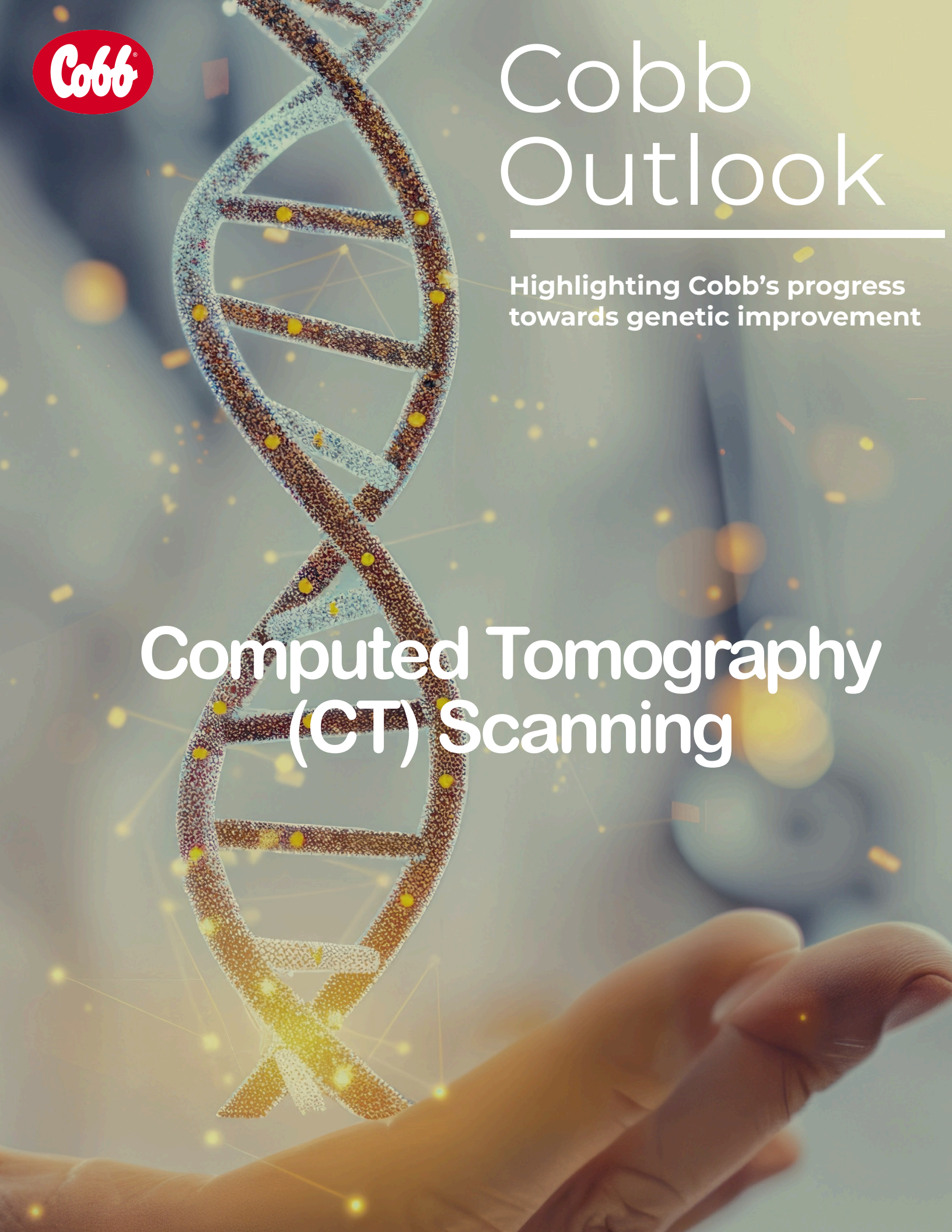




Cobb Outlook

Highlighting Cobb's progress
towards genetic improvement

Computed Tomography (CT) Scanning



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What is CT scanning?

Computed Tomography (CT) scanning is an imaging technique that uses a combination of X-rays and computer processing to create cross-sectional images (slices) of the body. These images provide detailed information that we can use to predict traits.

What does a CT image show?

Digital detectors capture the data and send it to a computer. The computer uses a mathematical algorithm to produce 2D images. These images are very thin slices of the bird's body. The slices are stacked by the computer to assemble a 3D image allowing non-invasive evaluation of internal structures.



At Cobb, we use non-invasive technology like CT scans to measure traits as part of our genetic selection program.

Genetic Selection and CT Scanning

CT scans are powerful, non-invasive tools that offer multiple advantages over traditional, subjective selection techniques. Using scans and bird metrics collected into a database, an objective scoring system can be created with defined thresholds to streamline the

selection decisions. The database also provides a robust data collection to evaluate newly identified and potential selection traits retrospectively.

Selectively breeding broiler breeder chickens has allowed Cobb to improve genetics and produce birds with traits like disease resistance, increased feed efficiency, and overall productivity. Over the past few decades, Cobb has expanded selection traits and embraced new technologies like CT scanning to continually improve our genetics.

Each of our pedigree chickens is selected evaluating more than 50 traits with half related to health and welfare outcomes. CT scans and other innovative tools have helped us improve our genetics and enhance the behavior and health of flocks while also increasing the health and welfare outcomes of our chickens



It takes less than 1 minute to perform a CT scan on a bird. In that time, a scan can collect data to measure:

- Muscle quantity
- Muscle quality
- Bone density
- Fat deposition
- Organ development



Problem

- Given the importance of breast meat quality in broiler chickens, measuring and selecting birds with good muscle shape and healthy development is critically important.
- Muscle myopathies are difficult to consistently detect through manual palpation and visual examination.
- Non-invasive technology such as sonograms only provide 2D images.
- Invasive analyses are impractical and non-adaptable to selection.

Solution

- CT scans provide a non-invasive 3D image of the breast muscle.
- The mass and shape of the breast including thickness, length and width are all predictable with CT imaging.
- Muscle myopathies are detectable.
- The non-invasive nature of CT scans allows us to scan the same bird over time to follow and gain information about muscle growth and myopathy development.

Continuing Progress

- CT scanning is a promising tool that can be used to evaluate cardiovascular health.
- With this imaging system, in less than 1 minute, a scan could objectively measure multiple organs, bone density and muscle structures, providing comprehensive assessment for selection of health and welfare traits.

