

Harvest Summary of HRW

August 17, 2023

State Percent Complete

| Texas | 100% |
|--------------|------|
| Oklahoma | 100% |
| Kansas | 100% |
| Colorado | 97% |
| Nebraska | 97% |
| Wyoming | 90% |
| South Dakota | 93% |
| Montana | 70% |
| Idaho | 49% |
| Washington | 70% |
| Oregon | 94% |
| | |

- **Colorado** Very hot (high 90s-100). Mostly harvested. September 1 est. planting to pick up. NASS 73 MLN bu, increase from previous month (68 MLN).
- **Wyoming** close to 90%. Still waiting for some early hail patches to finish. 10.5% pro, TW slightly over 60. Prepping for seeding.
- Nebraska 97% earlier in the week. 37 MLN bushels. Slightly above expectations.
- North Dakota Good progress. NASS 13% harvested spring (slightly high). Increased temperatures forecast. Expecting some lower protein areas (heat), no disease, some pockets of heavy rains. NASS lowered yield to 45 (2022 was 50). Durum just starting est. yield a 35. Low spring wheat basis. 90+ temps forecast.
- South Dakota Winter wheat harvest mostly complete. NASS projections changed drastically from July- August. 36 bu/ac yield, high protein, good TW. Low yields. Spring moving quickly, est 50% harvested. Late moisture complications, weeds/later tillering. 38% below 2022 projections. Good TW, higher protein. Planting est. less than one month for winter. Decent moisture for planting. Winter wheat seed shortage reports. Hot temps forecast (100-105).
- Montana Hot and dry. (100+ temps), cooler temps/precip. forecast, then return to normal temps. Quickly moving through winter wheat harvest. Hearing lots of good yields (Billings area 70-90 bushel dryland). Lots of ground piles. Some lower proteins (10.5 11). Est. 11.5% avg protein. Spring wheat NASS 35 29 MLN bushels. Going backwards post- July 4th, more moisture needed. Hot temps. No TW issues. 39% cut. Building grasshopper issue statewide. Good quality durum, dry crop. Wheat stem sawfly issues.
- Idaho Some spring wheat harvesting before winter (winter under snow/re-seeded). Both look good. Some pockets of slightly lower TW, good protein and yields (above avg. in Southern ID, slightly below in Northern ID dry). Avg. year statewide. Minimal disease/pest. Hot/dry weather forecast.
- **Oregon** Mostly harvested. (Higher elevations still going). Lower than expected yields/quality challenges (lower TW, higher proteins), slight improvements as harvest progressed. High temps, dry crop.
- **California** Overall 12.5% protein, moisture 10%, 350 second FN, increased stability. High quality. Loaf volume 900 cc. Good baking quality.

- **GPAL** Testing complete. Similar to 2022. No vomitoxin, slightly lower FN and protein (9.2 vs. 9.6), cookie ratio a bit lower.
- USDA/ARS Pending WY/MT. 432 samples. 60.2 TW, Large kernel sizes avg. 69.7 vs. 57.2 2022, 12.7% pro, vs 12.9% 2022, 1000 KW 29.9, FN 364 vs 341 2022. Physical characteristics protein, large kernel sizing. 90.6 flour color, farinograph absorption 50.8 vs 58.9 2022, stability 8.8 vs. 8.9 2022, breakdown 10 mins vs. 10.4 2022. Disconnect between that data vs. end use functionality. P values, L values 109.6 vs. 65.2 (extensibility), W values 266.3 vs. 208 2022. Avg 0.7 vs. 1.4 2022 (P-L ratio), on the lower end. 46 samples evaluated: 64.9 mixograph absorption, vs. 64.3 2022. Mix times 4.06 mins vs. 3.8, tolerance 2.9 vs. 3. Good bake data 5.4 mins mix times, absorption 65.2%, avg. loaf volume for 37 samples 943.2 CC. Alveograph/mixograph good. Great breeding.
- WMC 44% of samples. Protein content dropping as more low protein samples. Started at 11.9%, now 11.5%, this week 11.1% protein. TW slightly increasing 63.3 lb/bu TW, kernel size/weight increasing. SRC profiles within typical range, nice distribution of profiles. Farinograph data weak. HRW coming in at 61.9 lb/bu, HRS 62.3 lb/bu, 14.5% pro, 1000 KW/size typical. Hard wheats pretty good so far.

