

The Parent of Jersey Udder Index™

By now, you have received the December CDCB-AJCA evaluations incorporating genetic base changes and implementing the 2015 update of Jersey Performance Index™ via Green Book Online (<http://greenbook.usjersey.com>). You'll have also seen the new presentation of Jersey Udder Index™. We'll have more to say on that later, but first, some thoughts on the parent of JUI, the Functional Trait Index.

Of the eight components of JPI™, only one—the Functional Trait Index—captures the effects of type traits *within* production on lifetime profitability. It does this by figuring out how the net income from Jersey cows having the same level of production is impacted as the score for each linear type trait changes.

Why FTI matters is that it is a retrospective look at what functional type traits were important to the Jersey cow's survival

up to a defined point in time. As such, it pinpoints where improvement is needed and needed most, and where opportunities for further gains are possible.

FTI has been an effective component of Jersey Performance Index™ since 1992. While space limits the discussion here, that claim is supported by the vast improvement in feet and legs. Those two traits had 28% of emphasis in FTI from 1998 through the 2010 update. As part of JPI™, FTI identified bulls that would be trait improvers, so that in the 2015 update, just 1% of FTI selection emphasis is on mobility traits. More broadly, from the time FTI was introduced, its primary emphasis has been on udder traits, driving two decades of continuous improvement in those traits at the same time Jersey productivity has increased to record levels.

The updated Functional Trait Index presented in Table 1 is in a very different format than previously used. A new approach was used to delineate the direct contribution of each type trait within FTI to Jersey Performance Index™. In the words of geneticist Kent Weigel, who did the 2015 FTI and JPI updates, the relationships are now “transparent.”

What Table 1 shows is that what will make the most

difference in improving Jersey profitability going forward is increasing selection pressure on udder traits. But as always, some traits are more important than others, a fact clearly depicted in the updated Jersey Udder Index™, which is derived from FTI. Figure 1 shows the relative weighting of traits in JUI₂₀₁₅. There are no surprises. Udder Depth is the most important at 37%. That's followed by three traits (Fore Udder

Attachment, Udder Cleft and Rear Udder Height) that have similar influence on cow survival and lifetime net income.

Before this evaluation release, Jersey Udder Index was reported in PTA form. Now the JUI number is simply how many points udder traits add (or subtract) from Jersey Performance Index™. In short, JUI's meaning is linked directly to an animal's JPI. To illustrate, a test run of the 419 A and G code bulls, adjusted for base changes, averaged 18.1 for JUI, the range being from -20.5 to 47.2. The JPI average was

183. So for the hypothetical average Jersey bull at JPI 183, 18 of those points are from JUI. Think of them as JPI udder points.

The strategy remains unchanged. Rank bulls first by JPI, then refine your selections. That way, you'll be selecting for high production from cows that are a pleasure to milk.

Table 1. Weights for individual and grouped type traits in Functional Trait Index₂₀₁₅ (15% of Jersey Performance Index™).

Trait Group	Relative Weight (%)	Linear Trait (Direction)	Overall Weight (%)
Udder	13.8	Udder Depth (+)	5.1
		Fore Udder Attachment (+)	2.6
		Udder Cleft (+)	2.1
		Rear Udder Height (+)	1.9
		Teat Placement (+)	1.0
		Teat Length (-)	1.0
		Rear Udder Width (+)	0.1
Body	1.0	Stature (-)	0.6
		Rump Width (+)	0.2
		Strength (-)	0.1
		Rump Angle (-)	0.1
		Dairy Form (+)	0.0
			0.0
Mobility	0.2	Foot Angle (+)	0.1
		Rear Legs (-)	0.1
			0.0

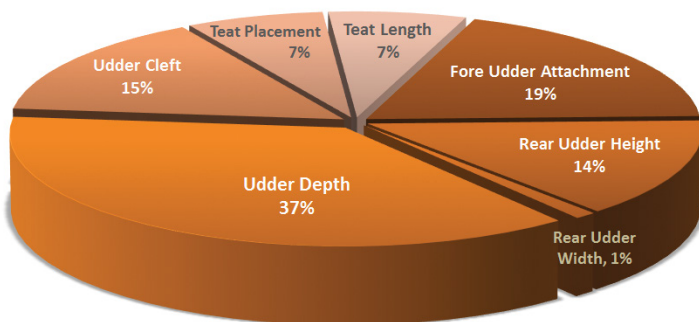


Fig. 1. Relative weights of traits in Jersey Udder Index₂₀₁₅ (JUI™).