



Provisia[®] Rice Enterprise Budget

A Farm Planning/Decision Tool for 2023

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The Provisia[®] Rice System was released by BASF in mid-2018. The Provisia[®] system features a non-GMO herbicide-tolerant rice which allows growers to safely apply Provisia[®] herbicide and, when used in rotation with a Clearfield[®] production system, growers have the flexibility of planting a rice-rice-soybean rotation with the option of being able to plant a fourth year of conventional rice. BASF states that the overall advantage of Provisia[®] is that growers should be able to grow more rice over multiple seasons while rotating different herbicide modes of action whilst simultaneously ensuring sustainable management of all resistant rice types and annual grasses.

BASF states that PVL03, the latest rice variety in the Provisia[®] line, boasts improved blast resistance, a longer kernel length, and shorter stature compared to PVL02. PVL03 is an effective way to control a rice field infested with weedy rice and resistant grasses, restoring that field's economic efficacy. It has been more than 20 years since the launch of the Clearfield[®] production system for rice. Until the release of the Provisia[®] System, no new weed control technology had been introduced that has, according to BASF, the potential Provisia[®] offers to dramatically helps rice growers overcome yield-reducing weedy rice and resistant grass problems in their fields. The continued adoption of the Provisia[®] system also sets the stage for growers to begin to shift from simply rescuing infested fields to preventing herbicide resistance in weedy grasses.

The latest iteration of rice seed in the Provisia[®] production system, PVL03, was developed by Louisiana State University AgCenter. PVL03 is a long-grain rice promising potentially good yields, milling and grain appearance-giving it a distinct advantage over earlier Provisia[®] varieties. Much like the evolution of Clearfield[®] varieties, the initial Provisia[®] release- PVL01- made the technology available to growers but had some shortcomings. PVL02 offered significant improvements on yield potential. Another distinct advantage of PVL03 is its strong disease package. Like many of the new Mid-South variety releases, PVL03 contains the Pi-ta gene for blast resistance. This is of critical importance as both PVL01 and PVL02 were very susceptible to the fungal disease. PVL03 also has an ideal kernel length that averages about 7 millimeters, placing it between the shorter length PVL02 (6.5mm) and the very long grain PVL01 (7.4 mm). Much like PVL02, PVL03 also has good tolerance to Provisia[®] herbicide. According to Horizon Ag, Louisiana trials in 2019 and 2020 showed PVL03 yielding almost 8,500 pounds per acre, outyielding Cheniere and putting it on par with top-yielding Clearfield[®] varieties like CL153 in the coastal region of the U.S.

In order to construct a representative farm budget for Provisia[®] PVL03 rice, LSU AgCenter rice production specialists were consulted in efforts to establish and quantify optimal fertilization, seeding rate, and herbicide application rates. The estimated total direct (variable) cost per acre for PVL03 rice is

estimated to be \$852.50 per acre. When the additional cost of fixed machinery ownership is considered the total specified costs of PVL03 is calculated to be \$987.19 per acre. Figure 1.

Figure 1. Louisiana Provisia® PVL03 enterprise budget, 2023 crop year.

