

Tractor Engines Have Quadram Power

DES MOINES, Iowa — Massey-Ferguson has introduced three tractors in the 100-horsepower-and-over category, featuring the Perkins 1000 Series engine with Quadram power for improved fuel economy, increased torque, longer life, and quieter operation.

The M-F 3120 tractor at 100 PTO horsepower has a naturally aspirated engine. The M-F 3140 at 115 PTO horsepower has a turbocharged engine. The M-F 3660 at 140 PTO horsepower has a wastegate turbocharged engine.

The new Perkins 1000 Series engine with Quadram Power features a new design combustion chamber that achieves more complete air/fuel mixing for economical, powerful, and cleaner combustion.

The design of the piston head is a major breakthrough in farm engine technology. Four lobes or indentations in the piston head create an improved rate of swirl for improved air/fuel mixing. The design of the piston head gives rise to the Quadram — Quad meaning four — and RAM for Rapid Air Movement.

The Quadram-powered engine burns a higher proportion of the fuel in the engine power stroke, resulting in less mechanical stress on block, piston, connecting rods, crankshaft, and head gaskets. It is also much quieter and has improved fuel efficiency.

Other advanced design features include a gear-driven water pump, a helically cut gear train for precise timing of fuel pump and camshaft, and an integral oil cooler.

All three tractors will be avail-



Three new tractors featuring the new Perkins 1000 Series engine with Quadram power are available from Massey-Ferguson. They are the M-F 3660, shown here, at 140 PTO hp, the M-F 3140 at 115 PTO hp, and the M-F 3120 at 100 PTO hp.

able with radial tires, and the M-F 3140, M-F 3660, and M-F 3680 will offer an optional wider, fully adjustable seat with pneumatic float.

A new three-point hitch is standard on the M-F 3100 Series tractors. The new hitch design allows the operator to change the

geometry of the hitch lift, travel, and capacity.

All three new tractors offer Autotronic and Datatronic computer controlled operating systems, electronic draft control, and Perkins 1000 Series engines with Quadram Power.



DVC Offers Honey Bee Programs

DOYLESTOWN (Bucks Co.)— Delaware Valley College is offering two opportunities for honey bee enthusiasts.

The first is offered by the college in conjunction with the Bucks and Montgomery County Beekeepers' Associations and the Delaware Valley College Apiary Society, which will be sponsoring its annual 1990 Summer Bee Meeting on Saturday, June 16, 1990. Featured this year will be a program dealing with two serious problems facing beekeepers: the tracheal and the varroa mites.

The program will be presented by Tim Schuler, apiary inspector, New Jersey Department of Agriculture. Schuler is a graduate of Delaware Valley College, and was involved in beekeeping for a number of years before becoming a New Jersey bee inspector. The formal part of the program will be held in Room 114, Mandell Hall, starting at 1:00 p.m. It will be preceded by a bring-your-own picnic lunch at noon in front of Mandell Hall. Following the formal program, weather permitting, there will be an open house at the college's Apiary and Bee House, where refreshments will be served.

The second program will be offered on the following weekend, Friday, Saturday, and Sunday, June 22, 23, and 24. This is "Series A" of its three-day

advanced beekeeping short courses. The course is under the direction of Dr. Robert Berthold, Delaware Valley College's beekeeping specialist, who will be assisted by Jack Matthenius, the New Jersey supervisor of bee culture, retired; Frank Wojcik, Cook College bee specialist; and Gary Bradshaw, a commercial beekeeper, queen breeder, and bee supply dealer from New Jersey.

This course involves three different topic areas. The first topic is the queen honey bee, including her life history, swarming, methods of its control, methods of rearing, artificial insemination, and behavior. The second topic deals with honey bee diseases and pests, including the major brood diseases, internal and external mites, other insects, animals, and insecticides. The third topic is honey, including how the bees make it, its chemistry, the types, methods of harvesting and processing, production of honey fruit spreads, and home uses of honey.

Enrollment in this course will be limited, and participants must have a minimum of three years of beekeeping experience and/or have taken another beekeeping course. Further information about this course or the program on June 16 can be obtained by writing to Dr. Berthold, Delaware Valley College, Doylestown, PA 18901, (215) 345-1500.

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