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## Gene editing — It's here

*Genetic engineering is widespread across all agriculture, and gene editing of livestock has been in development for years.*

It was inevitable the American Angus Association would someday be responding to the technology being introduced into Angus genetics. During the last several years, the board of directors has been preparing by developing policy and procedures to consider allowing gene edited animals into the breed registry (see Rule 104.f of the Breeder's Reference Guide). Within that structure, a gene edit of "slick hair" has been brought forward for approval.

A breeder recently told me getting his mind around this topic was like getting his arms around an octopus. I understand that feeling, and no doubt the topic is technical and complicated.

Adding to the complexity, anything that introduces significant change also evokes significant emotion. Those emotions range from excitement around the potential to fear of the unknown or unintended consequences. I am pretty sure I have experienced the full range of those emotions on this topic, sometimes within minutes of each other.

### Learning more

My goal of this column is not to convince anyone of the best path forward. Candidly, I don't claim to know what the best path is. My goal is to present a framework to help facilitate healthy, objective and productive dialogue that results

in informed, broad-perspective decisions to benefit the Angus breed and the farmers and ranchers making their livelihood with Angus cattle.

The first step to tackling the octopus is education. While I won't attempt to explain the science of gene editing in this column, I would highly encourage breeders to seek out the information we have provided through articles, podcasts and various other resources to establish a foundation knowledge of gene editing (see sidebar). It is a technical topic, so having an objective discussion requires some base knowledge on the subject. For example, knowing gene editing and a genetically modified organism (GMO) are not the same thing helps clear up some confusion.

It's also important to frame the scope of the decisions in front of the Association. The decision is not IF gene editing should be allowed in beef production or IF gene edited animals are allowed to enter the food supply. Gene-edited beef cattle are here and walking around, and the Food and Drug Administration (FDA) is the governing body determining what is allowed and what requires labeling in our food supply. It is logical to be concerned about consumer acceptance of these technologies and how it might affect our *Certified Angus Beef*® (CAB®) brand, but ultimately the FDA will

### Learn more about gene editing



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Gene Editing and Angus: A New Way to Solve Old Problems?  
[www.angusjournal.net/episodes/episode/77f7f8ba/gene-editing-and-angus-a-new-way-to-solve-old-problems](http://www.angusjournal.net/episodes/episode/77f7f8ba/gene-editing-and-angus-a-new-way-to-solve-old-problems)



SCAN TO LISTEN



#### **Gene Editing: An exciting tool, scary science or somewhere in between?**

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SCAN TO WATCH





be making those determinations, not the Association.

For years the team at CAB has educated and defended technology use in agriculture, including GMO crops fed to most all cattle. While for us this topic might feel uniquely different, to the consumer there isn't much gap between gene editing and hormone use for synchronization, *in vitro* fertilization (IVF), embryo transplant (ET) or any other reproductive technology we consider commonplace. While we tend to focus on the downside risk, gene editing for reduced heat stress or disease resistance and lowered antibiotic use could all be seen as very positive to consumers.

### Questions to answer

Board approval of a gene edit, also call an intentional genomic alteration (IGA), per policy, surrounds the determination of the specific IGA "providing sufficient benefit to or

advancement of the Angus breed." Clearly this is subjective, and will be seen differently across our diverse breeders and regions of the country.


Of course, there is also the question of breed purity. Gene editing can be accomplished through genomic alteration, deletion or insertion. Should we treat all of these procedures the same? If gene editing is simply accelerating what could naturally occur over time, is that OK? Do we see it differently if the edit is not naturally occurring in our population, but reduces bovine respiratory disease by 50%?

Then come the questions around access. To me this may be the most important component of the discussion. Are gene edits able to be patented? If so, is that acceptable within our breed registry? Can we build safeguards to allow access to all Angus breeders? Is this much different than a breeder or marketer creating a syndicate on their elite

bull, limiting semen or pricing it in such a way that most breeders can't afford those genetics? Should the Association be putting restrictions on what technologies breeders can use or even how they choose to market their cattle? These are all considerations that need extensive thought and dialogue.

Probably the "easy" answer to all of this is to simply not allow gene editing, or at least not now. But even that decision obviously isn't without risk. I think we can expect gene editing to stay; and how other breeds or other seedstock providers, in this country or another, adopt the technology could influence a registered Angus breeder's ability to compete. Again, more to consider.

These types of topics can be divisive to an organization, but we can't let that happen. No one benefits. The board has worked to be very transparent with the decision-making process around gene editing and emphasized the need for feedback and input from breeders. While making uninformed and inflammatory comments on social media might be the way of our society, it's not helpful and not how we do things in agriculture.

Reach out to your board members and share your opinions and questions. Being open-minded and objectively listening to different perspectives is woven into the history of this organization, allowing Angus breeders to make solid decisions for the future of the breed. I have no doubt that is the best path today, as well. 

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