



# By the Numbers

► by **Dan Moser**, American Angus Association

## \$W, a selection index for cow-calf production

For more than 10 years, the American Angus Association has provided a number of economic tools to assist commercial and seedstock breeders in sire selection. The first indexes released — feedlot value (\$F), grid value (\$G) and beef value (\$B) — focused on traits such as growth and carcass merit, essential for maximizing profit when selecting sires used in terminal roles. Soon after, weaned calf value (\$W) and its component trait cow energy value (\$EN) were released. \$W is designed to select sires that maximize profit for commercial cow-calf producers who sell calves at weaning.

### Revenue and expense

\$W combines several traits that have a direct impact on the revenue and expense of commercial cow-calf production. The primary revenue component of the index is the weaning weight (WW) expected progeny difference (EPD), a growth trait that reflects the pounds of calf a commercial cow-calf producer has to sell.

The underlying calculations use a base calf price, which is updated annually to reflect current market conditions over a three-year historical period. A standard relationship between calf weight and calf sale price per pound, commonly known as a “slide,” is also assumed, with heavier calves receiving a lower price per pound at marketing.

Milk EPD is also considered when

calculating revenue, as heavier-milking cows produce heavier calves at weaning.

On the expense side of the ledger, \$EN is the cow maintenance cost used in calculation of \$W. Components of \$EN are the mature cow weight (MW) EPD and the milk EPD. Larger cows require more maintenance energy and, thus, have a higher annual cost. Similarly, research has shown that heavier-milking beef cows have higher feed costs when lactating, but also when dry. Those two traits are combined with current feed prices and grazing costs to predict differences in annual cow energy costs.

Keep in mind that \$EN values reflect savings in costs, so sires with higher \$EN values would be expected to sire lower-cost cows due to lower levels of mature size and milk.

Another cost component in \$W is birth

### Prioritizing maternal traits

MaternalPlus® is a voluntary, inventory-based reporting system designed to capture additional reproductive trait data and, ultimately, expand reproductive and lifetime productivity tools. By using MaternalPlus, producers will receive additional information at weaning processing time, including calving ease, birth weight and weaning weight expected progeny differences (EPDs) for calves out of inventoried cows. Enrollees also have access to a broader range of analysis and benchmarking tools to help evaluate the cow herd.



In recognition of their emphasis on maternal traits and their commitment to collecting the data necessary to further characterize those traits in the Angus breed, a listing of enrollees is provided on the American Angus Association website (see [www.angus.org/Performance/MPlusParticipants.aspx](http://www.angus.org/Performance/MPlusParticipants.aspx)). On March 8, 156 members were enrolled in MaternalPlus, and those members are listed here. To learn more about MaternalPlus, visit [www.angus.org](http://www.angus.org) or AAA Login.

#### ALABAMA

Heartland Farms Alabama,  
Alexander City  
Highlander Ranch, Opelika  
Pleasant Grove Farms, Heflin  
Tim & Tandy West, Centre  
WW Cattle, Section

#### ARIZONA

Tom Anderson, Saint Johns

#### ARKANSAS

Fred & Shirley Williams, Fort Smith  
Marlar Farms, Fort Smith

#### CALIFORNIA

Eddie & Jessica Veenendaal,  
Kingsburg  
EZ Angus Ranch, Porterville  
Fox Angus Venture, Dixon  
Joe & Michele Sammis, Dorris  
Ramsey E. Wood, Susanville  
Rollingwood Ranch, Potter Valley  
Schafer Angus Cattle, Orland  
Tehama Angus Ranch, Gerber

#### COLORADO

Axtell Cattle Co., Anton  
Michael L. Ripp, Delta  
Mick Cotton, Hotchkiss  
Paul or Trish Schmucker,  
Hotchkiss  
Quentin L. Miller, Deer Trail  
Thelma B. Starner, Delta  
Van Ness Angus Ranch, Bedrock

#### FLORIDA

Windy Meadows Farm LLC, Ocala

#### GEORGIA

Cloud Bros., Canton  
David & Carolyn Gazda, Athens

#### IOWA

Brad Z Ranch, Guthrie Center  
Cherne Angus, Guttenberg  
D.K. Bechtum & Family, Riceville  
Double K Ranch, Afton  
Iowa State University Research  
Herd, Ames  
Lance Larsen, Underwood

