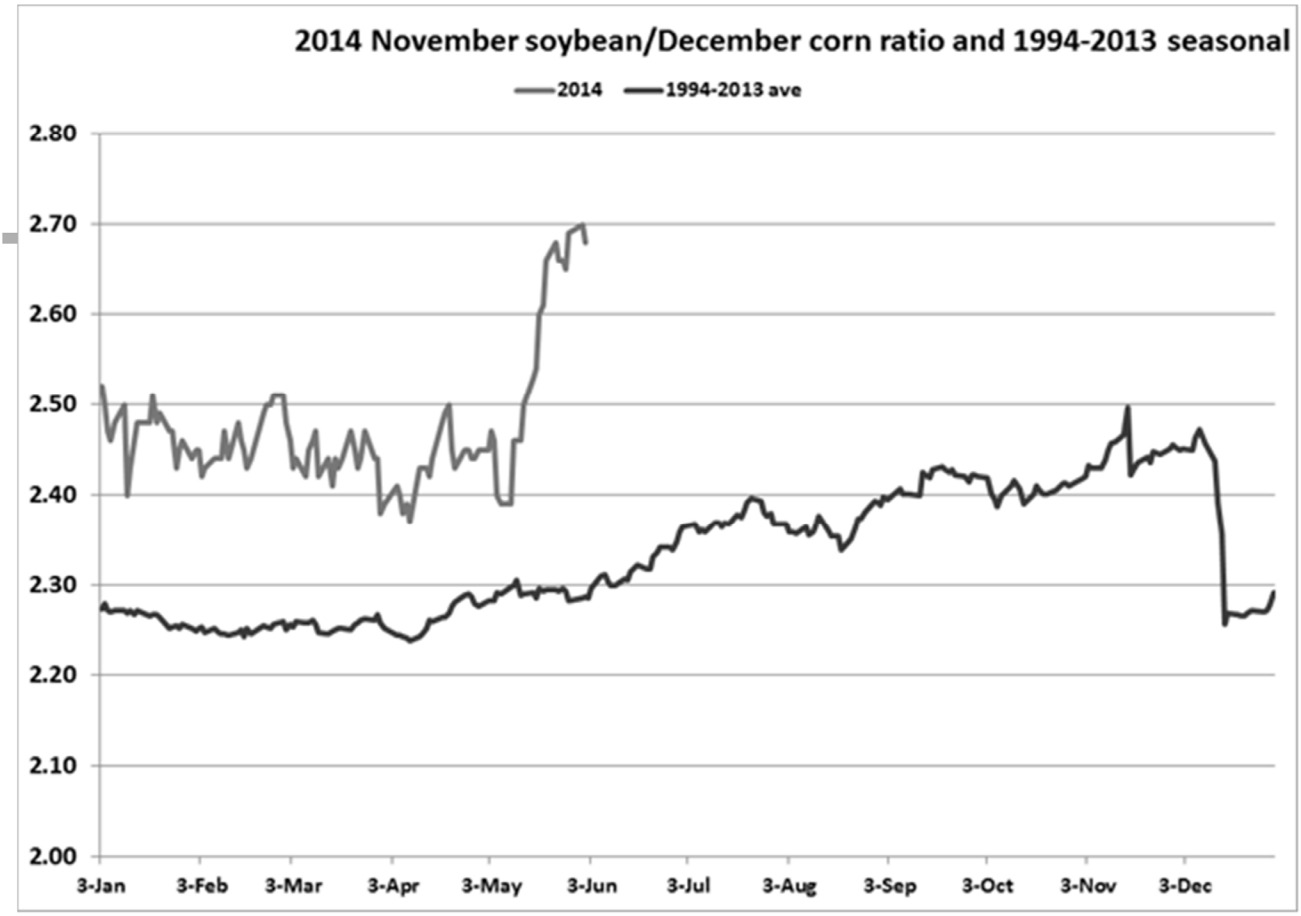
**WEEKLY CASH SPOT PRICES IN DOLLARS/TON**

| | This wk | Last wk | Year ago |
|---|---|---|---|
| Corn | $217.00 | $227.00 | $305.00 |
| Soybean meal | $525.00 | $548.00 | $585.00 |
| Cottonseed | $515.00 | $525.00 | $440.00 |