DIRECT EXPENSES							
<i>CUSTOM SPRAY</i>							
LARice GPS Charge - SW	acre	\$ 0.25	8.00	\$ 2.00	0.0%	\$ -	\$ 2.00
App by Air (5 gal)	appl	\$ 7.60	5.00	\$ 38.00	0.0%	\$ -	\$ 38.00
<i>DRYING</i>							
LARice Dry	cwt	\$ 0.90	77.70	\$ 69.93	0.0%	\$ -	\$ 69.93
<i>FERTILIZERS</i>							
LA Nitrogen	lb	\$ 0.78	160.00	\$ 124.80	0.0%	\$ -	\$ 124.80
LA Phosphate	lb	\$ 0.90	40.00	\$ 36.00	0.0%	\$ -	\$ 36.00
LA Potash	lb	\$ 0.67	60.00	\$ 40.20	0.0%	\$ -	\$ 40.20
<i>FUNGICIDES</i>							
Quadris	oz	\$ 6.73	10.00	\$ 67.30	0.0%	\$ -	\$ 67.30
<i>HERBICIDES</i>							
Provisia	oz	\$ 0.82	31.00	\$ 25.42	0.0%	\$ -	\$ 25.42
Command 3ME	pt	\$ 18.00	0.50	\$ 9.00	0.0%	\$ -	\$ 9.00
Loyant	oz	\$ 2.29	12.00	\$ 27.48	0.0%	\$ -	\$ 27.48
<i>INSECTICIDES</i>							
Karate Z	oz	\$ 1.41	4.00	\$ 5.64	0.0%	\$ -	\$ 5.64
<i>IRRIGATION SUPPLIES</i>							
Rice Gates	each	\$ 3.65	1.00	\$ 3.65	0.0%	\$ -	\$ 3.65
<i>SEED/PLANTS</i>							
Provisia O3	lb	\$ 1.30	60.00	\$ 78.00	0.0%	\$ -	\$ 78.00
Seed Tmt	oz.	\$ 0.29	13.50	\$ 3.92	0.0%	\$ -	\$ 3.92
<i>SERVICE FEE</i>							
Digital Ag Fee	acre	\$ 10.00	1.00	\$ 10.00	0.0%	\$ -	\$ 10.00
<i>CUSTOM FERT/LIME</i>							
App Fert by Air	cwt	\$ 9.00	3.80	\$ 34.20	0.0%	\$ -	\$ 34.20
<i>CUSTOM HARVEST/HAUL</i>							
LARice Haul	cwt	\$ 0.30	70.00	\$ 21.00	0.0%	\$ -	\$ 21.00
<i>HAND LABOR</i>							
Implements	hour	\$ 13.67	0.09	\$ 1.23	0.0%	\$ -	\$ 1.23
<i>LA OPERATOR LABOR</i>							
Self-Propelled Equip.	hour	\$ 16.54	0.33	\$ 5.46	0.0%	\$ -	\$ 5.46
<i>LA HIRED LABOR</i>							
Tractors	hour	\$ 13.67	0.86	\$ 11.76	0.0%	\$ -	\$ 11.76
<i>LA IRRIGATION LABOR</i>							
Irrigation System 2	hour	\$ 13.67	0.22	\$ 3.01	0.0%	\$ -	\$ 3.01
<i>DIESEL FUEL</i>							
Tractors	gal	\$ 4.00	7.21	\$ 28.84	0.0%	\$ -	\$ 28.84
Self-Propelled Equip.	gal	\$ 4.00	2.58	\$ 10.33	0.0%	\$ -	\$ 10.33
Irrigation System 2	gal	\$ 4.00	35.47	\$ 141.88	0.0%	\$ -	\$ 141.88
<i>REPAIR & MAINTENANCE</i>							
Implements	acre	\$ 4.84	1.00	\$ 4.84	0.0%	\$ -	\$ 4.84
Tractors	acre	\$ 8.13	1.00	\$ 8.13	0.0%	\$ -	\$ 8.13
Self-Propelled Equip.	acre	\$ 14.53	1.00	\$ 14.53	0.0%	\$ -	\$ 14.53
Irrigation System	acre	\$ 3.75	1.00	\$ 3.75	0.0%	\$ -	\$ 3.75
INTEREST ON OP. CAP.	acre	\$ 22.20	1.00	\$ 22.20	0.0%	\$ -	\$ 22.20
TOTAL DIRECT EXPENSES				\$ 852.50		\$ -	\$ 852.50
RETURNS ABOVE DIRECT EXPENSES				\$ 267.50		\$ -	\$ 267.50
FIXED EXPENSES							
Implements	acre	\$ 12.47	1	\$ 12.47	0.0%	\$ -	\$ 12.47
Tractors	acre	\$ 57.11	1	\$ 57.11	0.0%	\$ -	\$ 57.11
Self-Propelled Equip.	acre	\$ 24.43	1	\$ 24.43	0.0%	\$ -	\$ 24.43
Flood Irr.	acre	\$ 40.68	1	\$ 40.68	0.0%	\$ -	\$ 40.68
TOTAL FIXED EXPENSES				\$ 134.69		\$ -	\$ 134.69
TOTAL SPECIFIED EXPENSES				\$ 987.19		\$ -	\$ 987.19
RETURNS ABOVE TOTAL SPECIFIED EXPENSES				\$ 132.81		\$ -	\$ 132.81

Provisia® rice production calls for increased nitrogen fertilization, adherence to a specifically tailored recommended herbicide program and reduced seeding when compared to a traditional Clearfield® rice production system. The nitrogen fertilizer rate is increased to represent an upper bound of 160 pounds of

N applied. Per label guidelines, a maximum quantity of no more than 31 ounces of Provisia® herbicide can be applied to an annual rice crop. Applications of Command® and Loyant® herbicides are also included in the representative enterprise budget. The seeding rate for PVL03 is set at 60 pounds per acre.