#### Larsen Angus, Marne

Nichols Farms, Bridgewater  
Orval Hinrichsen, Hinton  
R.A. Hanrahan & Son, Cumming  
Ro-sie View Farm,  
Columbus Junction  
Wiederstein Pure Angus Farm,  
Audubon

#### IDAHO

Doug or Janice Burgess,  
Homedale  
R. Chester Adams, Firth  
Rocking R Cattle Co., Hayden  
Vertical Edge Genetics, Bancroft

#### ILLINOIS

Matthew Brandt, Fults

#### INDIANA

Benson Angus, Greensburg  
Blue River Acres Angus, Shelbyville  
Stewart Select Angus LLC,  
Greensburg

#### KANSAS

Black Velvet Cattle, Mankato  
Cline Cattle Co., Onaga  
Dalebanks Angus Inc., Eureka  
Ficken Angus Farms, Bison  
Frederick R. Smith, Pittsburg  
Gene Barrett, Grantville  
Gilliland Angus, Fort Scott  
Jeff Johnson, Eudora  
Joel and Mary Bunker,  
Sharon Springs  
Sachse Family Angus, Easton  
VanDerVeen Farms, Prairie View  
Wendling Farm LLC, Halstead

#### KENTUCKY

Dewey S. Coffey, Liberty  
Jason E. Crowe, Irvine  
Oak Hollow, Smiths Grove

#### MICHIGAN

David F. Lutchka, Grass Lake

#### MINNESOTA

Bullerman Angus, Adrian

weight (BW) EPD. Besides the obvious labor costs and potential death loss, calving difficulty represents an increased risk of health issues for the calf and increased postpartum interval for cows experiencing dystocia. Accordingly, sires with a lower BW EPD will have a higher \$W value.

The calculation of \$W combines revenue from WW and milk EPDs with expenses from BW EPD and \$EN, along with relevant assumptions of feed costs and calf sale prices, to identify the most profitable sires for producers who sell calves at weaning.

Milk represents both a revenue through additional calf weight and an expense as additional cow maintenance requirements. With current high calf prices, higher milk EPDs increase \$W values, because the additional calf revenue more than offsets the increased cow costs.

## 35 Keys to Success Seedstock & Genetic Selection

Like all Angus \$Values, \$W is expressed in dollars of profit per calf produced, so the total additional profit generated by a higher-\$W sire depends on the number of calves sired per year, and the number of years a sire is used.

Consider two Angus sires, Bull A with a \$W value of \$30, and Bull B with a \$W value of \$45. The difference in \$W values between the sires is \$15, indicating that if those two sires were mated to similar cows under similar environmental conditions, the additional profit resulting from use of Sire B would be \$15 per calf sired due to a more favorable combination of revenues and expenses. If each bull sires 25 calves per year for four years, for a total of 100 calves

sired, the additional profit generated by Sire B would be \$1,500 due to additional calf sale revenue and reduced input costs of daughters.

It's important to note that \$W does not take into consideration factors other than weight that may impact calf value. Increasingly, premiums are paid for weaned calves that are genetically superior for growth, feed efficiency and carcass merit. Producers with the opportunity to gain premiums for calves with desirable genetics for these traits should consider other selection tools like \$B, along with \$W, to select for both increased cow-calf production efficiency and higher calf value.



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Hufford Farms, *Morris*  
River Ridge Farms, *Hallock*  
Timothy John Sullivan, *Kellogg*  
Westar Angus, *Dent*

### MISSISSIPPI

Cole's Cattle Co., *Bogue Chitto*  
De Santis Angus, *West Point*  
Waggoner Cattle Co. LLC,  
*Carthage*

### MISSOURI

Angle Bar Ranch Genetics, *Adrian*  
Carl or Linda Goodnight,  
*Carthage*  
Darrel Rinne, *Higginsville*  
Douglas R. Cartee II,  
*Sainte Genevieve*  
Dr. & Mrs. Norman Garton,  
*Nevada*  
Eggers Stock Farm, *Jackson*  
Elizabeth M. Otte, *Saint Mary*  
Farnsworth Cattle Co., *Downing*  
Galaxy Beef LLC, *Graham*  
Greene Cattle Co., *Cassville*  
Matthew & Amy Thomas, *New*  
*Bloomfield*  
Miller Angus Farm, *Downing*  
Robert D. or J. Paula Neese,  
*Rutledge*

