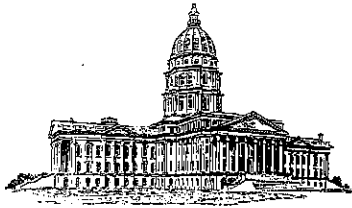


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Steven C. Johnson  
Representative, 108th District

Chairman Kerschen and members of the committee:

My name is Steven Johnson and I serve as a member of the House of Representatives from the 108<sup>th</sup> district south and west of Salina.

I appear before you today as a proponent of Senate Bill 263.

My discussion and investigation of industrial hemp began at the water vision conference in October of 2014. There we speculated about whether industrial hemp, since it seems to grow most anywhere, might be a crop with a lower water requirement. The 2014 U.S. farm bill removed the requirement to obtain a DEA permit for departments of agriculture and research institutions to grow industrial hemp for research purposes. However, state law still prohibits the growing of hemp.

Through World War II it was a fairly prevalent crop in our state as well as across the nation. To know whether it would be viable in Kansas today, we began to discuss several questions, including:

What enforcement issues would we face?

While enforcement concern is limited in this first step of research, we don't want to invest significantly in research if we cannot move beyond it. Industrial hemp has tetrahydrocannabinol (THC) content below .3%. This level makes it ineffective as a drug. The Department of Agriculture does have the technology to test THC content. I believe this is what is needed in our initial stages. We need to be very clear of who is able to transport and handle any plant material, but in limited tests done by the department and universities, this should be within our ability to oversee.

To go forward, we will need to develop technology, such as infrared images that can identify the difference in heat maps given off by plants of varying THC levels. This, combined with our states leadership in unmanned aerial vehicles could place us in a good position to monitor issues in our fields. Handling and transportation issues will also have to be studied to make sure differentiation is not an issue. Finally, the economics must be good enough to bear any cost of enforcement.

Senate Agriculture and Natural  
Resource Committee  
Date Jan 16, 2018  
Attachment 1-1

### What are the economic opportunities?

The uses of industrial hemp are many and varied, using both the stalk for fiber and the seed for foodstuffs and oil products. Key products include hemp seed foods, hemp oil, wax, resin, rope, cloth, pulp, paper and fuel. The paper is very high quality. The seeds are very high in omega 3's. This may provide exciting opportunities in foods. The oils are popular in cosmetics. There are broad applications in building and clothing products.

Currently, we do not have equipment that is specifically adapted to harvest and handle hemp. If the crop becomes more widespread, there will be a need and opportunity to develop efficient equipment to handle it. Kansas companies might be well positioned to meet this market demand.

In 1940, Henry Ford built an automobile out of hemp and soy plastic and ran it on hemp ethanol. The strength of the plastic body was demonstrated by Ford swinging an ax at it without inflicting damage.

It is in our interest to find out what possibilities exist for several of our Kansas industries.

### What agronomic impacts or benefits might we have?

Hemp has the ability to grow almost anywhere, resist pests and crowd out weeds. The plant grows quickly which provides natural weed control. Fiber varieties mature quickly (60 to 90 days) which may give us an option to double crop after wheat. Grain varieties may require over 110 days. In fiber production, over 40% of the plant's biomass returns to the soil in the form of roots, leaves and tops. More organic matter would be returned in varieties just grown for grain. The taproot could be a useful component in no-till environments. Benefits in crop rotations could be important.

### What is the water requirement?

It appears the water requirement to maximize production could be comparable to other crops. A concern regarding water is if there might be an impact on the THC content when the plants are stressed by lack of water. Nonetheless, we need data to determine our water requirement and what varieties might grow well in various parts of the state.

### What Does the Bill Do?

My understanding of the bill is that it only allows the Department of Agriculture and our regents institutions to conduct research.

It does not allow for commercial growth, or any production outside of the research interests of the department or university.

The 2014 U.S. farm allows departments of agriculture and research institutions to grow industrial hemp for research purposes. To be able to do this, we need to be consistent with our state law. This bill would make that change in Kansas law should there be an interest in and funding for research work.

Summation:

If we want meaningfully different outcomes on issues such as economic development or water use, we will have to identify and explore meaningfully different opportunities. Industrial hemp may provide opportunities in agriculture, food, building, textiles, paper, polymer development, aviation, agricultural machinery and so many other areas where Kansas has or could have strengths. I hope you will join me in supporting SB 263.