In comparing the fertilizer, herbicide, and seed costs of Provisia® rice to conventional, Clearfield®, and hybrid rice varieties, noticeable differences exist. Table 1. As observed from the LSU AgCenter's rice cost of production estimates for 2023, Provisia® rice is the second-most expensive. However, the ability to rotate fields with alternative production technology can provide the farming operation with the opportunity for increased returns as compared to fallowing the field.

Table 1. Comparison of production cost categories for rice production systems in Louisiana, 2023.

<i>Input Category</i>	<i>Conventional</i>	<i>Clearfield®</i>	<i>Hybrid</i>	<i>Provisia®</i>
Fertilizer	\$177.60	\$177.60	\$193.20	\$201.00
Herbicide	\$51.21	\$41.04	\$34.47	\$61.90
Seed	\$39.60	\$114.00	\$180.00	\$78.00
Other Costs	\$515.31	\$517.52	\$454.57	\$511.60
Total Direct Costs	\$783.72	\$850.16	\$862.24	\$852.50

The interactive feature of the Microsoft® Excel file allows growers to change parameter values in [BLUE](#). Growers can specify the number of applications, units, and unit prices for custom applications, fertilizer applied, drying charges, chemical applications, seeding rate, labor rates, diesel fuel consumed, and other direct production expenses associated with rice production on a per-acre basis. Also, rice producers can enter the percentage amount of any category that is shared with the landlord. Through use of this interactive Microsoft® Excel spreadsheet, growers can examine the impact that any potential changes in grower/landlord proportional cost-sharing may have on party net returns per acre as well as the impact input price volatility has on the rice production profitability. A sensitivity analysis table is included in the spreadsheet to assist growers in determining how a change in either one and/or both price and yield parameters can impact net returns (\$/acre). Figure 2. Price and yield parameters are set to vary $\pm$ \$0.05 per cwt and $\pm$ 5 cwt from the parameters selected by the grower. At a rice price of \$16.00 per cwt and a rice yield of 70.0 cwt per acre, the grower's net returns above variable costs is estimated to be \$267.50 per acre- assuming no land rent. Changes in input prices, proportional cost sharing, rice price, and rice yield can significantly affect the level of grower net returns above variable costs.

Figure 2. Returns above variable production costs to the grower for Provisia® rice, varying price and yield levels.

Returns Above Variable (Direct) Production Expenses to the Grower (with share rent)									
<i>Yield</i>	<i>Rice Price</i>								
	\$ 15.80	\$ 15.85	\$ 15.90	\$ 15.95	\$ 16.00	\$ 16.05	\$ 16.10	\$ 16.15	\$ 16.20
50.00	\$ (62.50)	\$ (60.00)	\$ (57.50)	\$ (55.00)	\$ (52.50)	\$ (50.00)	\$ (47.50)	\$ (45.00)	\$ (42.50)
55.00	\$ 16.50	\$ 19.25	\$ 22.00	\$ 24.75	\$ 27.50	\$ 30.25	\$ 33.00	\$ 35.75	\$ 38.50
60.00	\$ 95.50	\$ 98.50	\$ 101.50	\$ 104.50	\$ 107.50	\$ 110.50	\$ 113.50	\$ 116.50	\$ 119.50
65.00	\$ 174.50	\$ 177.75	\$ 181.00	\$ 184.25	\$ 187.50	\$ 190.75	\$ 194.00	\$ 197.25	\$ 200.50
70.00	\$ 253.50	\$ 257.00	\$ 260.50	\$ 264.00	\$ 267.50	\$ 271.00	\$ 274.50	\$ 278.00	\$ 281.50
75.00	\$ 332.50	\$ 336.25	\$ 340.00	\$ 343.75	\$ 347.50	\$ 351.25	\$ 355.00	\$ 358.75	\$ 362.50
80.00	\$ 411.50	\$ 415.50	\$ 419.50	\$ 423.50	\$ 427.50	\$ 431.50	\$ 435.50	\$ 439.50	\$ 443.50
85.00	\$ 490.50	\$ 494.75	\$ 499.00	\$ 503.25	\$ 507.50	\$ 511.75	\$ 516.00	\$ 520.25	\$ 524.50
90.00	\$ 569.50	\$ 574.00	\$ 578.50	\$ 583.00	\$ 587.50	\$ 592.00	\$ 596.50	\$ 601.00	\$ 605.50

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