Physical Characteristics

| Samples | Exp | MST | Pro% | DKG | TKW | FN | Grade | Test Weight | FM | DMG | S&B | DEF |
|---------|-----|------|------|-----|------|-----|-------|----------------|-----|-----|-----|-----|
| 432 | 520 | 11.7 | 12.7 | 0.8 | 29.9 | 364 | 1 | 59.8 | 0.2 | 0.5 | 0.9 | 1.6 |

Protein, test weight, and falling number are very good. The crop continues to exceed expectations. Kernel size is good.

Milling

| Composites Milled | Extraction % |
|-------------------|--------------|
| 51 | 76.04 |

Flour yields are slightly lower compared to last year.

Flour/Dough

| Samples | Flour Ash (14% mb) | FARINO Abs (14% mb) | ALVEO P (mm) | ALVEO L (mm) | ALVEO W (mm) | MIXO Water Abs (14% mb) |
|---------|-----------------------|---------------------------|-----------------|-----------------|-----------------|-------------------------------|
| 46 | .54 | 58 | 77.3 | 109.6 | 266.3 | 64.9 |

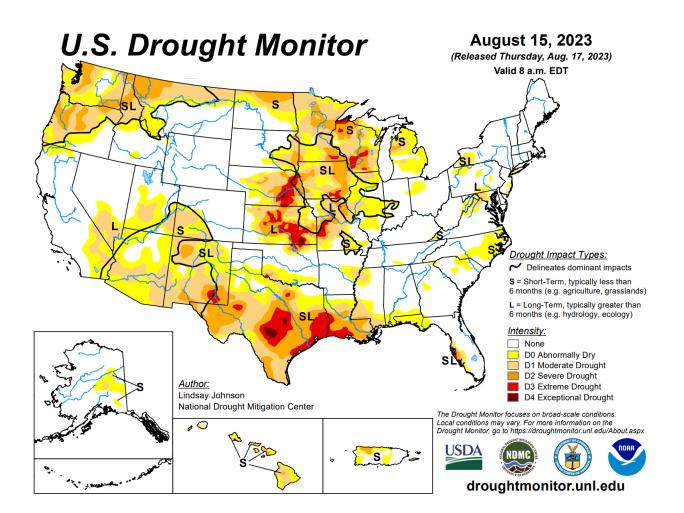
Ash content and absorption are good. Dough strength is excellent with greater extensibility. Mix times are better than last year.

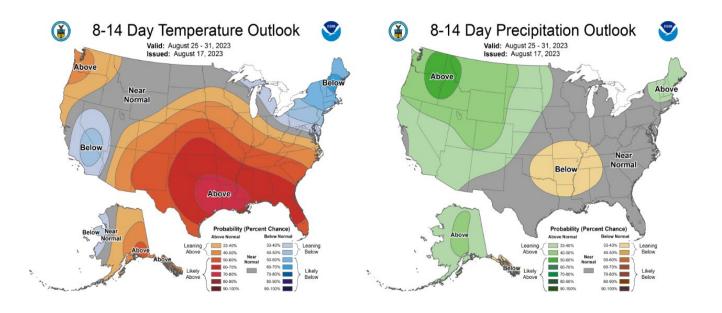
Baking Characteristics

| Samples | Mix Time (min) | Bake Absorption (14% mb) | Loaf Volume (cc) | Crumb Grain (1-10) | Crumb Texture (1-10) |
|---------|-------------------|-----------------------------|---------------------|-----------------------|-------------------------|
| 36 | 5.4 | 65.2 | 943 | 6.0 | 6.6 |

Absorption and loaf volumes are excellent. Bakers can look forward to functional flour.

The data is a straight average of all the samples that have gone through all tests. Due to rounding and the way information is presented and being early in the sampling, these numbers will change when weighting factors are calculated.





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