



# How is **juncea** performing?

Breeders give it rave reviews,  
but growers want more  
drought tolerance tests

by  
Kelly Funke

Since it was registered last spring, *Brassica juncea*, a “canola quality mustard,” has been grown on limited acreage. Nevertheless, some industry players already believe *juncea* may be the future of the canola industry.

The few growers who have experience with *juncea* say its yield matches herbicide-tolerant canola varieties under dry conditions. But they are still waiting to see *juncea* put to the test under the type of drought that struck much of Saskatchewan and Alberta this year.

Saskatchewan Wheat Pool (SWP) released the *juncea* varieties Arid and Amulet for commercial production last April. They were grown under contract by a small number of growers in southern Saskatchewan, where drought tolerance would usually be an issue. However, in 2002 those areas of the province received more moisture than other areas.

Dr. Derek Potts, SWP Manager of Cereals and *Juncea* Breeding, says *juncea* could significantly expand the canola growing area on the prairies. *Juncea* will perform to its potential in hot, dry conditions where *Brassica napus* canola will not, he adds.

“Under really hot conditions *napus* flowers will abort but under those extreme conditions *juncea* will still seed set,” says Potts. SWP also maintains that *juncea* has better seed vigour than *napus* canola.

Work on canola quality mustard began at Agriculture and Agri-Food Canada in the early 1980s. SWP joined the project in 1991. Plant breeders have concentrated on bringing the oil qualities in line with canola. *Juncea* (the same species that produces oriental and brown mustard) already had the drought tolerance characteristics breeders were looking for, but just as the first canola varieties had to be made low in erucic acid and glucosinolates, so did *juncea*. Breeders

also had to ensure it would have the same fatty acid profile as traditional canola oil.

As soon as they met the basic canola criteria, SWP sought and received registrations for Arid and Amulet. They are drought tolerant, resistant to blackleg and produce seedpods that are less prone to shattering than *napus* canola.

The company claims *juncea*'s yellow seed coat creates a more attractive meal than the dark brown or black seeds of *napus* canola. It also contains less fibre than dark seed-coats, making the meal more easily digestible and, therefore, a more desirable feed ingredient than *napus* canola.

Due to the heavy focus on end-use characteristics, there's still a lot of untapped agronomic potential in the species, says Potts. Growers are giving the agronomic package reserved but positive reviews.

Lonnie Ingell of Outlook, SK had worked for SWP and obtained a small amount of Arid seed in 2001. He planted 32 hectares (80 acres) as an experiment and it yielded 0.84 tonnes/ha (15 bushels/ac), the same as an InVigor hybrid canola variety. Both were grown in what he describes as a “fairly dry year.”

Richard Babonich of Lacadena, SK grew 32 ha of Amulet in 2001 and it yielded the same as a Roundup Ready canola—1.4 t/ha (25 bu/ac). Babonich says he plans to double his *juncea* acreage in 2003 but adds that he won't be completely won over until *juncea* reaches 2.24 t/ha (40 bu/ac).

The only difficulty Babonich had with *juncea* in 2001 was control of wild oats, which tend to be a problem on his farm. The herbicide choices are more limited than traditional canola but Babonich did bring the weed under control.

Growers must remember that although the end product of *juncea* is a canola quality



oil, it is managed like an oriental mustard, says Potts. Use the same herbicides on *juncea* that would be used on mustard—trifluralin and Muster, but not at the high rate. Some growers have done damage to the crop when they've applied Edge or Lontrel, says Potts.

It will take time to build up seed stocks because of the limited acreage that's been contracted so far, says Potts. But other seed industry representatives say the canola industry could be seeing more *juncea* varieties in the years to come.

Pioneer Hi-Bred International has started work on developing a *juncea* variety, according to Dave Charne, Director of Canola Research. It offers the possibility of expanded canola acres in Canada, he says.

“In a decade, that's going to be critical to keeping the Canadian industry competitive,” he says.

Crushers will likely treat *juncea* like *napus* and *rapa* and crush it all together as traditional canola, says Potts. CanAmera Foods has done a crush test on *juncea* at its Harrowby, MB plant but is reserving judgement until more *juncea* varieties are available and the crop is more widely grown. ☀