

OK14124-2 (Butler's Gold)

- **Reproductive developmental pattern suitable for unusually delayed planting.** Two characteristics of OK14124-2 auspicious to delayed planting, either intentional (behind a summer crop) or forced (due to crop failure or poor stand on first attempt), are i) low vernalization requirement based upon greenhouse testing, and ii) an accelerated maturity pattern observed under field conditions. In one-acre foundation seed production blocks planted at Stillwater on 5 Dec. 2019 and harvested on 8 June 2020, OK14124-2 yielded 60 bu/ac with 12.7% wheat protein concentration. Baker's Ann yielded 42 bu/ac with 12.5% protein. Each block was fertilized pre-plant to meet a 50 bu/ac yield goal, followed by a topdress nitrogen application in February 2020 of 45-50 lb N/ac. With a conventional planting schedule, OK14124-2 has been observed to reach physiological maturity about one week before the average maturity date in a given nursery-site. Other cultivars suitable for delayed planting, based upon Decemberplanted breeder trials conducted at Stillwater in 2019 and 2020, are Baker's Ann, Green Hammer, Skydance, and Bob Dole (KSU release). Gallagher and Smith's Gold are not recommended, even with Gallagher's low vernalization requirement.

- **Expect quality yield no matter when OK14124-2 is planted.** In the absence of a late winter or spring freeze event, OK14124-2 is considered in the same yield class as racehorse cultivars recently released by OSU, such as Lonerider, Showdown, and OK Corral, particularly where it appears best adapted, in north central Oklahoma. Its combined test weight and wheat protein footprint most resembles Doublestop CL Plus. Where most cultivars have a target protein concentration of 12%, a reasonable target for OK14124-2 is 13% at the standard fertilizer rate. Remarkably, test weight of OK14124-2 has exceeded that of Gallagher by nearly one lb/bu in statewide breeder trials in which the former would have remained in the field in a harvest-ready state much longer than Gallagher. Broader WQC valuation will not be available until February 2021, but input from industry collaborators and from USDA-ARS indicate OK14124-2 exhibits an excellent balance of dough strength and extensibility, good water absorption, exceptional loaf volume and external visual characteristics, exceptional kernel size and weight, and low polyphenol oxidase activity (important for frozen dough product color stability).

- The unusually large kernel size of OK14124-2 is a positive attribute but can be detrimental to achieving optimum population densities if unaccounted for in seeding rate calibrations.

- OK14124-2 is a moderately tall variety, but with good standability (similar to OK Bullet). Lodging is not expected to occur when planted at the recommended time.

- Susceptibility to Hessian fly, barley yellow dwarf, and powdery mildew may be mitigated with recommended planting dates.

- Its accelerated reproductive developmental pattern renders OK14124-2 highly susceptible to early April freeze events, when planted in the typical October planting window. This tendency can be avoided with recommended planting dates.

- *Recommended positioning* – grain-only production systems at a planting date not to precede the last week of October in north central Oklahoma, with adjustments commensurate with points north and south. Further testing is needed to better describe the best-adaptation zone in a delayed-planting system, especially in southern and southwestern Oklahoma. Seeding depth should be managed accordingly to ensure placement in adequate soil moisture to activate germination and vernalization, even in the absence of above-ground emergence. Spontaneous germination is critical to sufficient spring tiller production.

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NI04430/OK05303//Fuller

Grain-only yield	Orange		
Dual-purpose yield	Orange		
Early fall forage accumulation	Orange		
Test weight	Orange		
BYD	Yellow		
Leaf rust	Yellow		
Stripe rust	Yellow		
Powdery mildew	Yellow		
Septoria leaf blotch	Yellow		
SB/SS complex	Yellow		
Hessian fly	Yellow		
Shattering	Green		
Standability	Green		
Acid soils	Green		
Kernel size	Yellow		
Protein	Yellow		
Bread baking	Yellow		

Below-average or susceptible

Average or intermediate

Above-average or resistant