Field trials and grower experiences alike have shown that, while it is not uncommon to straight-combine canola successfully, substantial yield losses can occur and have been reported as high as 50% relative to swathing. A study at 4 locations in Saskatchewan in 2009 and 2010 evaluated the feasibility of straight-combining canola, the importance of cultivar selection, and the ability of commercial pod sealants to reduce shattering losses and increase yields in straight-combined canola. Overall the study found that straight-combining can be a viable alternative to swathing, but substantial yield losses may occur if harvest is delayed too long. Important varietal differences in shattering losses were detected and cultivar selection appears to be a factor of greater importance than pod sealants for growers planning to straight-combine canola.

The generally recommended and preferred practices when harvesting canola in Saskatchewan is to swath at 40-60% seed colour change and harvest the crop when the seed has matured and is dry enough to store. Straight-combining *Brassica napus* canola has not been recommended because the risks of yield losses from shattering have frequently outweighed the potential benefits. Field trials and grower experiences alike have shown that, while it is not uncommon to straight-combine canola successfully, substantial yield losses can occur and have been reported as high as 50% relative to swathing. However, there is considerable interest in straight-combining canola and technology has been striving to make this practice more feasible and less risky.

Pod sealants, such as Pod Ceal DC (Brett Young 2011) and Pod-Stik (United Agri-Products 2011), are another technology available to growers wanting to straight-combine canola. Pod sealants are designed to reduce the risk of pod shatter as the seeds inside mature and are applied when approximately 30-40% of the pods have changed color but are still generally pliable and not brittle. The total cost of applying a pod-sealant (product plus application) is similar to that of swathing; however more acres can be covered in a shorter time period with a high-clearance sprayer compared with a swather. Third party data evaluating the effectiveness of pod sealants for straight-combined canola in the Canadian prairies have been limited. In North Dakota, there was no yield benefit or reduction in shattering for straight-combined canola treated with pod sealants relative to straight-combined, untreated canola. Similarly, data from east central Saskatchewan have not shown a clear benefit to pod sealants. Despite uncertainty regarding their effectiveness, canola growers are interested in pod sealants and an appreciable number of acres have been treated over the years since these products have become available.
A study was initiated in 2009 and 2010 at 4 locations in Saskatchewan including Melfort, Indian Head, Scott and Swift Current. The objectives of the study were to evaluate:
1) the importance of cultivar selection when straight-combining canola,
2) the ability of commercial pod sealants to reduce shattering losses and increase yields in straight-combined canola, and
3) the overall feasibility of straight-combining canola.

The field trials included 5 cultivars and 4 harvest treatments. The cultivars evaluated were InVigor 5440, 4362, 45H26, InVigor 5020 and XCEED 8571, an Imidazolinone-tolerant canola quality *juncea* variety. The harvest treatments were: swathed, straight-cut with no pod sealant, straight-cut with Pod Ceal DC and straight-cut with Pod-Stik. Pod sealants were applied with field sprayers at approximately 30-40% pod colour change (when the pods were turning colour but still somewhat pliable) at a solution volume of 113 L/ha.

Overall, the study results found that total seed losses due to pod shattering and whole pods dropping, just prior to harvest, ranged from less than 1% of the total yield to over 14% for individual sites. The results showed that pod sealants did not have a measurable effect on shattering losses, even under high shattering conditions. There was no difference between the effect that each of the two pod sealant products had on seed yield at any of the sites; however, application of pod sealants resulted in a 15% yield advantage over straight-combining untreated canola at Melfort in 2010. No yield benefits to pod sealants were observed for the remaining 7 of 8 site-years.

In contrast, cultivar effects on seed loss were generally significant and important cultivar differences in resistance to shattering were observed. This variability in shattering resistance amongst *B. napus* canola varieties should be explored further. On average, losses for all cultivars were 4% of the total yield when harvest was completed reasonably close to the optimal stage. In terms of seed quality, straight-combining resulted in a small but significant increase in percent green seed and seed size; however pod sealants did not affect seed quality in any cases.

From the study, researchers concluded that straight-combining can be a viable alternative to swathing, but substantial yield losses may occur if harvest is delayed too long. The study results suggest that choosing a cultivar that is high yielding and relatively resistant to shattering is likely a factor of greater importance for canola growers considering straight-combining than deciding whether or not to apply a pod sealant.