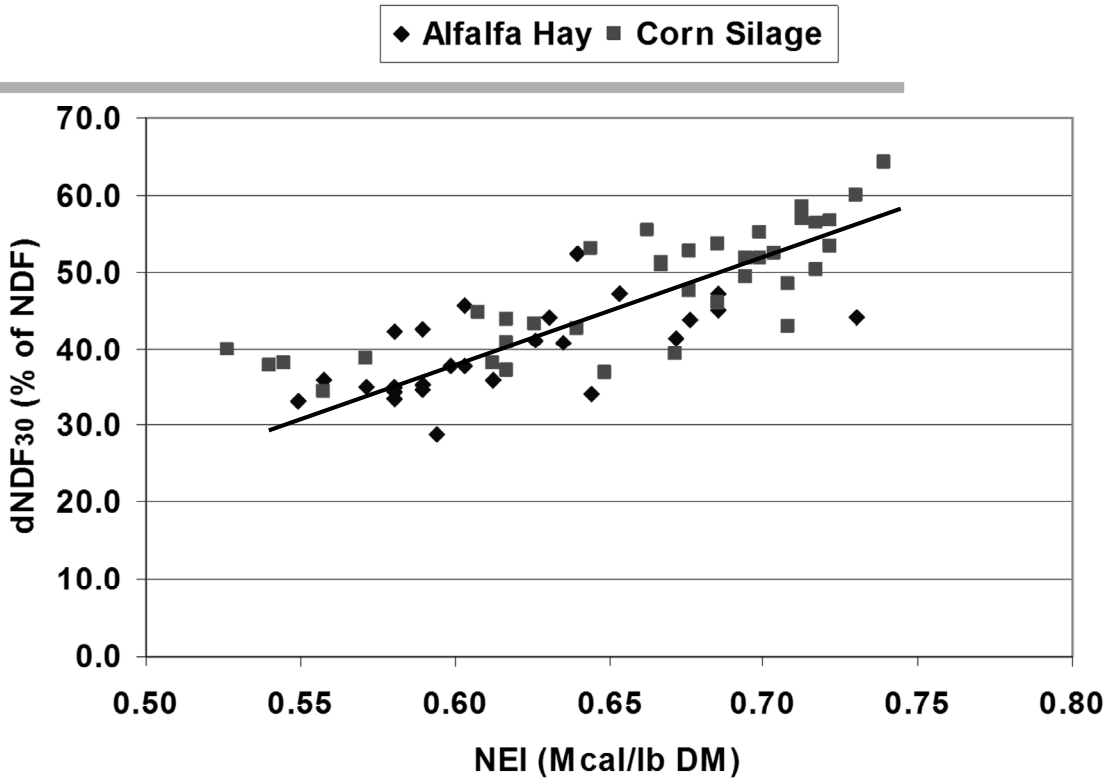
# So Guess What . . . . .

**USDA June Acreage report in million acres**

| | June 30 | Ave guess | Range | USDA Mar 14 | 2013 final |
|---|---|---|---|---|---|
| Corn | 91.641 | 91.725 | 91.0-92.2 | 91.691 | 95.365 |
| Soybeans | 84.839 | 82.154 | 80.5-84.0 | 81.493 | 76.533 |
| All wheat | 56.474 | 55.818 | 54.8-57.0 | 55.815 | 56.156 |

# Feed for Maximum Animal Feed Efficiency

- **Consider planting lower lignin corn varieties**
  - **higher digestibility, but generally lower yields, means less irrigation water is needed per unit of DM energy harvested**
- **Use dNDF values to evaluate silage quality**
  - **allows strategic use of silages**




# Increasing feed efficiency: Feed Additives

- **Yeasts and yeast cultures**
  - expect about 2 lbs/d of milk with no fat/protein % change
  - expect DM intake to be flat or decline up to 1 lb/d
  - best in high group TMR
- **Monensin**
  - reduces intake while maintaining milk in lower forage diets
    - improved efficiency is the only official 'claim'
  - but effects dissipate with time, so restrict to high TMR
- **Mold binders**
  - reduce negative effects of mycotoxins on feed efficiency
- **Rumen inert fats**
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## Increasing feed efficiency: Animal Management

- Cull at the end of lactation
  - make the culling decision because these cows are about to cost you ~1200 lbs of forage DM in the next 60 days
- Use DHIA records to cull in early lactation
  - low milk producers are inefficient producers
  - cows with low fat tests will be gaining weight
- Increase stocking density in corrals
  - consider moving it up to 110%+
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    - so only in corrals with medium to high BCS

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## Increasing feed efficiency: Feeding Systems

- **Remove spoiled silage at uncovering**
  - reduces mycotoxin levels which reduce feed efficiency
  - feed spoiled silage at low levels to heifers
- **Limit feed refusals to 1%**
  - creates limit feeding conditions and increased feed efficiency
- **Use two lactation TMR**
  - nutrient composition will be similar
  - allows strategic use of feed additives

# Overall

**There is only so much that can be done to extend forage supplies before you need to buy more, but there are general options:**

- **prevent losses of forage (and other feeds) you have purchased**
- **reduce forage feeding levels by:**
  - **finding new (overlooked) local feeds**
  - **feeding more grain**
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**Hope for a wet winter of 2014/15 !!**