



[Advanced](#)

The Merits of Drops ?

Posted by [Todd Parlo](#)

[Forum List](#) [Message List](#) [New Topic](#)

[Todd Parlo](#)

[The Merits of Drops ?](#)

August 26, 2013 03:52PM

Registered: 10 years ago

Posts: 301

In the season of harvest and preharvest drop, those of us who hate to see something wasted are chewing their fingernails. I would love to hear what folks out there are doing, if anything, with those little balls of opportunity.

Our procedure is still in flux. Yearly we collect the drops and go through a sort of sorting process, which more often than not ends in tossing them all in the compost anyway. Sometimes we do find a use.

I must stress here, being a commercial operation that we do not sell drops of any product using them. We do know, however the difference between intelligent eating and governmental regulation. So, we as a family find a use. Here's what we have found in research and personal experience:

1. They make good additions to the compost pile.
2. Animals often will eat them. The pigs we have had love them. Chickens will take them, especially if you mush them a bit. (We would let them soften a bit and then my son and I would hurl them to the ground and watch them explode. Great fun.
3. Humans eat them. In the past I would take the better ones, process and can them or cook them directly into pies and sauce. Recently I have been doing more research into pathogens and have found that some toxins, like the micotoxin patulin, can survive some pretty high temps. I am no wimp, and I will eat a raw apple on the ground without hesitation, but feeding the unknown to a kid is another issue. Anyone with a background in pathology please chime in.
4. Hard cider. This is any easy one. Provided the sugars are there and the fruit not a bruised mess it is a good use of the fruit in my direct experience. E coli, and patulin are both destroyed in the fermenting process.
5. Vinegar. Same conditions for hard cider apply. In both, use your head, a stinky half mashed apple is going to make a crappy brew.
6. Apple molasses/ fruit reductions. Any pathogenic organism sitting on the woodstove for 5 hours is dead in my opinion. (again anyone with information should chime in)
7. Dried fruit. Seems safe, but haven't read any literature on the subject.
8. Maggot traps. The early ones are good substrate for tangletrap apple maggot traps. And they are local.
9. The trebuchet. Some children in the neighborhood will be bringing a few of these they made to our apple tasting this fall to display a new use for the worst and most mushy of the candidates.

Cider is the big no no here. Drops are what prompted the federal regs of pasteurization. Interesting to note is that the patulin toxin is not destroyed by either classic pasteurizing or uv. So, whereas ecoli is reduced to governmentally allowed limits, other toxins are not.

The nutritional quality of drops is also in question with us. We have heard of anecdotes of sour bellies from eating green (immature) fruit, but what if any scientific basis is this rested on. It may be likely, but why? Are there enough nutrients built up to be of use? Are there higher anti-nutrients (ie excessive levels of tannins). Can the higher starch levels be readily digested, and does cooking aid in this?

Hoping this might be a helpful discussion for a lot of folks.

[Walden Heights Nursery & Orchard](#)

Zone 3 in Vermont

[Reply](#) [Quote](#)

[Jordan Statz](#)

[Re: The Merits of Drops ?](#)

September 05, 2013 06:02PM

Registered: 10 years ago

Posts: 2

Don't forget - Hunters will pay pretty good prices for apples labeled as "deer bait". We sell bushels of drops at 10 - 15\$, but I recommend looking into the hunting restrictions/laws before doing this - Not that there is anything illegal about selling bait, but I'd hate to see your local hunters get in trouble.

[Reply](#) [Quote](#)

[Dave Strnad](#)

[Re: The Merits of Drops ?](#)

September 14, 2013 04:11AM

Registered: 10 years ago

Posts: 6

I don't understand how patulin would be increased in drops, unless your picking up rotting apples. I see the potential for ecoli once it hits the ground, but isn't patulin related to rot regardless of whether the apple is in the tree or on the ground. Has there been any patulin related illness, etc?

[Reply Quote](#)

[David Maxwell](#)

[Re: The Merits of Drops ?](#)

September 18, 2013 04:01PM

Registered: 11 years ago

Posts: 197

What a neat question! Being an academic physician, I was prompted to pursue this more scientifically. Not surprisingly it is a bit fuzzy. You are absolutely correct that the issue has nothing to do with whether the fruit is on the ground or still on the tree. Patulin is produced by molds in rotting fruit, (mainly a species of *Penicilium*). In fact, if the size of the mold colony is less than 2 cm., (just under an inch), the quantity of patulin produced is at the limits of detection. So the fruit has to be significantly and obviously rotten to constitute a risk. Sound drops are not a problem; rotten fruit, whether on the tree or on the ground may contain patulin. There is an angle here, however. Fruit held at ambient temperature after picking, (equivalent to drop fruit lying on the ground for a period) developed patulin-producing molds. Chilling prevented this. So, drops which have lain around for a number of days on the ground may be a hazard, fresh drops are safe.