### MONTANA

Anchor Angus, *Glendive*  
Coleman Angus, *Charlo*  
Dave & Yvonne Hinman, *Malta*  
Eli M. Berry, *Reed Point*  
Lane Schmitt, *Chinook*  
Leo R. McDonnell Jr., *Columbus*

Montana Ranch LLC, *Bigfork*  
Nathan M. Baltrusch, *Havre*  
Robert Willekes, *Choteau*  
Sitz Angus Farm, *Dillon*  
Thousand Hills Angus, *Toston*

### NEBRASKA

Arlen J. & Becky Sawyer,  
*Bassett*  
B & D Angus, *Sidney*  
Kraus Angus Ranch, *Milburn*  
William N. Riecken, *Lyons*

### NEW MEXICO

Gregory M. Carrasco, *Las Cruces*

### NORTH CAROLINA

D. Randall Smith, *Snow Camp*  
Mountain Creek Farm, *Bahama*  
Richard D. Kirkman, *Siler City*  
Shuffler Farm, *Union Grove*  
Three Arrows Farm, *Flat Rock*

### NORTH DAKOTA

Best Angus, *Watford City*  
Diamond J Angus Ranch, *Mandan*  
Keith & Nikki Medalen, *Towner*  
McCumber Angus Ranch, *Rolette*  
Opp Bros. Angus, *Hebron*  
Richard C. Tokach, *Saint Anthony*  
Shane & Amanda Talkington,  
*Belfield*

### OHIO

Douglas A. or Mary F. Emrick,  
*McConnelsville*  
Kylie Hemchak, *Bellevue*

### OKLAHOMA

Bell Rule Genetics LLC, *Adair*  
Hollon Ranch, *Woodward*  
Jeffery C. Mafi, *Coyle*  
John H. Pfeiffer Jr., *Mulhall*  
Terry & Denise Pearcy, *Colony*

### OREGON

Mariam R. Horton,  
*Christmas Valley*  
MC Ranch, *Brownsville*  
P. Heberling & K. Love,  
*Roseburg*

### PENNSYLVANIA

Rusty Roof Angus, *Littlestown*

### SOUTH CAROLINA

Yon Family Farms, *Ridge Spring*

### SOUTH DAKOTA

Dartt Angus, *Wall*  
Michael Erdmann, *Groton*  
Peterson Angus, *Alcester*  
Sodak Angus Ranch, *Reva*  
Stomprud Angus Ranch,  
*Mud Butte*  
Tom Varilek & Family, *Geddes*

### TENNESSEE

Haynes Angus Farm, *Birchwood*  
Hill Vue Farm, *Cleveland*  
Peter A. Di Corleto, *Lascassas*

### TEXAS

Bradley 3 Ranch Ltd., *Memphis*  
Brent Holmes, *Teague*  
J&S Farms, *Jacksboro*

Jack R. Roper, *Southlake*  
Olson Land & Cattle, *Hereford*

### UTAH

Linford Angus, *Riverton*

### VIRGINIA

D. Brooke & Ann H. Miller,  
*Washington*  
Edgewood Angus LLC,  
*Williamsburg*  
Hidden Hand Angus Farms, *Willis*  
Jerry J. Gustin, *Gloucester*  
Lazy Acres Angus, *Rocky Mount*  
Matthew Manbeck, *Staunton*

### WASHINGTON

Crouthamel Cattle Co., *Touchet*  
Matt Hayter, *Warden*  
Sackmann Cattle Co., *Warden*

### WEST VIRGINIA

Howard R. Page, *Burlington*  
James A. Kinsey, *Flemington*

### WISCONSIN

Biddick Inc., *Livingston*  
John & Jacqueline Andersen,  
*Verona*  
Kuhle Farms, *Hazel Green*  
Robert P. Nusbaum, *Potosi*  
Woodhill Farms Inc., *Viroqua*

### WYOMING

Daniel Greet, *Ten Sleep*  
WEBO Angus LLC, *Lusk*