

BROADHEADS

What to look at when picking your broadhead.

Dr Ashby conducted an extensive study on broadheads. His studies can be found at <http://www.grizzlystik.com/Dr.-Ed-Ashby-W26.aspx> or <http://www.dangercloseoutdoors.com/> I would recommend reading before starting your hunting arrow build.

For a brief summary, we need to look at what improves penetration. We know by deductive reasoning a long slender head will out penetrate a wide head. We know the more blades the broadhead has the less penetration. But we also need to look at and understand what all goes into picking your broadhead.

What matters when picking a broadhead.

When we are plaining our hunting arrow build, the broadhead is the first and most important part. The broadhead must be structurally strong with good edge retention for the deration of penetration. It should also have the least amount of resistance for your application.

Looking at resistance.

Looking at resistance we need to understand what causes this resistance. Blade angle and the number of blades is a major factor in resistance with broadheads.

In Dr Ashby writings he talks about a 3 to 1 ratio. What this is called is broadhead mechanical advantage. (MA) Looking at (MA) of a broadhead takes in the account of this broadhead blade angle.

How do we calculate this mechanical advantage?

To calculate the MA of broadheads we use the formula (Length of cutting blade) divided by (1/2 width of head) divided by (number of blades)

Here is an example from tuffhead:



Knife Grade High Carbon Stainless Steel - Rockwell Hardness 52

Using the numbers given we can calculate the tuffhead MA.

$$MA = (3.0625) / (.531) / (2) = 2.88 \text{ This head is just under the 3 to 1 ratio.}$$

Broadhead MA if it was a 3 blade:

$$MA = (3.0625) / (.531) / (3) = 1.92$$

Broadhead MA if it was a 4 blade:

$$MA = (3.0625) / (.531) / (4) = 1.44$$

The formula given is an effective way to look at broadheads and choosing what you want when building your hunting arrow. By doing this formula it's easy to see when adding blades increases the resistance to penetration.

Now does this mean you need a head that has a 3 to 1 ratio. No, it doesn't. what it means is finding a broadhead with the highest MA that fits your requirements and what your hunting.

A person shooting low draw weight would benefit from a higher (MA) then a person shooting say 65lbs. Same as a person shooting a lighter arrow would also benefit from a higher (MA) then a person shooting a heavier set up.

There are lots of factors when choosing broadheads. It really matters with low draw weight when the average broadhead only has a (MA) of 1 or less.

There are a substantial number of broadheads on the market. Some good some bad. Just take your time when looking and choosing your hunting arrow.

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