Now, the second question was the one which piqued my interest. In simple terms, no, as best I could determine in a search of the medical literature, there have been no cases of defined human disease caused by consumption of patulin-containing foods. But... there is no question that patulin is toxic, at least in large quantities. The basis for the concern about patulin (and a number of other fungal toxins) rests on animal experiments, generally with levels of patulin 1000 or more times higher than the regulatory limits. If one exposes rats to huge doses of patulin, it causes them to develop neurologic, renal, hepatic, and GI dysfunctions. Exposing monkeys to similar huge doses over 2 weeks caused them to stop eating after 10 days, (but nothing more). Exposing individual cells to high levels of patulin causes them to die, (it screws up calcium transport across the cell membrane), and it has been proposed as a chemotherapeutic agent to treat cancers. In practical terms, however, as an example, conventional and organic apple products sampled in New England contained up to 2700 micrograms/L of patulin, the regulatory limit being 50 micrograms/L. No human illnesses were noted, and we would never have known about it if the researchers had not been looking for patulin specifically. Bottom line, patulin is poisonous, (but so are a host of other things, including many of the things we spray on our trees), but whether this constitutes a significant hazard is much less clear. My own opinion, (and this is strictly a personal take), is that using sound drop apples is perfectly safe, but using rotten apples from any source is not a good idea, but the actual hazard is probably vanishingly small, since nobody has ever demonstrated any actual harm in humans, and the whole thing is based on feeding rats vast overdoses of patulin.

Finally, heat treatment does not inactivate patulin, but U-V does, (at least to some extent). But a yeast, *Metschnikovia pulcherrima*, introduced into apple juice spiked with patulin reduced the level to zero. I didn't find any documentation of a similar effect of other yeasts, but it is probably reasonable to postulate that fermenting the juice effectively eliminates any risk.

[Broomholm Orchard](#)

Zone 5b in Nova Scotia

[Reply Quote](#)

[Claude Jolicoeur](#)

[Re: The Merits of Drops ?](#)

September 18, 2013 06:11PM

Registered: 11 years ago

Posts: 226

This is somewhat similar to the subject of crushed apple seeds in cider - they contain a stuff that degrades into cyanide. However, the quantities of cyanide are extremely small. From my understanding, a cider drinker would be dead from the alcohol way before the amount of cyanide could have any adverse effect on his health...

For my part, I pressed my drops last weekend - I use them in my first season cider. This is normally a lighter cider than my late season ciders, but very refreshing, with less alcohol. Can be drunk during warm summer days.

I also use drops for the cider I prepare from early apples for making kitchen cider (kitchen cider is a sharp cider I use in cooking for gravies, sauces, déglacage, etc...). It is also this kitchen cider that I use for making vinegar.

Claude

[Jolicoeur Orchard](#)

Zone 4 in Quebec

Author, [The New Cider Maker's Handbook](#)

[Reply Quote](#)

[Josh Willis](#)

[Re: The Merits of Drops ?](#)


September 11, 2017 09:55AM

Registered: 6 years ago

Posts: 134

Happy to find this topic, been pondering this myself the last couple days.

Spent the afternoon slicing up drops to freeze. Ended up making a huge pie instead. But I think the theory still holds -- a mix of mostly ripe drops (Jonathans for us right now) and a few early drops (Newton Pippins & Grannies) was delicious, and presumably will be in a few months while frozen. And to one of the poster's points - mixing in ripe with not-quite-ripe should prevent a sour belly ache.

To add another item (years later) to Todd's list: I like to take a bucket of inedible drops on a walk to the woods and do my best Johnny Appleseed impression. winking smiley

Do pristine drops ripen in storage? I've had a hard time pinning this down...I'm guessing it depends on how close to 'peak' it dropped. But would love to hear from others on that.

Earthworks
Zone 7a in West-Central MD
Non-commercial, ~100 fruit trees, dwarf to MM106

[Reply Quote](#)

[Zea Sonnabend](#)

[Re: The Merits of Drops ?](#)

September 14, 2017 09:06AM

Registered: 10 years ago

Posts: 58

Thank you very much David, for looking into the safety of drops which are picked up promptly.

On Sunday night we had a rare weather phenomenon called a microburst where we had strong winds in the middle of the night for about 15 minutes. The next morning there was a carpet of apples on the ground, mostly under Jonagolds which we had started picking, and Newtown Pippin which is about a week away from harvest. Luckily it cooled off substantially then. After checking with my grower agent to make sure we could send them somewhere, we started picking up the sound ones (which was most of them) on Tuesday morning and finished today. We got 8 bins of Jonagold and 7 of pippin. It is a big economic hit because we could have fresh packed 3/4 of them, but at least they are going to a juice company that pasteurized the juice and we get some money for them instead of having them rot.

Most of our other varieties did not lose hardly any fruit, but the Fuji and Granny are not very close to ripe and other varieties hold their fruit better.

[Fruitilicious Farm](#)

Zone 9b in California

[Reply Quote](#)

[Newer Topic Older Topic](#)

[Print View RSS](#)

Sorry, only registered users may post in this forum.

[Click here to login](#)

This [forum](#) is powered by [Phorum](#).